36. MAMMAL HUNTING

Today's Item **Information** ☐ **Action** ☒

Authorization to publish notice of intent to amend mammal hunting regulations for the 2016-2017 seasons.

Summary of Previous/Future Actions

- **Today's notice hearing** **Dec 9-10, 2015; San Diego**
- Discussion hearing Feb 10-11, 2016; Sacramento
- Adoption hearing Apr 13-14, 2016; Santa Rosa

Background

Annual tag quotas for big game are indicated as a range (e.g., [0 - 40]) from which the final 2016 recommendation will be made at the conclusion of population survey efforts. For sections 364 and 364.1, the quotas and seasons are proposed to be moved into a more convenient tabular format; new hunts are also proposed for elk.

Additional change proposals include: modifications regarding the use of electronic collars on dogs; clarifying the definition of soft-nose bullets versus fragmenting bullets; clarifying the take of domestic pigeons and allowing an extended season for hunting non-native deer; and establishing a process for issuing refunds for unused fund-raising tags.

Significant Public Comments

Comment letters/emails have been received from a number of individuals both opposed to hunting elk in Del Norte County and in favor of mitigating damage the elk cause in the county by increasing the number of hunting tags.

Recommendations

Because commenters recommend both a zero elk tag quota and an increased elk tag quota, beyond the scope of the current recommendations from DFW, staff recommends that commenters requesting additional changes to elk regulations use the approved petition process for possible consideration in a future, annual review of elk tag quotas. DFW staff will provide a presentation and be available to discuss this issue.

Exhibits

1. DFW presentation
2. 265 ISOR, use of dogs
3. 353 ISOR, methods for taking
4. 360(a) ISOR, deer in A, B, C and D zones
5. 360(b) ISOR, deer in X zone
6. 360(c) ISOR, deer, additional hunts

7. 361 ISOR, deer, archery
8. 362 ISOR, Nelson bighorn sheep
9. 363 ISOR, pronghorn antelope
10. 364 ISOR, elk hunts
11. 364.1 ISOR, SHARE elk hunts
12. 472 ISOR, nongame animals
13. 708.18 ISOR, fund raising return for refund
14. Final environmental document deer
15. Final environmental document pronghorn antelope
16. Final environmental document Nelson bighorn sheep
17. Draft environmental document elk
18. Email from Phoebe Lenhart opposing any increase in Roosevelt deer hunting, received Nov 8, 2015
19. Email from Aimee Bolender requesting that elk be protected but not allowed to damage people's property, received Nov 14, 2015
20. Letter from the Center for Biological Diversity re-submitting scoping comments on potential impacts from elk hunting regulations, received Nov 15, 2015
21. Letter from Friends of Del Norte making a number of requests related to an elk management plan and elk hunting, received Nov 18, 2015
22. Email from Helen Ferguson in favor of increasing tag numbers for both sexes of Roosevelt elk in Del Norte County, received Nov 24, 2015

Motion/Direction

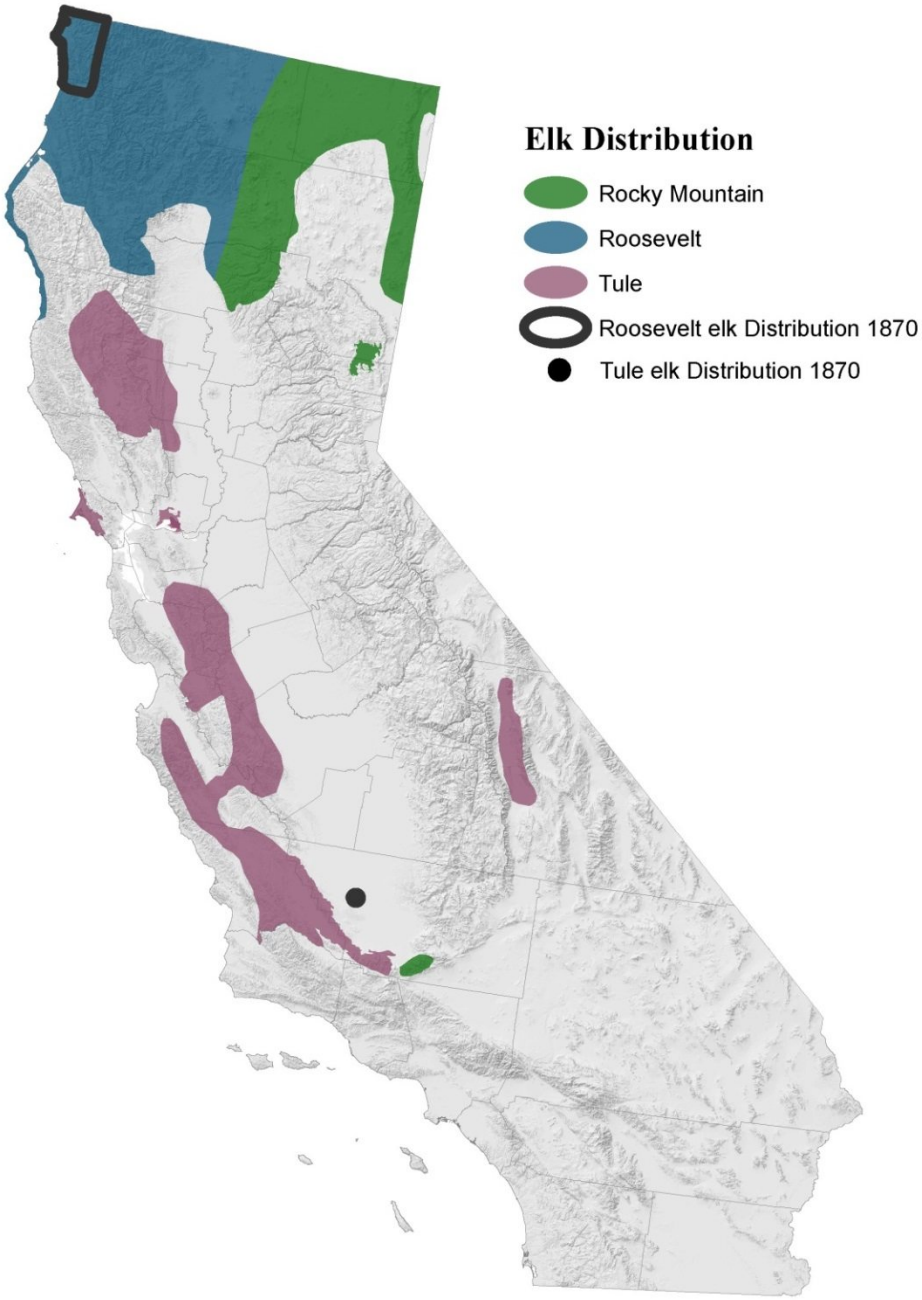
Moved by _____and seconded by _____ that the Commission authorizes publication of a notice of its intent to amend Sections 265, 353, 360, 361, 362, 363, 364, 364.1, 472 and 708.18 regarding mammal hunting regulations for the 2016-2017 season.

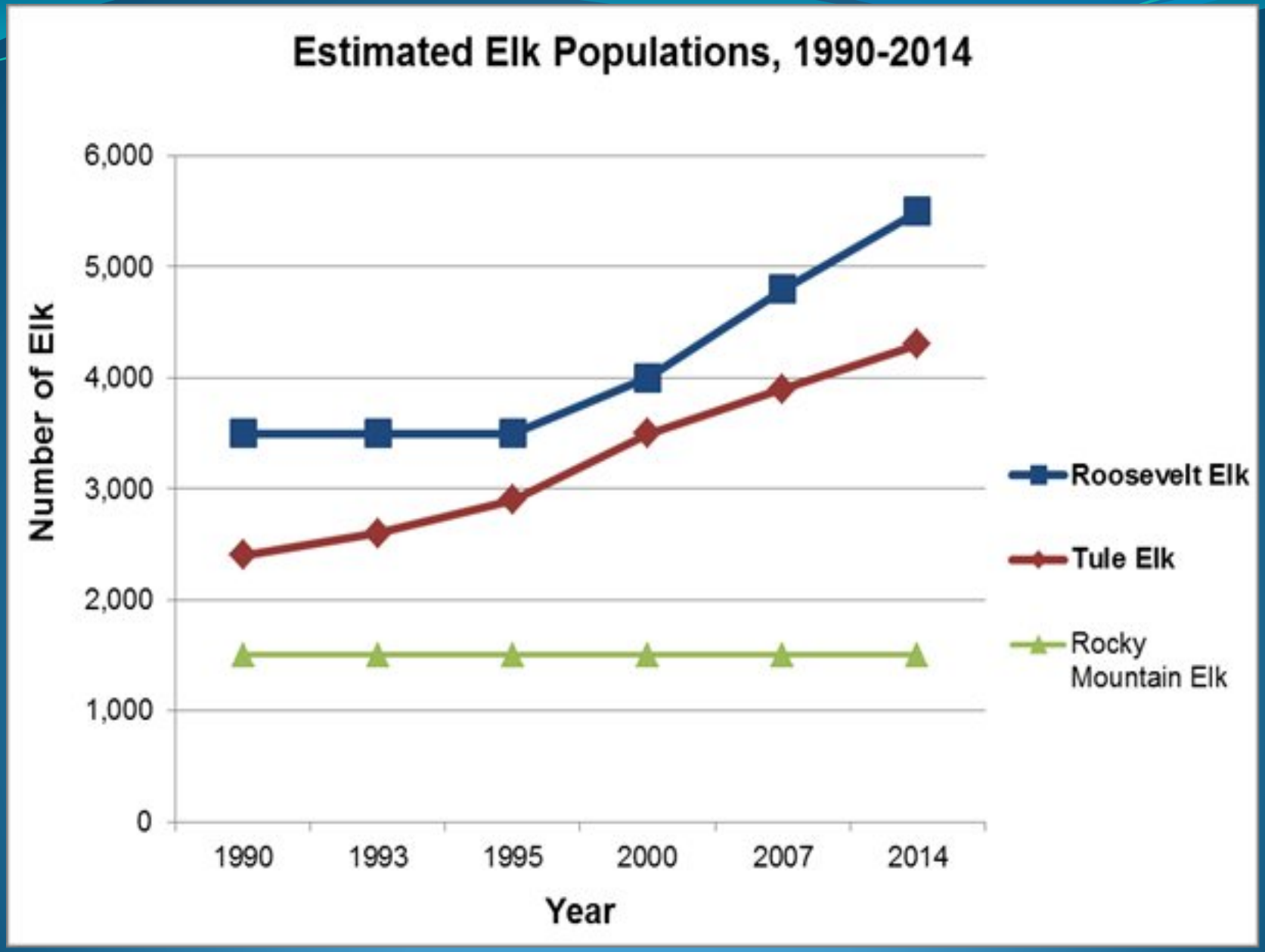
2016 Proposed Elk Hunting Regulation Changes

Background on California's Elk

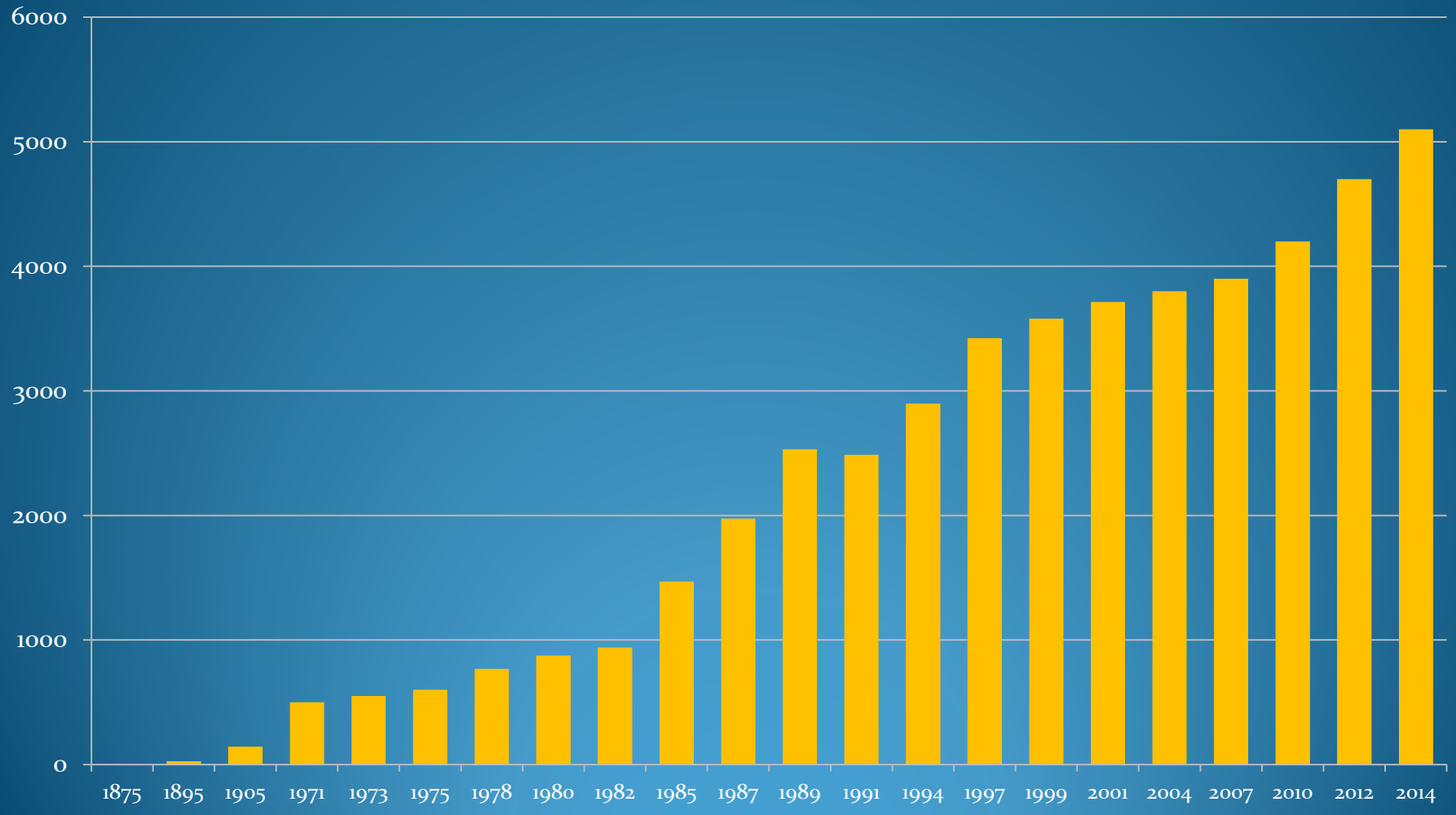
Three subspecies in CA

Tule Elk is endemic




Estimated Elk Populations, 1990-2014
Number of Elk
6,000
5,000
4,000
3,000
2,000
1,000
0
1990
1993
1995
2000
2007
2014
Year
Roosevelt Elk
Tule Elk
Rocky Mountain Elk

California's Estimated Tule Elk Population



Specific to Tule Elk

- Legislative action in 1971 - goal of 2,000 tule elk, above which the Commission may authorize take. See FGCode 3951
- Relocate elk to suitable areas where possible.
- Manage each tule elk herd to reduce property and environmental damage.
- *1979 Management Plan for the Conservation of Tule Elk* (Tule Elk Interagency Task Force) has been, and continues to be, a success for Tule elk conservation

Example model run in Elk Draft ED

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SAN EMIGDIO ELK HERD - SIMULATION RUNS, GENERAL, SHARE, & PLM 2016
              Ratio = 52/100/20 - Maximum Calf Survival = 67%
                 THIS PROGRAM CALCULATES CHANGES IN
                 HERD
                 CHARACTERISTICS BASED ON VARIOUS HARVEST RATES.

PROPOSED PROJECT: BULL, COW, INCLUDING COOPERATIVE
TAGS
TO HARVEST UP TO 10 BULLS & 24 ANTLERLESS
Various combination of tags to achieved harvest, includes cooperative tags
Assuming success rate of 80% bull and 75% antlerless
                                        HERD SIZE    360  ELK
       % BULLS LOST TO NON HUNTING CAUSES             25  %
        % COWS LOST TO NON HUNTING CAUSES             12  %
                 % OF BULLS KILLED BY HUNTERS         10  %
                  % OF COWS KILLED BY HUNTERS         12  %
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Est. carrying capacity

		BULLS	COWS	SURV. CALVES	TOTAL	K	BULLS HARVEST	COWS HARVEST
START	AUG	109	209	42	360	360	0	0
YEAR 1	"	97	203	140	440	600	10	24
YEAR 2	"	118	219	119	456	600	10	24
YEAR 3	"	126	224	130	480	600	10	24
YEAR 4	"	136	233	133	502	600	10	24
YEAR 5	"	145	242	140	526	600	10	24
YEAR 6	"	154	253	146	553	600	10	24
YEAR 7	"	163	265	153	581	600	10	24
YEAR 8	"	172	280	148	600	600	10	24
YEAR 9	"	177	290	133	600	600	10	24
YEAR 10	"	176	292	132	600	600	10	24

BULL CALF

As a result of the Commission, Department, and others efforts for over 108 years since hunting licenses were 1st required, regulations were starting to be enforced, and active management and relocation began to occur:

- Great wildlife conservation and management success story for tule elk in California
- Eliminated nearly all confined herds (now free-ranging); limited opportunity for more relocation
- Widespread in California's Coastal Ranges & Owens Valley
- Extremely popular game animal
- Increasingly seen and enjoyed by the public for wildlife viewing
- Continuing to increase (as evidenced by increased problems from landowners)

- **Roosevelt Elk**- Similar story to tule elk in terms of decline and then rebuilding through management efforts and regulation of harvest to attempt to manage growth of the population

- Elk concentrate on bottomlands/pastures in NW part of state = increasing conflict with landowners

- Population concentration too high in these areas, and there is limited access for hunting opportunity, but great viewing opportunity along the Hwy 101 corridor

Proposed Solutions:

Complete statewide management plan

- Draft Statewide framework plan nearly done
- Specific EMU- Elk Management Unit drafts nearly done

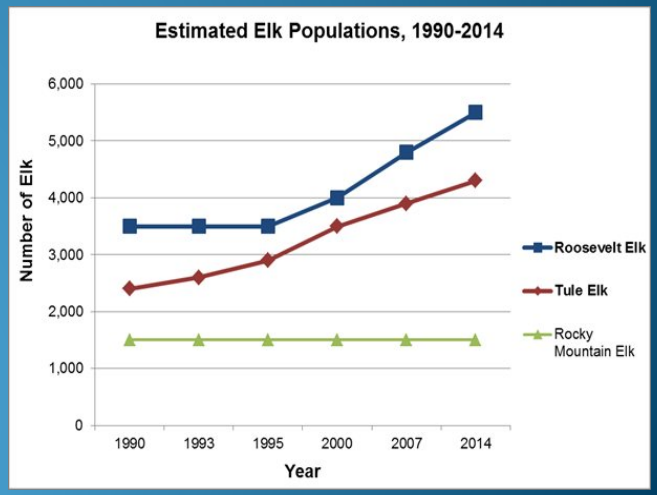
Proposed regulations consistent with final plan because both are necessarily guided by existing legislative mandate.

Redefine boundaries/add zones for effective use of hunting to address elk/landowner conflict; provide hunting opportunity

Increase tag quotas where elk problems are increasing

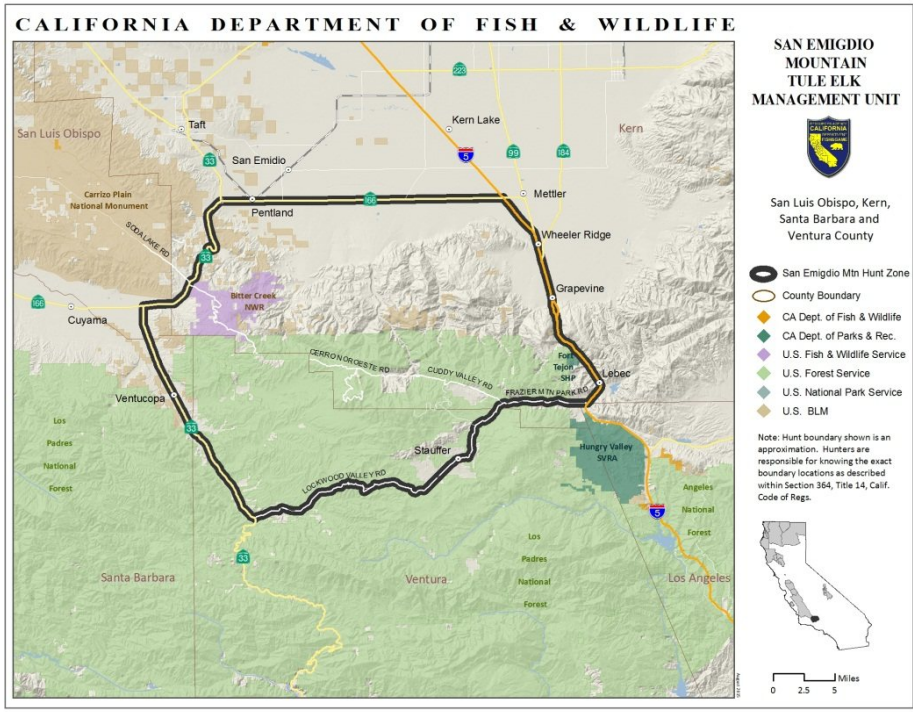
Incentive-based to increase landowner support
Of elk on their property (SHARE or PLM)

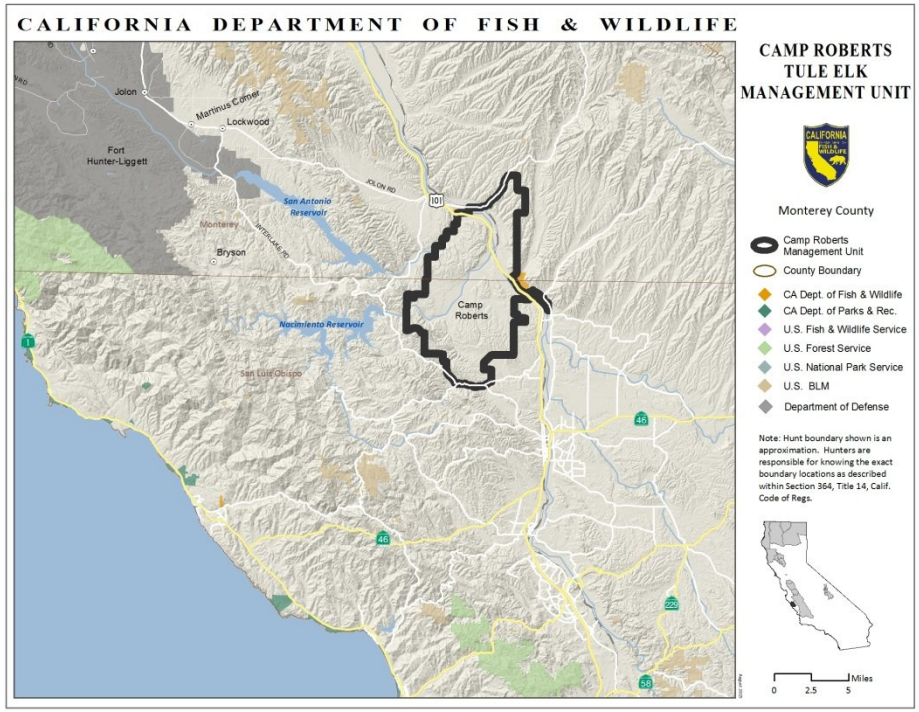
Reduce need/pressure to issue depredation permits



Example- New Zones

- San Emigdio (Kern, San Luis Obispo, Santa Barbara, and Ventura Counties)
- Camp Roberts (Monterey and San Luis Obispo Counties)

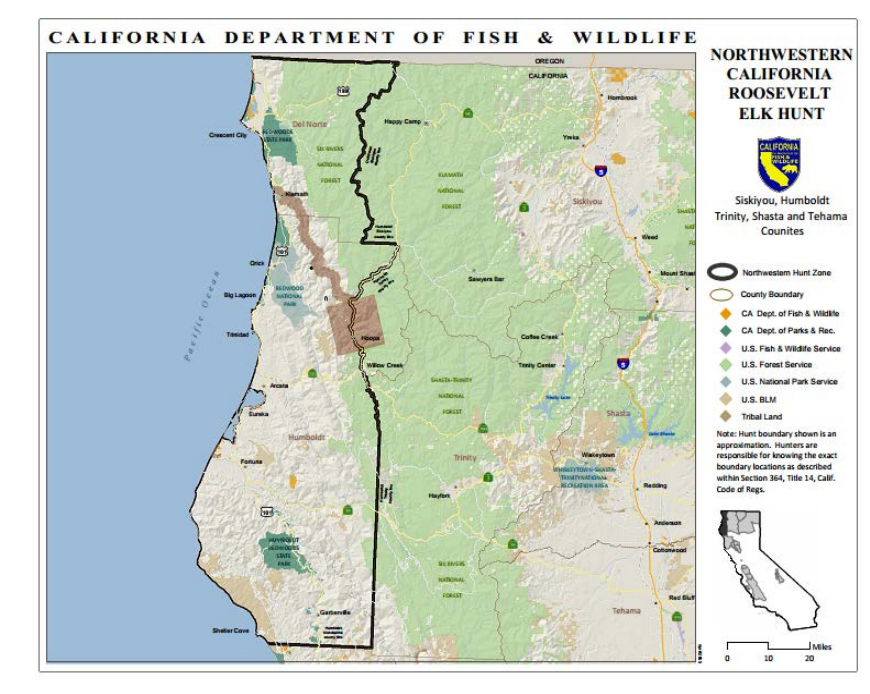


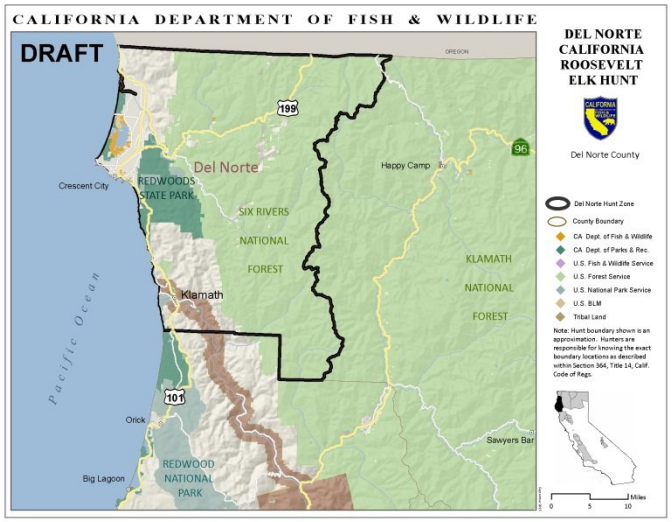


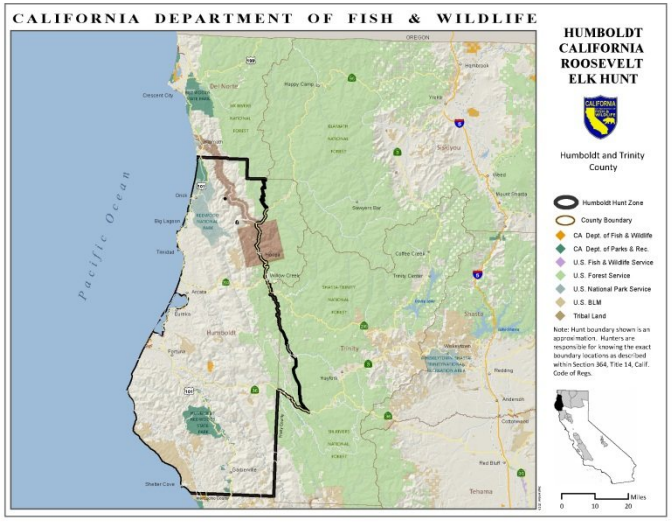
Example -Zone Splits - Northwestern

Now - Del Norte and Humboldt

(minor boundary modification to follow roads)

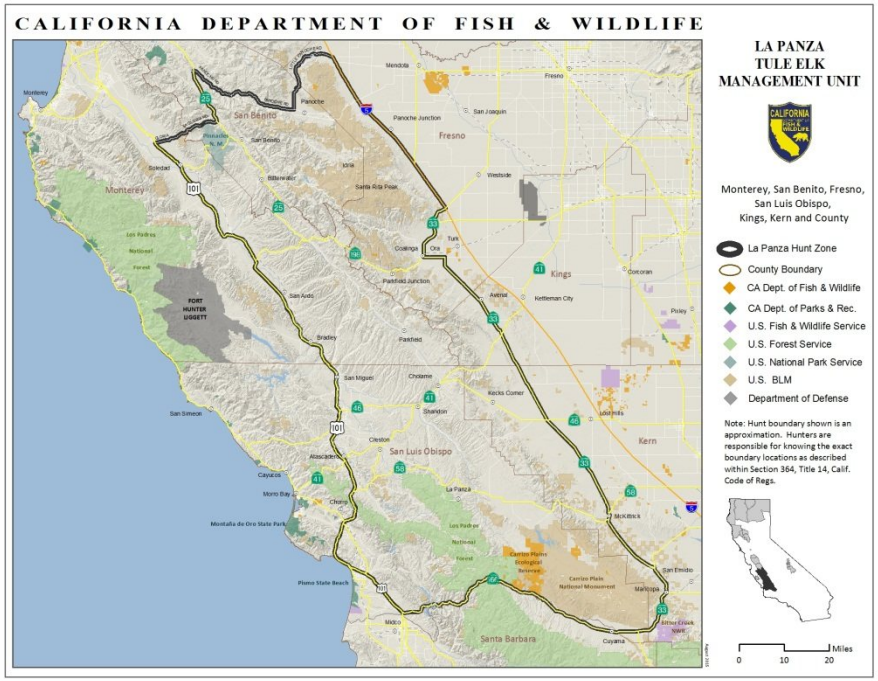


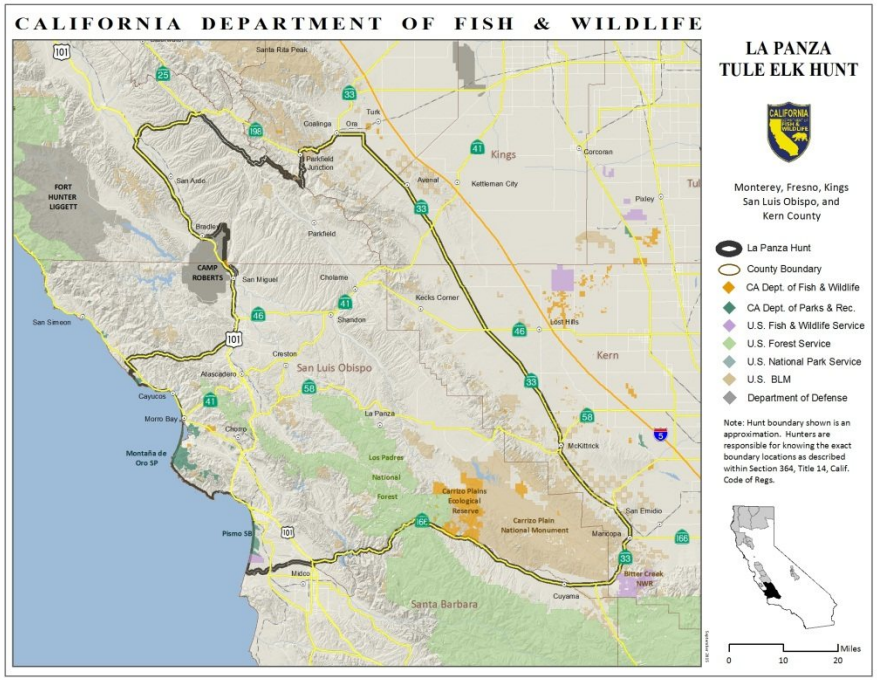




Example- Zone Modifications – La Panza

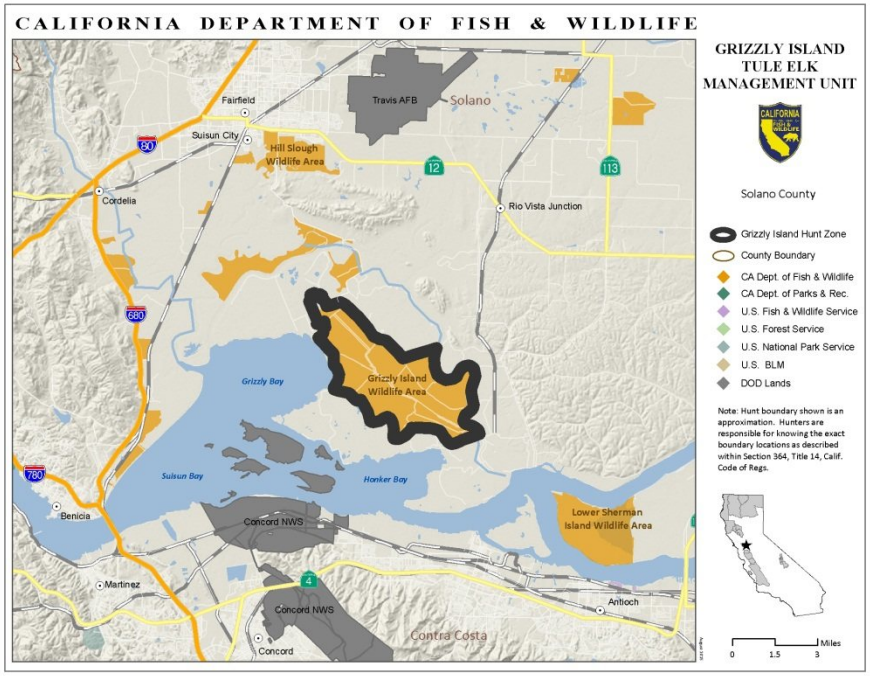
Overall boundaries modified – Expanded to the west

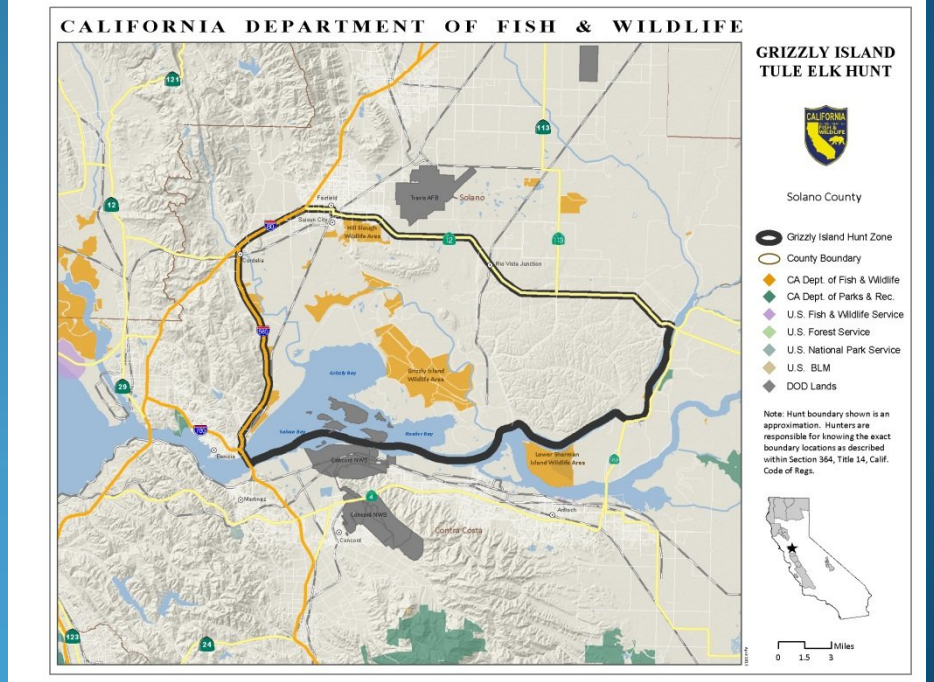




Example- Zone Modification - Grizzly Island

Expanded boundary





Proposal Would Result in: Additional Hunt Periods and Types

- Del Norte and Humboldt (5 periods)
- Marble Mountain North and South (3 periods and muzzleloader/archery period)
- Siskiyou (3 periods and muzzleloader/archery period)
- San Luis Reservoir (3 periods)
- Grizzly Island (13 periods)
- Lake Pillsbury (3 Periods)

Proposal also modifies: Multi-Zone Fund Raising Tag

- Modify season dates so it is consistent across all zones
- Tag is valid in Del Norte, Humboldt, Marble Mountain North, Marble Mountain South, Siskiyou, Northeastern, and La Panza.
- Tag will be valid for 90 days beginning in mid-August

STATE OF CALIFORNIA
FISH AND GAME COMMISSION
INITIAL STATEMENT OF REASONS FOR REGULATORY ACTION
(Pre-Publication of Notice Statement)

Amend Section 265
Title 14, California Code of Regulations (CCR)
Re: Use of Dogs for Pursuit/Take of Mammals or for Dog Training

Date of Initial Statement of Reasons: November 2, 2015

II. Dates and Locations of Scheduled Hearings:

(a)	Notice Hearing:	Date:	December 10, 2015
		Location:	San Diego, CA
b)	Discussion Hearings:	Date:	February 11, 2016
		Location:	Sacramento, CA
(c)	Adoption Hearing:	Date:	April 14, 2016
		Location:	Santa Rosa, CA

III. Description of Regulatory Action:

(a) Statement of Specific Purpose of Regulation Change and Factual Basis for Determining that Regulation Change is Reasonably Necessary:

Subsection 265(d)(1): Delete the provision prohibiting the use of treeing switches.

The provision is no longer necessary and the amendment will eliminate the prohibition. This type of equipment might only used when pursuing an animal that can climb, such as bear or bobcat. However, recent changes in legislation have greatly restricted the use of dogs and the pursuit of bear and bobcat with dogs is prohibited. The use of dogs is now limited to only wild pigs and deer, rendering the current prohibition on the use of treeing switches unnecessary.

Subsection 265(d)(2): Delete the provision prohibiting the use global positioning system (GPS) equipped dog collars.

The provision is no longer necessary and the amendment will eliminate the prohibition. Prohibiting the use of GPS equipment is unnecessary and increases the possibility that downed game (wild pigs and deer) may be lost to the hunter creating waste. GPS equipped collars would also aid in the retrieval of lost dogs.

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(b) Authority and Reference Sections from Fish and Game Code for Regulation:

Authority: Sections 200, 202, 203, 3960, 3960.2 and 3960.4, Fish and Game Code. Reference: Sections 200, 202, 203, 203.1, 207, 3960, 3960.2, 3960.4 and 4756, Fish and Game Code.

(c) Specific Technology or Equipment Required by Regulatory Change: None.

(d) Identification of Reports or Documents Supporting Regulation Change: None.

(e) Public Discussions of Proposed Regulations Prior to Notice Publication:

Fish and Game Commission's Wildlife Resources Committee (WRC) meeting held on September 9, 2015 in Fresno, California. The proposed changes to the regulation were discussed and the members of the WRC concurred with the Department's recommendations.

IV. Description of Reasonable Alternatives to Regulatory Action:

(a) Alternatives to Regulation Change:

No alternatives were identified.

(b) No Change Alternative:

The no change alternative was considered and rejected because it would not eliminate the unnecessary regulation concerning the use of treeing switches. The no change alternative would also continue the regulation prohibiting the use of GPS equipped collars and therefore continue the problem of hunters unable to retrieve wounded game (wanton waste) or locating lost dogs.

(c) Consideration of Alternatives:

In view of information currently possessed, no reasonable alternative considered would be more effective in carrying out the purpose for which the regulation is proposed, would be as effective and less burdensome to affected private persons than the proposed regulation, or would be more cost effective to affected private persons and equally effective in implementing the statutory policy or other provision of law.

V. Mitigation Measures Required by Regulatory Action:

The proposed regulatory action will have no negative impact on the environment; therefore, no mitigation measures are needed.

VI. Impact of Regulatory Action:

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The potential for significant statewide adverse economic impacts that might result from the proposed regulatory action has been assessed, and the following initial determinations relative to the required statutory categories have been made.

(a) Significant Statewide Adverse Economic Impact Directly Affecting Businesses, Including the Ability of California Businesses to Compete with Businesses in Other States:

The proposed action will not have a significant statewide adverse economic impact directly affecting business, including the ability of California businesses to compete with businesses in other states. Removing outdated prohibitions on treeing switches and GPS collars are not anticipated to affect current levels of hunting effort for species that can legally be pursued with dogs.

(b) Impact on the Creation or Elimination of Jobs Within the State, the Creation of New Businesses or the Elimination of Existing Businesses, or the Expansion of Businesses in California; Benefits of the Regulation to the Health and Welfare of California Residents, Worker Safety, and the State's Environment:

The Commission anticipates benefits to the health and welfare of California residents. Hunting provides opportunities for multi-generational family activities and promotes respect for California's environment by the future stewards of the State's resources. The Commission anticipates benefits to the State's environment in the sustainable management of natural resources.

The proposed action will not have significant impacts on jobs or business within California and does not provide benefits to worker safety.

(c) Cost Impacts on Representative Private Persons/Business:

The Commission is not aware of any cost impacts that a representative private person or business would necessarily incur in reasonable compliance with the proposed action.

(d) Costs or Savings to State Agencies or Costs/Savings in Federal Funding to the State: None.

(e) Other Nondiscretionary Costs/Savings to Local Agencies: None.

(f) Programs Mandated on Local Agencies or School Districts: None.

(g) Costs Imposed on Any Local Agency or School District that is Required to be Reimbursed under Part 7 (commencing with Section 17500) of Division 4: None.

(h) Effect on Housing Costs: None.

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VII. Economic Impact Assessment

The proposed action will have no statewide economic or fiscal impact because the proposed action modifies the regulation regarding the use of electronic dog collars while hunting only for deer and wild pigs. The regulation eliminates unnecessary language prohibiting the use of treeing switches; and, permits GPS equipped collars increasing the hunter's ability to find and retrieve downed wild pigs and deer as well as lost dogs. There are no costs to businesses or persons.

(a) Effects of the regulation on the creation or elimination of jobs within the State:

The regulation will not affect the creation or elimination of jobs because it is unlikely to cause an increase or decrease in hunting effort.

(b) Effects of the regulation on the creation of new businesses or the elimination of existing businesses within the State:

The regulation will not create new businesses or eliminate businesses within the State because it is unlikely to cause an increase or decrease in hunting effort.

(c) Effects of the regulation on the expansion of businesses currently doing business within the State:

The regulation will not affect the expansion of businesses currently doing business in the State because it is unlikely to cause an increase or decrease in hunting effort.

(d) Benefits of the regulation to the health and welfare of California residents:

The Commission anticipates benefits to the health and welfare of California residents. Hunting provides opportunities for multi-generational family activities and promotes respect for California's environment by the future stewards of the State's resources.

(e) Benefits of the regulation to worker safety.

The proposed regulation will not affect worker safety.

(f) Benefits of the regulation to the State's environment:

It is the policy of the State to encourage the conservation, maintenance, and utilization of the living resources of the State. The Commission anticipates benefits to the State's environment in the sustainable management of natural resources.

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INFORMATIVE DIGEST

(Policy Statement Overview)

Amend Section 265, Title 14, CCR, by deleting subsections (d)(1) and (d)(2). The current regulations prohibit the use of treeing switches and GPS collar equipment for dogs used in the taking of mammals. Recent changes to statutes have restricted the use of dogs by hunters to only the taking of wild pigs and deer. The prohibition on the use of treeing switches is therefore unnecessary. Allowing the use of GPS collar equipment will improve a hunter's ability to find and retrieve downed game and lost dogs.

Benefits of the regulations

The regulation eliminates unnecessary language regarding the prohibition on the use of treeing switches; and, permits GPS equipped collars increasing the hunter's ability to find and retrieve downed wild pigs and deer as well as lost dogs.

Non-monetary benefits to the public

The Commission does not anticipate non-monetary benefits to the protection of public health and safety, worker safety, the prevention of discrimination, the promotion of fairness or social equity and the increase in openness and transparency in business and government.

Consistency with State or Federal Regulations

The Fish and Game Commission, pursuant to Fish and Game Code Sections 200, 202 and 203, has the sole authority to regulate hunting in California. Commission staff has searched the California Code of Regulations and has found the proposed changes pertaining to the use of dogs for hunting mammals to be consistent with the provisions of Title 14. Therefore the Commission has determined that the proposed amendments are neither inconsistent nor incompatible with existing State regulations.

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REGULATORY TEXT

Section 265, Title 14, CCR is amended to read:

§265. Use of Dogs for Pursuit/Take of Mammals or for Dog Training.

... [No changes to subsections (a) through (c)]

~~(d) Prohibition on Treeing Switches and Use of Global Positioning System Equipment.~~
~~(1) Treeing Switches. Electronic dog retrieval collars containing functioning treeing switches (devices consisting of a switch mechanism that results in a change in the transmitted signals when the dog raises its head to a treed animal) are prohibited on dogs used for the pursuit/take of mammals.~~
~~(2) Global Positioning System Equipment. Electronic dog retrieval collars employing the use of global positioning system equipment (devices that utilize satellite transmissions) are prohibited on dogs used for the pursuit/take of mammals.~~
Authority cited: Sections 200, 202, 203, 3960, 3960.2 and 3960.4, Fish and Game Code. Reference: Sections ~~200, 202, 203, 203.1, 207,~~ 3960, 3960.2, and 3960.4 ~~and 4756~~, Fish and Game Code.

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STATE OF CALIFORNIA
FISH AND GAME COMMISSION
INITIAL STATEMENT OF REASONS FOR REGULATORY ACTION
(Pre-Publication of Notice Statement)

Amend Section 353
Title 14, California Code of Regulations (CCR)
Re: Methods Authorized for Taking Big Game

I. Date of Initial Statement of Reasons: November 2, 2015

II. Dates and Locations of Scheduled Hearings:

(a) Notice Hearing:	Date:	December 10, 2015
	Location:	San Diego, CA
(b) Discussion Hearing:	Date:	February 11, 2016
	Location:	Sacramento, CA
(c) Adoption Hearing:	Date:	April 14, 2016
	Location:	Santa Rosa, CA

III. Description of Regulatory Action:

(a) Statement of Specific Purpose of Regulation Change and Factual Basis for Determining that Regulation Change is Reasonably Necessary:

It is necessary to amend subdivision (a) of Section 353 in order to specifically require compliance with this section and Section 250.1 when taking big game. The proposed language, "It shall be unlawful…" is intended to clearly communicate to the public that compliance with these provisions is mandatory. The proposed amendment will also facilitate enforcement of these provisions by providing citing language that can be used by wildlife officers when issuing citations. Prosecutors throughout the state have expressed their preference that sections used as citing authorities be phrased in this manner, and Section 353 is commonly used as a citing section.

The current regulations in Section 353, Title 14, CCR, provide method of take restrictions for big game using centerfire cartridges in rifles, pistols and revolvers. The projectiles used in these firearms are required under subsection 353(c) to be "cartridges with softnose or expanding projectiles." While the terms "softnose" and "expanding" are commonly accepted from the standpoint of bullet design and trade industry terminology, no clear definition of either is provided in regulation. These same terms are difficult to apply to newly developed bullet types such as those commonly described as "frangible" bullets. The lack of distinction between

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projectile types is confusing to hunters and difficult to interpret by law enforcement. Furthermore, frangible bullets designed primarily for security or tactical purposes are not an efficient and effective means to take big game.

The commonly accepted industry standard for centerfire cartridges (recommended by most major bullet/ammunition manufacturers for the take of big game animals) is a softnose or expanding type bullet that upon impact or while passing through animal tissue: 1) increases in diameter (mushrooms) from its original diameter; and 2) maintains close to its original manufactured weight. Bullets designed to demonstrate these terminal performance characteristics are considered the most effective in obtaining the quickest, most efficient humane kills. Further, softnose or expanding bullets are thought to provide the best combination of deep penetration through various tissue types including bone, and expansion (mushrooming) which results in the greatest damage to vital organs through direct trauma to tissues and surrounding areas, and to circulatory and central nervous systems through hydrostatic and hydraulic forces.

Frangible bullets are typically manufactured by fusing or binding a powdered metal component composed of copper or copper-tin in jacketed or unjacketed formats. Frangible bullets are designed to disintegrate or fragment upon impact with a hard surface, with the intent to reduce or eliminate ricochet and pass through conditions which can result in impact to secondary or unintended targets under non-hunting uses. In hunting applications this would result in a decrease in penetration due to the loss of momentum through extreme fragmentation.

The terminal performance characteristics of the more traditional softnose or expanding bullets differ substantially from those of frangible bullets. While the intended design of softnose/expanding bullets is to maintain a bullet's integrity in order to obtain maximum penetration and tissue destruction, the opposite is true regarding frangible bullets designed to disintegrate or break into a number of bullet fragments resulting in reduced penetration.

The proposed regulation changes are as follows:

1) Add clause to subsection 353(a) specifically making it unlawful to use methods of take or projectiles for big game other than what is authorized in Sections 250.1 and 353;

2) Add a new subsection 353(b)(1) defining the term "softnose or expanding projectile" based upon design and common accepted terminology of mushrooming, bullet diameter increase, and bullet weight retention; and

3) Add a new subsection 353(b)(2) to clarify that "frangible" bullets are not softnose or expanding projectiles and therefore not legal for the take of big game in accordance with subsection 353(c).

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(b) Authority and Reference Sections from Fish and Game Code for Regulation:

Authority cited: Sections 200, 202 and 203, Fish and Game Code. Reference: Sections 2005, 2055, 3004.5 and 3950, Fish and Game Code.

(c) Specific Technology or Equipment Required by Regulatory Change: None

(d) Identification of Reports or Documents Supporting Regulation Change: None

(e) Public Discussions of Proposed Regulations Prior to Notice Publication:

The Department's regulation change concepts for the 2016-17 big game hunting seasons were presented and discussed at the Fish and Game Commission Wildlife Resources Committee meeting held in Fresno on September 9, 2015.

IV. Description of Reasonable Alternatives to Regulatory Action:

(a) Alternatives to Regulation Change:

No alternative was identified.

(b) No Change Alternative:

The “No Change Alternative” was considered and found inadequate to attain the project objectives. Retaining the current terminology without clear, concise definitions results in confusion on the part of hunters and creates a legal obstacle to enforcement of existing method of take restrictions.

(c) Consideration of Alternatives:

In view of information currently possessed, no reasonable alternative considered would be more effective in carrying out the purpose for which the regulation is proposed, would be as effective and less burdensome to affected private persons than the proposed regulation, or would be more cost effective to affected private persons and equally effective in implementing the statutory policy or other provision of law.

(d) Description of Reasonable Alternatives That Would Lessen Adverse Impact on Small Business: None.

V. Mitigation Measures Required by Regulatory Action:

The proposed regulatory action will have no negative impact on the environment; therefore, no mitigation measures are needed.

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VI. Impact of Regulatory Action:

The potential for significant statewide adverse economic impacts that might result from the proposed regulatory action has been assessed, and the following initial determinations relative to the required statutory categories have been made:

(a) Significant Statewide Adverse Economic Impact Directly Affecting Businesses, Including the Ability of California Businesses to Compete with Businesses in Other States.

The proposed action will not have a significant statewide adverse economic impact directly affecting business, including the ability of California businesses to compete with businesses in other states. The proposed action adds definitions to method of take regulations for big game in order to clarify regulations for law enforcement and legal applications, and eliminate possible confusion on the part of hunters. The proposal is economically neutral to business.

(b) Impact on the Creation or Elimination of Jobs Within the State, the Creation of New Businesses or the Elimination of Existing Businesses, or the Expansion of Businesses in California; Benefits of the Regulation to the Health and Welfare of California Residents, Worker Safety, and the State's Environment:

The Commission anticipates benefits to the health and welfare of California residents and to the state's environment. Hunting provides opportunities for multi-generational family activities and promotes respect for California's environment by the future stewards of the State's resources and the action contributes to the sustainable management of natural resources.

The proposed action will not have significant impacts on jobs or business within California and does not provide benefits to worker safety.

(c) Cost Impacts on Private Persons.

The Commission is not aware of any cost impacts that a representative private person or business would necessarily incur in reasonable compliance with this proposed action.

(d) Costs or Savings to State Agencies or Costs/Savings in Federal Funding to the State: None

(e) Other Nondiscretionary Costs/Savings to Local Agencies: None

(f) Programs Mandated on Local Agencies or School Districts: None

(g) Costs Imposed on Any Local Agency or School District that is Required to be Reimbursed under Part 7 (commencing with Section 17500) of Division 4: None

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(h) Effect on Housing Costs: None

VII. Economic Impact Assessment

The purpose of the proposed amendments is to specifically require compliance with sections 353 and 250.1 when taking big game, and to clarify which cartridges may be used by defining “softnose or expanding projectile.” There are no costs to businesses or persons.

(a) Effects of the regulation on the creation or elimination of jobs within the State:

The regulation will not affect the creation or elimination of jobs because defining projectile types that are authorized for big game hunting is unlikely to change current levels of hunting activity.

(b) Effects of the regulation on the creation of new businesses or the elimination of existing businesses within the State:

The regulation will not create new businesses or eliminate businesses within the State because defining projectile types that are authorized for big game hunting is unlikely to change current levels of hunting activity.

(c) Effects of the regulation on the expansion of businesses currently doing business within the State:

The regulation will not affect the expansion of businesses currently doing business in the State because defining projectile types that are authorized for big game hunting is unlikely to change current levels of hunting activity.

(d) Benefits of the regulation to the health and welfare of California residents:

The Commission anticipates benefits to the health and welfare of California residents and benefits to the State’s environment because the proposed regulation assists the Department in the sustainable management of California’s big game populations.

(e) Benefits of the regulation to worker safety.

The proposed regulation will not affect worker safety.

(f) Benefits of the regulation to the State's environment:

It is the policy of the State to encourage the conservation, maintenance, and utilization of the living resources. The proposed action does not impact the State’s environment.

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INFORMATIVE DIGEST
(Policy Statement Overview)

Amend Section 353, Title 14, California Code of Regulations (CCR), Methods Authorized for Taking Big Game. The purpose of the proposed amendments is to specifically require compliance with sections 353 and 250.1 when taking big game, and to clarify which cartridges may be used by defining "softnose or expanding projectile."

The current regulations in Section 353, Title 14, CCR, provide method of take restrictions for big game using centerfire cartridges in rifles, pistols and revolvers. The projectiles used in these firearms are required to be "softnose or expanding." However, these words are not defined in the regulation. While "softnose or expanding" is commonly accepted from the standpoint of bullet design and trade industry terminology, some have suggested that it could include frangible bullets. The lack of distinction between projectile types is confusing to hunters and difficult to interpret by law enforcement. Furthermore, frangible bullets are not an efficient and effective means to take big game.

The proposed regulation changes are as follows:

1) Add clause to subsection 353(a) specifically making it unlawful to use methods of take or projectiles for big game other than what is authorized in Sections 250.1 and 353;

2) Add a new subsection 353(b)(1) to define "softnose or expanding projectile" based upon design and common accepted terminology of mushrooming, bullet diameter increase and bullet weight retention; and

3) Add a new subsection 353(b)(2) to clarify that "frangible" bullets are not softnose or expanding projectiles.

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Benefits of the regulations

The Commission anticipates benefits to the health and welfare of California residents and benefits to the State's environment because the proposed regulation assists the Department in the sustainable management of California's big game populations.

Non-monetary benefits to the public

The Commission does not anticipate non-monetary benefits to the protection of public health and safety, worker safety, the prevention of discrimination, the promotion of fairness or social equity and the increase in openness and transparency in business and government.

Consistency with State or Federal Regulations

The Commission, pursuant to Fish and Game Code Sections 200, 202 and 203, has the sole authority to regulate the hunting of big game species in California. Commission staff has searched the California Code of Regulations and has found the proposed regulations are consistent with the hunting of big game species, specifically Sections 360, 362, 363, 364, 365 and 368 of Title 14. Therefore the Commission has determined that the proposed amendment is neither inconsistent nor incompatible with existing State regulations.

The proposed amendments are consistent with federal laws, which generally allow states to specify ammunition that is appropriate to be used for hunting purposes.

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REGULATORY TEXT

Section 353 is amended to read:

§353. Methods Authorized for Taking Big Game.

(a) It shall be unlawful to take or attempt to take big game in violation of this section or Section 250.1. The take or attempted take of any big game (as defined by Section 350 of these regulations) with a firearm shall be in accordance with the use of nonlead projectiles and ammunition pursuant to Section 250.1 of these regulations.
(b) Definition. For purposes of this section, a projectile is any bullet, ball, sabot, slug, buckshot or other device that is expelled from a firearm through a barrel by force. The following definitions shall apply:
(1) A softnose or expanding projectile is a bullet designed to increase from its original diameter, commonly referred to as “mushrooming”, and retain a significant part of its original weight upon impact with, or when passing through the tissues of an animal.
(2) Projectiles commonly referred to as “frangible” bullets, designed to disintegrate upon impact with, or when passing through the tissues of an animal are not softnose or expanding projectiles.

... [No changes to subsections (c) through (m)]

Note: Authority cited: Sections 200, 202 and 203, Fish and Game Code. Reference: Sections ~~200, 202, 203, 203.1, 207,~~ 2005, 2055, 3004.5 and 3950, Fish and Game Code.

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STATE OF CALIFORNIA
FISH AND GAME COMMISSION
INITIAL STATEMENT OF REASONS FOR REGULATORY ACTION
(Pre-Publication of Notice Statement)

Amend Subsection 360(a)
Title 14, California Code of Regulations (CCR)
Re: Deer: A, B, C, and D Zone Hunts

I. Date of Initial Statement of Reasons: September 21, 2015

II. Dates and Locations of Scheduled Hearings:

(a)	Notice Hearing:	Date:	December 10, 2015
		Location:	San Diego, CA
(b)	Discussion Hearing:	Date:	February 11, 2016
		Location:	Sacramento, CA
(c)	Adoption Hearing:	Date:	April 14, 2016
		Location:	Santa Rosa, CA

III. Description of Regulatory Action:

(a) Statement of Specific Purpose of Regulation Change and Factual Basis for Determining that Regulation Change is Reasonably Necessary:

1. Number of Tags

Existing regulations provide for the number of deer hunting tags in the A, B, C, and D zones. The proposed action changes the number of tags for all existing zones to a series of ranges as indicated in the Informative Digest.

This proposal initially provides a range of tag numbers for each zone from which a final number will be determined, based on the post-winter status of each deer herd. Ranges are necessary at this time because the final number of tags cannot be determined until spring herd data are collected in March/April.

In early spring, surveys of deer herds are conducted to determine the proportion of fawns that have survived the winter. This information is used in conjunction with the prior year harvest and fall herd composition data to estimate overall herd size, sex and age ratios, and the predicted number of available bucks next season. The number of bucks and does needs to be estimated prior to the hunting season to determine how many surplus bucks will exist over and above the number required to maintain the desired buck ratio objectives stated in the approved deer herd management plans.

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This regulatory proposal changes the number of tags for all Deer Zone Hunts to a series of ranges presented in the table below.

	Deer: § 360(a) A, B, C, and D Zone Hunts Tag Allocations		
§	Zone	Current 2015	Proposed 2016 [Range]
(1)	A	65,000	30,000-65,000
(2)	B	35,000	35,000-65,000
(3)	C	8,150	5,000-15,000
(4)	D3-5	33,000	30,000-40,000
(5)	D-6	10,000	6,000-16,000
(6)	D-7	9,000	4,000-10,000
(7)	D-8	8,000	5,000-10,000
(8)	D-9	2,000	1,000-2,500
(9)	D-10	700	400-800
(10)	D-11	5,500	2,500-6,000
(11)	D-12	950	100-1,500
(12)	D-13	4,000	2,000-5,000
(13)	D-14	3,000	2,000-3,500
(14)	D-15	1,500	500-2,000
(15)	D-16	3,000	1,000-3,500
(16)	D-17	500	100-800
(17)	D-19	1,500	500-2,000

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The actual tag numbers for each affected zone will be reflected in the Final Statement of Reasons and will be selected from the range of values provided by this proposal. The number of tags is intended to allow the appropriate level of hunting opportunity and harvest of bucks in the population, while achieving or maintaining the buck ratios at, or near, objective levels set forth in the approved deer herd management plans. These final values for the license tag numbers will be based upon findings from the annual harvest and herd composition counts. However, under circumstances where various environmental factors including severe winter conditions can adversely affect herd recruitment and over-winter adult survival, final tag quotas may fall below the proposed tag range into the “Low Kill” alternative identified in the most recent Environmental Document Regarding Deer Hunting.

(b) Authority and Reference Sections from Fish and Game Code for Regulation:

Authority: Sections 200, 202, 203, 220, 460, 3051, 3452, 3453, 3953 and 4334, Fish and Game Code.

Reference: Sections 200, 202, 203, 203.1, 207, 458, 459, 460, 3051, 3452, 3453, 3953 and 4334, Fish and Game Code.

(c) Specific Technology or Equipment Required by Regulatory Change:

None

(d) Identification of Reports or Documents Supporting Regulation Change:

2007 Final Environmental Document Regarding Deer Hunting

(e) Public Discussions of Proposed Regulations Prior to Notice Publication:

Fish and Game Commission Wildlife Resources Committee meeting held in Fresno on September 9, 2015.

IV. Description of Reasonable Alternatives to Regulatory Action:

(a) Alternatives to Regulation Change:

The Fish and Game Commission forwarded the following public recommendations to the Department for study and consideration:

Section 360(a). Sam Craig – 8/23/14. Request for changes in B zones for black-tailed deer.

Response: Rejected. Deer hunting seasons and quotas are established based on a combination of herd performance, harvest, terrain, weather patterns, and hunter demand, relative to individual deer herd management plan objectives. There is no data to suggest that restricting hunter opportunity by implementing the changes requested would serve to increase deer populations. The Department rejects this proposal because it is inconsistent with objectives outlined in individual deer herd management plans, would not produce the results identified by the requestor, and would unnecessarily restrict hunter opportunity.

Section 360(a). Lucas Murgia – 10/6/14. Requests temporary ban on deer hunting in zone D-7.

Response: Rejected. Deer hunting seasons are established based on a combination of herd performance, harvest, terrain, weather patterns, and hunter demand, relative to individual deer herd management plan objectives. Hunting in Zone D-7 as proposed is not expected to have a negative effect on

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the deer population. The Department rejects this proposal because it conflicts with objectives outlined in the individual deer herd management plans and Section 1801 of the Fish and Game Code, and would unnecessarily restrict hunter opportunity.

Section 360 (a). Brian Russell – 12/18/14. Request to include harvesting of 3-point or better bucks in zone C4.

Response: Rejected. The Department rejects the recommendation to return to the three point or better restriction because it is inconsistent with sound management practices. The bag and possession limit for zones X-1 through X-5C was modified from bucks three point or better to forked horn or better beginning with the 1990 season in order to reduce waste due to illegal killing of forked-horn bucks and to reduce harvest pressure on older age class bucks. The result of the change was that fewer forked horn bucks were killed by mistake and left in the field during the season and more large antlered bucks remained in the herd post season. The recommendation would cause an unnecessary waste of illegally killed forked horned bucks and require the Department to reduce the tag quotas to compensate for increased kill.

Section 360 (b),(c). Lassen County Board of Supervisors - Supervisors request an overall tag allocation of 10% archery, 10% muzzleloader, and 80% rifle for hunt zones 3, 4, 5, 6, 7, X1, X3A, X3B, X4, X7A and C4 to increase hunting opportunities (Resolution 14-016).

Response: Rejected. Tag quotas recommended by the Department are established in conformance with management objectives contained within individual deer herd management plans. The distribution of tag quotas between various methods of take is based on a combination of herd performance and allowable buck harvest (ABH); method specific harvest success; and method specific demand. Therefore, because the Department uses a data-driven objective process to determine deer tag quotas, this proposal is rejected.

(b) No Change Alternative:

The “No Change Alternative” was considered and found inadequate to attain the project objectives. Retaining the current number of tags for the zones listed may not be responsive to changes in the status of the herds. The deer herd management plans specify objective levels for the proportion of bucks in the herds. These ratios are maintained and managed in part by modifying the number of tags. The “No Change Alternative” would not allow management of the desired proportion of bucks stated in the approved deer herd management plans.

(c) Consideration of Alternatives:

In view of information currently possessed, no reasonable alternative considered would be more effective in carrying out the purpose for which the

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regulation is proposed, would be as effective and less burdensome to affected private persons than the proposed regulation, or would be more cost effective to affected private persons and equally effective in implementing the statutory policy or other provision of law.

(d) Description of Reasonable Alternatives That Would Lessen Adverse Impact on Small Business: None.

V. Mitigation Measures Required by Regulatory Action:

The proposed regulatory action will have no negative impact on the environment; therefore, no mitigation measures are needed. The maximum number of tags available in the newly proposed range is at or below the number of tags analyzed in the most recent Final Environmental Document Regarding Deer Hunting and related documents.

VI. Impact of Regulatory Action:

The potential for significant statewide adverse economic impacts that might result from the proposed regulatory action has been assessed, and the following initial determinations relative to the required statutory categories have been made:

(a) Significant Statewide Adverse Economic Impact Directly Affecting Businesses, Including the Ability of California Businesses to Compete with Businesses in Other States.

The proposed action will not have a significant statewide adverse economic impact directly affecting business, including the ability of California businesses to compete with businesses in other states. The proposed action adjusts tag quotas for existing deer hunts. Given the number of tags available and the area over which they are distributed, these proposals are economically neutral to business.

(b) Impact on the Creation or Elimination of Jobs Within the State, the Creation of New Businesses or the Elimination of Existing Businesses, or the Expansion of Businesses in California; Benefits of the Regulation to the Health and Welfare of California Residents, Worker Safety, and the State's Environment:

The Commission anticipates benefits to the health and welfare of California residents and to the state's environment. Hunting provides opportunities for multi-generational family activities and promotes respect for California's environment by the future stewards of the State's resources and the action contributes to the sustainable management of natural resources.

The proposed action will not have significant impacts on jobs or business within California and does not provide benefits to worker safety.

(c) Cost Impacts on Private Persons.

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The Commission is not aware of any cost impacts that a representative private person or business would necessarily incur in reasonable compliance with this proposed action.

(d) Costs or Savings to State Agencies or Costs/Savings in Federal Funding to the State: None

(e) Other Nondiscretionary Costs/Savings to Local Agencies: None

(f) Programs Mandated on Local Agencies or School Districts: None

(g) Costs Imposed on Any Local Agency or School District that is Required to be Reimbursed under Part 7 (commencing with Section 17500) of Division 4: None

(h) Effect on Housing Costs: None

VII. Economic Impact Assessment:

The proposed action will have no statewide economic or fiscal impact because the proposed action would not constitute a significant change from the last deer season in the A, B, C, and D zones. The number of tags to be set in regulation for 2016 is intended to achieve or maintain the levels set forth in the approved deer herd management plans to preserve herd health and hunting opportunities in subsequent seasons.

(a) Effects of the regulation on the creation or elimination of jobs within the State:

The regulation will not affect the creation or elimination of jobs.

(b) Effects of the regulation on the creation of new businesses or the elimination of existing businesses within the State:

The regulation is unlikely to result in the creation of new businesses or the elimination of existing businesses because no major changes in the number of tags issued are anticipated.

(c) Effects of the regulation on the expansion of businesses currently doing business within the State

The regulation is unlikely to cause the expansion of businesses currently doing business within the State because no major changes in the number of tags issued are anticipated.

(d) Benefits of the regulation to the health and welfare of California residents:

The proposed regulation will have a positive effect on the health and welfare of California residents. Recreational hunting is a healthy outdoor activity and venison is a nutritious food.

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(e) Benefits of the regulation to worker safety.

The proposed regulation will not affect worker safety because it does not address working conditions.

(f) Benefits of the regulation to the State's environment

It is the policy of the State to encourage the conservation, maintenance, and utilization of the living resources. The proposed action will forward this core objective.

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INFORMATIVE DIGEST
(Policy Statement Overview)

Existing regulations provide for the number of license tags available for deer in the A, B, C, and D Zones. This regulatory proposal changes the number of tags for all existing zones to a series of ranges presented in the table below. These ranges are necessary because the final number of tags cannot be determined until spring herd data are collected in March/April. Because various environmental factors including severe winter conditions can adversely affect herd recruitment and over-winter adult survival, the final recommended quotas may fall below the current proposed range into the "Low Kill" alternative identified in the most recent Environmental Document Regarding Deer Hunting.

	Deer: § 360(a) A, B, C, and D Zone Hunts Tag Allocations		
§	Zone	Current 2015	Proposed 2016 [Range]
(1)	A	65,000	30,000-65,000
(2)	B	35,000	35,000-65,000
(3)	C	8,150	5,000-15,000
(4)	D3-5	33,000	30,000-40,000
(5)	D-6	10,000	6,000-16,000
(6)	D-7	9,000	4,000-10,000
(7)	D-8	8,000	5,000-10,000
(8)	D-9	2,000	1,000-2,500
(9)	D-10	700	400-800
(10)	D-11	5,500	2,500-6,000
(11)	D-12	950	100-1,500
(12)	D-13	4,000	2,000-5,000
(13)	D-14	3,000	2,000-3,500
(14)	D-15	1,500	500-2,000
(15)	D-16	3,000	1,000-3,500
(16)	D-17	500	100-800
(17)	D-19	1,500	500-2,000

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Benefits of the regulations

The deer herd management plans specify objective levels for the proportion of bucks in the herds. These ratios are maintained and managed in part by annually modifying the number of hunting tags. The final values for the license tag numbers will be based upon findings from the annual harvest and herd composition counts.

Non-monetary benefits to the public

The Commission does not anticipate non-monetary benefits to the protection of public health and safety, worker safety, the prevention of discrimination, the promotion of fairness or social equity and the increase in openness and transparency in business and government.

Consistency with State or Federal Regulations

The Fish and Game Commission, pursuant to Fish and Game Code Sections 200, 202 and 203, has the sole authority to regulate deer hunting in California. Commission staff has searched the California Code of Regulations and has found the proposed changes pertaining to deer tag allocations are consistent with Sections 361, 701, 702, 708.5 and 708.6 of Title 14. Therefore the Commission has determined that the proposed amendments are neither inconsistent nor incompatible with existing State regulations.

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REGULATORY TEXT

Subsection (a) of Section 360 is amended to read:

§360. Deer.
Except as otherwise provided in this Title 14, deer may be taken only as follows:
(a) A, B, C, and D Zone Hunts.
(1) Zone A.

... [No changes to subsections (A) through (C)]

(D) Number of Tags: ~~30,000~~ [30,000-65,000]. Zone A tags are valid in Zone A-South Unit 110 and Zone A-North Unit 160.

(2) Zone B.

... [No changes to subsections (A) through (C)]

(D) Number of Tags: ~~35,000~~ [35,000-65,000]. Zone B tags are valid in Zones B-1, B-2, B-3, B-4, B-5 and B-6

(3) Zone C.

... [No changes to subsections (A) through (C)]

(D) Number of Tags: ~~8,150~~ [5,000-15,000]. Zone C tags are valid in Zones C-1, C-2, C-3, and C-4 during the general season only as described above in subsections 360(a)(3)(B)1. through 4.

(4) Zone D-3-5.

... [No changes to subsections (A) through (C)]

(D) Number of Tags: ~~33,000~~ [30,000-40,000]. The Zone D-3-5 tag is valid in zones D-3, D-4, and D-5.

(5) Zone D-6.

... [No changes to subsections (A) through (C)]

(D) Number of Tags: ~~10,000~~ [6,000-16,000].

(6) Zone D-7.

... [No changes to subsections (A) through (C)]

(D) Number of Tags: ~~9,000~~ [4,000-10,000].

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(7) Zone D-8.

... [No changes to subsections (A) through (C)]

(D) Number of Tags: ~~8,000~~ [5,000-10,000].

(8) Zone D-9.

... [No changes to subsections (A) through (C)]

(D) Number of Tags: ~~2,000~~ [1,000-2,500].

(9) Zone D-10.

... [No changes to subsections (A) through (C)]

(D) Number of Tags: ~~700~~ [400-800].

(10) Zone D-11.

... [No changes to subsections (A) through (C)]

(D) Number of Tags: ~~5,500~~ [2,500-6,000].

... [No change to subsection (E)]

(11) Zone D-12.

... [No changes to subsections (A) through (C)]
(D) Number of Tags: ~~950~~ [100-1,500].

(12) Zone D-13.

... [No changes to subsections (A) through (C)]

(D) Number of Tags: ~~4,000~~ [2,000-5,000].

... [No change to subsection (E)]

(13) Zone D-14.

... [No changes to subsections (A) through (C)]

(D) Number of Tags: ~~3,000~~ [2,000-3,500].

(14) Zone D-15.

... [No changes to subsections (A) through (C)]

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(D) Number of Tags: ~~1,500~~ [500-2,000].

... [No change to subsection (E)]

(15) Zone D-16.

... [No changes to subsections (A) through (C)]

(D) Number of Tags: ~~3,000~~ [1,000-3,500].

(16) Zone D-17.

... [No changes to subsections (A) through (C)]

(D) Number of Tags: ~~500~~100-800. [100-800].

(17) Zone D-19.

... [No changes to subsections (A) through (C)]

(D) Number of Tags: ~~1,500~~ [500-2,000].

[subsections (b), (c), (d), (e)]

Note: Authority: Sections 200, 202, 203, 220, 460, 3051, 3452, 3453, 3953 and 4334, Fish and Game Code. Reference: Sections 200, 202, 203, 203.1, 207, 458, 459, 460, 3051, 3452, 3453, 3953 and 4334, Fish and Game Code.

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STATE OF CALIFORNIA
FISH AND GAME COMMISSION
INITIAL STATEMENT OF REASONS FOR REGULATORY ACTION
(Pre-Publication of Notice Statement)

Amend Subsection 360(b),
Title 14, California Code of Regulations (CCR)
Re: Deer: X-Zone Hunts

I. Date of Initial Statement of Reasons: October 12, 2015

II. Dates and Locations of Scheduled Hearings:

(a) Notice Hearing: Date: December 10, 2015
Location: San Diego, CA

(b) Discussion Hearing: Date: February 11, 2016
Location: Sacramento, CA

(c) Adoption Hearing: Date: April 14, 2016
Location: Santa Rosa, CA

III. Description of Regulatory Action:

(a) Statement of Specific Purpose of Regulation Change and Factual Basis for Determining that Regulation Change is Reasonably Necessary:

1. Number of Tags

Existing regulations provide for the number of deer hunting tags for the X zones. This proposed action initially provides a range of tag numbers for each zone from which a final number will be determined based on the post-winter status of each deer herd. Ranges are necessary at this time because the final number of tags cannot be determined until spring herd data are collected in March/April.

In early spring, surveys of deer herds are conducted to determine the proportion of fawns that have survived the winter. This information is used in conjunction with the prior year harvest and fall herd composition data to estimate overall herd size, sex and age ratios, and the predicted number of available bucks next season. The number of bucks and does needs to be estimated prior to the hunting season to determine how many surplus bucks will exist over and above the number required to maintain the desired buck ratio objectives stated in the approved deer herd management plans.

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The following table provides a proposed range of tag numbers for each zone from which a final number of tags will be determined:

	Deer: § 360(b) X-Zone Hunts Tag Allocations		
§	Zone	Current 2015	Proposed 2016 [Range]
(1)	X-1	775	1,000-6,000
(2)	X-2	160	50-500
(3)	X-3a	315	100-1,200
(4)	X-3b	795	200-3,000
(5)	X-4	435	100-1,200
(6)	X-5a	75	25-200
(7)	X-5b	50	50-500
(8)	X-6a	320	100-1,200
(9)	X-6b	305	100-1,200
(10)	X-7a	225	50-500
(11)	X-7b	135	25-200
(12)	X-8	210	100-750
(13)	X-9a	650	100-1,200
(14)	X-9b	325	100-600
(15)	X-9c	325	100-600
(16)	X-10	400	100-600
(17)	X-12	680	100-1,200

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The actual tag numbers for each affected zone will be reflected in the Final Statement of Reasons and will be selected from the range of values provided by this proposal. The number of tags is intended to allow the appropriate level of hunting opportunity and harvest of bucks in the population, while achieving or maintaining the buck ratios at, or near, objective levels set forth in the approved deer herd management plans. These final values for the license tag numbers will be based upon findings from the annual harvest and herd composition counts. However, under circumstances where various environmental factors such as severe winter conditions can adversely affect herd recruitment and over-winter adult survival, final tag quotas may fall

below the proposed tag range into the “Low Kill” alternative identified in the most recent Environmental Document Regarding Deer Hunting.

(b) Authority and Reference Sections from Fish and Game Code for Regulation:

Authority: Sections 200, 202, 203, 220, 460, 3051, 3452, 3453, 3953 and 4334, Fish and Game Code.

Reference: Sections 200, 202, 203, 203.1, 207, 458, 459, 460, 3051, 3452, 3453, 3953 and 4334, Fish and Game Code.

(c) Specific Technology or Equipment Required by Regulatory Change:

None

(d) Identification of Reports or Documents Supporting Regulation Change:

2007 Final Environmental Document Regarding Deer Hunting

(e) Public Discussions of Proposed Regulations Prior to Notice Publication:

Fish and Game Commission Wildlife Resources Committee meeting held in Fresno on September 9, 2015.

IV. Description of Reasonable Alternatives to Regulatory Action:

(a) Alternatives to Regulation Change:

There is no reasonable alternative to the proposed action.

(b) No Change Alternative:

The “No Change Alternative” was considered and found inadequate to attain the project objectives. Retaining the current number of tags for the zones listed may not be responsive to changes in the status of the herds. The deer herd management plans specify objective levels for the proportion of bucks in the herds. These ratios are maintained and managed in part by modifying the number of hunting tags. The “No Change Alternative” would not allow management of the desired proportion of bucks stated in the approved deer herd management plans.

(c) Consideration of Alternatives:

In view of information currently possessed, no reasonable alternative considered would be more effective in carrying out the purpose for which the regulation is proposed, would be as effective and less burdensome to affected private persons than the proposed regulation, or would be more cost effective to affected private persons and equally effective in implementing the

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statutory policy or other provision of law.

(d) Description of Reasonable Alternatives That Would Lessen Adverse Impact on Small Business: None.

V. Mitigation Measures Required by Regulatory Action:

The proposed regulatory action will have no negative impact on the environment; therefore, no mitigation measures are needed. The maximum number of tags available in the newly proposed range is at or below the number of tags analyzed in the most recent Final Environmental Document regarding Deer Hunting and related documents.

VI. Impact of Regulatory Action:

The potential for significant statewide adverse economic impacts that might result from the proposed regulatory action has been assessed, and the following initial determinations relative to the required statutory categories have been made.

(a) Significant Statewide Adverse Economic Impact Directly Affecting Businesses, Including the Ability of California Businesses to Compete with Businesses in Other States:

The proposed action will not have a significant statewide adverse economic impact directly affecting business, including the ability of California businesses to compete with businesses in other states. The proposed action adjusts tag quotas for existing deer hunts. Given the number of tags available and the area over which they are distributed, these proposals are economically neutral to business.

(b) Impact on the Creation or Elimination of Jobs Within the State, the Creation of New Businesses or the Elimination of Existing Businesses, or the Expansion of Businesses in California; Benefits of the Regulation to the Health and Welfare of California Residents, Worker Safety, and the State's Environment:

The Commission anticipates benefits to the health and welfare of California residents and to the state's environment. Hunting provides opportunities for multi-generational family activities and promotes respect for California's environment by the future stewards of the State's resources and the action contributes to the sustainable management of natural resources.

The proposed action will not have significant impacts on jobs or business within California because it will not result in significant changes in hunting effort in the affected zones, The proposed action does not provide benefits to worker safety because it does not address working conditions..

(c) Cost Impacts on Private Persons:

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The Commission is not aware of any cost impacts that a representative private person or business would necessarily incur in reasonable compliance with this proposed action.

(d) Costs or Savings to State Agencies or Costs/Savings in Federal Funding to the State: None

(e) Other Nondiscretionary Costs/Savings to Local Agencies: None

(f) Programs Mandated on Local Agencies or School Districts: None

(g) Costs Imposed on Any Local Agency or School District that is Required to be Reimbursed under Part 7 (commencing with Section 17500) of Division 4: None

(h) Effect on Housing Costs: None

VII. Economic Impact Assessment:

The proposed action will have no statewide economic or fiscal impact because the proposed action would not constitute a significant change from the 2015 deer season in the X zones. The number of tags to be set in regulation for 2016 is intended to achieve or maintain the levels set forth in the approved deer herd management plans to preserve herd health and hunting opportunities in subsequent seasons.

(a) Effects of the regulation on the creation or elimination of jobs within the State:

The regulation will not affect the creation or elimination of jobs because no significant changes in hunting activity levels are anticipated.

(b) Effects of the regulation on the creation of new businesses or the elimination of existing businesses within the State:

The regulation will not impact the creation of new businesses or the elimination of businesses because no significant changes is hunting activity levels are anticipated.

(c) Effects of the regulation on the expansion of businesses currently doing business within the State

The regulation will not affect the expansion of businesses currently doing business within the State because no significant changes in hunting activity levels are anticipated.

(d) Benefits of the regulation to the health and welfare of California residents:

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The proposed regulation will benefit the health and welfare of California residents by maintaining healthy deer herds and providing opportunities for the public to participate in a healthy outdoor activity.

(e) Benefits of the regulation to worker safety.

The proposed regulation will not affect worker safety.

(f) Benefits of the regulation to the State's environment

It is the policy of the State to encourage the conservation, maintenance, and utilization of the State’s living resources. The proposed action will further this core objective.

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INFORMATIVE DIGEST
(Policy Statement Overview)

Existing regulations provide for the number of deer hunting tags for the X zones. The proposed action changes the number of tags for all existing zones to a series of ranges presented in the table below. These ranges are necessary at this time because the final number of tags cannot be determined until spring herd data are collected in March/April. Because various environmental factors such as severe winter conditions can adversely affect herd recruitment and over-winter adult survival, the final recommended quotas may fall below the current proposed range into the "Low Kill" alternative identified in the most recent Environmental Document Regarding Deer Hunting.

	Deer: § 360(b) X-Zone Hunts Tag Allocations		
§	Zone	Current 2015	Proposed 2016 [Range]
(1)	X-1	775	1,000-6,000
(2)	X-2	160	50-500
(3)	X-3a	315	100-1,200
(4)	X-3b	795	200-3,000
(5)	X-4	435	100-1,200
(6)	X-5a	75	25-200
(7)	X-5b	50	50-500
(8)	X-6a	320	100-1,200
(9)	X-6b	305	100-1,200
(10)	X-7a	225	50-500
(11)	X-7b	135	25-200
(12)	X-8	210	100-750
(13)	X-9a	650	100-1,200
(14)	X-9b	325	100-600
(15)	X-9c	325	100-600
(16)	X-10	400	100-600
(17)	X-12	680	100-1,200

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Benefits of the regulations

The deer herd management plans specify objective levels for the proportion of bucks in the herds. These ratios are maintained and managed in part by annually modifying the

number of hunting tags. The final values for the license tag numbers will be based upon findings from the annual harvest and herd composition counts.

Non-monetary benefits to the public

The Commission does not anticipate non-monetary benefits to the protection of public health and safety, worker safety, the prevention of discrimination, the promotion of fairness or social equity and the increase in openness and transparency in business and government.

Consistency with State or Federal Regulations

The Fish and Game Commission, pursuant to Fish and Game Code Sections 200, 202 and 203, has the sole authority to regulate deer hunting in California. Commission staff has searched the California Code of Regulations and has found the proposed changes pertaining to deer tag allocations are consistent with Sections 361, 701, 702, 708.5 and 708.6 of Title 14. Therefore the Commission has determined that the proposed amendments are neither inconsistent nor incompatible with existing State regulations.

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REGULATORY TEXT

Subsection (b) of Section 360 is amended to read:

§360. Deer.
[subsection (a)]...

(b) X-Zone Hunts.
(1) Zone X-1.

[No changes to subsections (A) through (C)]

(D) Number of Tags: ~~775~~ [1,000-6,000].

(2) Zone X-2.

[No changes to subsections (A) through (C)]

(D) Number of Tags: ~~160~~ [50-500].

(3) Zone X-3a.

[No changes to subsections (A) through (C)]

(D) Number of Tags: ~~315~~ [100-1,200].

(4) Zone X-3b.

[No changes to subsections (A) through (C)]

(D) Number of Tags: ~~795~~ [200-3,000].

(5) Zone X-4.

[No changes to subsections (A) through (C)]

(D) Number of Tags: ~~435~~ [100-1,200].

(6) Zone X-5a.

[No changes to subsections (A) through (C)]

(D) Number of Tags: ~~75~~ [25-200].

(7) Zone X-5b.

[No changes to subsections (A) through (C)]

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(D) Number of Tags: ~~50~~ [50-500].

(8) Zone X-6a.

[No changes to subsections (A) through (C)]

(D) Number of Tags: ~~320~~ [100-1,200].

(9) Zone X-6b.

[No changes to subsections (A) through (C)]

(D) Number of Tags: ~~305~~ [100-1,200].

(10) Zone X-7a.

[No changes to subsections (A) through (C)]

(D) Number of Tags: ~~225~~ [50-500].

(11) Zone X-7b.

[No changes to subsections (A) through (C)]

(D) Number of Tags: ~~135~~ [25-200].

(12) Zone X-8.

[No changes to subsections (A) through (C)]

(D) Number of Tags: ~~210~~. [100-750].

(13) Zone X-9a.

[No changes to subsections (A) through (C)]

(D) Number of Tags: ~~650~~ [100-1,200].

(14) Zone X-9b.

[No changes to subsections (A) through (C)]

(D) Number of Tags: ~~325~~ [100-600].

(15) Zone X-9c.

[No changes to subsections (A) through (C)]

(D) Number of Tags: ~~325~~ [100-600].

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(16) Zone X-10.

[No changes to subsections (A) through (C)]

(D) Number of Tags: ~~400~~ [100-600].

(17) Zone X-12.

[No changes to subsections (A) through (C)]

(D) Number of Tags: ~~680~~ [100-1,200].

...[subsections (c), (d), (e)]

Note: Authority: Sections 200, 202, 203, 220, 460, 3051, 3452, 3453, 3953 and 4334, Fish and Game Code. Reference: Sections 200, 202, 203, 203.1, 207, 458, 459, 460, 3051, 3452, 3453, 3953 and 4334, Fish and Game Code.

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STATE OF CALIFORNIA
FISH AND GAME COMMISSION
INITIAL STATEMENT OF REASONS FOR REGULATORY ACTION
(Pre-Publication of Notice Statement)

Amend Subsection 360(c)
Title 14, California Code of Regulations (CCR)
Re: Deer: Additional Hunts

I. Date of Initial Statement of Reasons: September 21, 2015

II. Dates and Locations of Scheduled Hearings:

(a)	Notice Hearing:	Date:	December 10, 2015
		Location:	San Diego, CA
(b)	Discussion Hearing:	Date:	February 11, 2016
		Location:	Sacramento, CA
(c)	Adoption Hearing:	Date:	April 14, 2016
		Location:	Santa Rosa, CA

III. Description of Regulatory Action:

(a) Statement of Specific Purpose of Regulation Change and Factual Basis for Determining that Regulation Change is Reasonably Necessary:

1. Number of Tags

Existing regulations provide for the number of deer hunting tags in the Additional Hunts. The proposed action provides a range of tag numbers for each hunt from which a final number will be determined, based on the post-winter status of each deer herd. Ranges are necessary at this time because the final number of tags cannot be determined until spring herd data are collected in March/April.

In early spring, surveys of deer herds are conducted to determine the proportion of fawns that have survived the winter. This information is used in conjunction with the prior year harvest and fall herd composition data to estimate overall herd size, sex and age ratios, and the predicted number of available bucks next season. The number of bucks and does needs to be estimated prior to the hunting season to determine how many surplus bucks will exist over and above the number required to maintain the desired buck ratio objectives stated in the approved deer herd management plans.

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The proposed action changes the number of tags for all existing hunts to a series of ranges as indicated in the following table:

	Deer: § 360(c) Additional Hunts Tag Allocations		
§	**Hunt Number (and Title)**	**Current 2015**	**Proposed 2016 [Range]**
(1)	G-1 (Late Season Buck Hunt for Zone C-4)	2,710	500-5,000
(2)	G-3 (Goodale Buck Hunt)	35	5-50
(3)	G-6 (Kern River Deer Herd Buck Hunt)	50	25-100
(4)	G-7 (Beale Either-Sex Deer Hunt)	20 Military*	20 Military*
(5)	G-8 (Fort Hunter Liggett Antlerless Deer Hunt)	20 Tags Total* (10 Military & 10 Public)	20 Tags Total* (10 Military and 10 Public)
(6)	G-9 (Camp Roberts Antlerless Deer Hunt)	0	30 Tags Total* (15 Military and 15 Public)
(7)	G-10 (Camp Pendleton Either-Sex Deer Hunt)	250 Military*	250 Military*
(8)	G-11 (Vandenberg Either-Sex Deer Hunt)	200 Military*, DOD and as Authorized by the Installation Commander**	200 Military*, DOD and as Authorized by the Installation Commander**
(9)	G-12 (Gray Lodge Shotgun Either-Sex Deer Hunt)	30	10-50
(10)	G-13 (San Diego Antlerless Deer Hunt)	300	50-300
(11)	G-19 (Sutter-Yuba Wildlife Areas Either-Sex Deer Hunt)	25	10-50
(12)	G-21 (Ventana Wilderness Buck Hunt)	25	25-100
(13)	G-37 (Anderson Flat Buck Hunt)	25	25-50
(14)	G-38 (X-10 Late Season Buck Hunt)	300	50-300
(15)	G-39 (Round Valley Late Season Buck Hunt)	5	5-150

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	Deer: § 360(c) Additional Hunts Tag Allocations		
§	**Hunt Number (and Title)**	**Current 2015**	**Proposed 2016 [Range]**
(16)	M-3 (Doyle Muzzleloading Rifle Buck Hunt)	20	10-75
(17)	M-4 (Horse Lake Muzzleloading Rifle Buck Hunt)	5	5-50
(18)	M-5 (East Lassen Muzzleloading Rifle Buck Hunt)	5	5-50
(19)	M-6 (San Diego Muzzleloading Rifle Either-Sex Deer Hunt)	80	25-100
(20)	M-7 (Ventura Muzzleloading Rifle Either-Sex Deer Hunt)	150	50-150
(21)	M-8 (Bass Hill Muzzleloading Rifle Buck Hunt)	20	5-50
(22)	M-9 (Devil's Garden Muzzleloading Rifle Buck Hunt)	15	5-100
(23)	M-11 (Northwestern California Muzzleloading Rifle Buck Hunt)	20	20-200
(24)	MA-1 (San Luis Obispo Muzzleloading Rifle/Archery Either-Sex Deer Hunt)	150	20-150
(25)	MA-3 (Santa Barbara Muzzleloading Rifle/Archery Buck Hunt)	150	20-150
(26)	J-1 Lake Sonoma Apprentice Either-Sex Deer Hunt)	25	10-25
(27)	J-3 (Tehama Wildlife Area Apprentice Buck Hunt)	15	15-30
(28)	J-4 Shasta-Trinity Apprentice Buck Hunt)	15	15-50
(29)	J-7 (Carson River Apprentice Either-Sex Deer Hunt)	15	10-50
(30)	J-8 (Daugherty Hill Wildlife Area Apprentice Either-Sex Deer Hunt)	15	10-20
(31)	J-9 (Little Dry Creek Apprentice Shotgun Either-Sex Deer Hunt)	5	5-10
(32)	J-10 (Fort Hunter Liggett Apprentice Either-Sex Deer Hunt)	75 Tags Total* (15 Military & 60 Public)	85 Tags Total* (25 Military & 60 Public)

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	Deer: § 360(c) Additional Hunts Tag Allocations		
§	**Hunt Number (and Title)**	**Current 2015**	**Proposed 2016 [Range]**
(33)	J-11 (San Bernardino Apprentice Either-Sex Deer Hunt)	40	10-50
(34)	J-12 (Round Valley Apprentice Buck Hunt)	10	10-20
(35)	J-13 (Los Angeles Apprentice Either-Sex Deer Hunt)	40	25-100
(36)	J-14 (Riverside Apprentice Either-Sex Deer Hunt)	30	15-75
(37)	J-15 (Anderson Flat Apprentice Buck Hunt)	10	5-30
(38)	J-16 (Bucks Mountain-Nevada City Apprentice Either-Sex Deer Hunt)	75	10-75
(39)	J-17 (Blue Canyon Apprentice Either-Sex Deer Hunt)	25	5-25
(40)	J-18 (Pacific-Grizzly Flat Apprentice Either-Sex Deer Hunt)	75	10-75
(41)	J-19 (Zone X-7a Apprentice Either-Sex Deer Hunt)	25	10-40
(42)	J-20 (Zone X-7b Apprentice Either-Sex Deer Hunt)	20	5-20
(43)	J-21 (East Tehama Apprentice Either-Sex Deer Hunt)	50	20-80

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* *Specific numbers of tags are provided for military hunts through a system which restricts hunter access to desired levels and ensures biologically conservative hunting programs.*

** *DOD = Department of Defense and eligible personnel as authorized by the Installation Commander.*

The actual tag numbers for each affected hunt will be reflected in the Final Statement of Reasons and will be selected from the range of values provided by this proposal. The number of tags is intended to allow the appropriate level of hunting opportunity and harvest of bucks in the population, while achieving or maintaining the buck ratios at, or near, objective levels set forth in the approved deer herd management plans. These final values for the license tag numbers will be based upon findings from the annual harvest and herd composition counts. However, under circumstances where various

environmental factors including severe winter conditions can adversely affect herd recruitment and over-winter adult survival, final tag quotas may fall below the proposed tag range into the “Low Kill” alternative identified in the most recent Environmental Document Regarding Deer Hunting.

Note: The current tag quota of zero (0) for additional deer hunt G-9 (Camp Roberts Antlerless Deer Hunt) reflects the Base’s closure to hunting while construction was under way on the base. Construction was scheduled for completion in 2013; however the timetable for resumption of base hunting programs has not been determined. The Department is currently in meetings with base command, and a decision regarding tag quotas is anticipated by the early March Fish and Game Commission meeting date. At this time, the current tag quota of zero (0) has been modified to the former tag quota of thirty (30) in anticipation of the possible resumption of deer hunting activities by the Base in the 2016/2017 season. However, if Base operations take precedence over conducting the G-9 hunt, the tag quota will be reduced to zero (0) and reflected in the Final Statement.

In addition, Fort Hunter Liggett base command has requested a minor tag quota increase of 10 total tags back to their original tag quota for Hunt J-10 (From 75 to 85 total tags) identified in the authorizing Environmental Document. This request has been accepted by the Department and is reflected in the proposed regulatory change.

2. Modify Season for Additional Hunt G-8

Existing regulations in subsection 360(c)(5) for Additional Hunt G-8 (Fort Hunter Liggett Antlerless Deer Hunt) provide for hunting to begin on October 3 and October 10, and continue for 2 and 3 days respectively, inclusive of the Columbus Day holiday, in order to accommodate Base operations and other hunt opportunities.

The current proposal would modify the season to account for the annual calendar shift by changing the season dates to open on October 8 and continue for three (3) consecutive days, including the Columbus Day holiday, and reopen on October 15 and continue for two (2) consecutive days. Additionally, the Base requested the season for Hunt G-8 be shifted one week later in order to accommodate base operations and eliminate season overlap with elk hunts and conflict with deer hunts during the first week of October. These activities had effectively reduced the size of the hunt area for G-8 deer hunters. No loss of hunter opportunity would result from this action and the proposal is consistent with existing deer herd management plan recommendations.

3. Modify Season for Additional Hunt J-10

Existing regulations in subsection 360(c)(32) for Additional Hunt J-10 (Fort Hunter Liggett Junior Either-Sex Deer Hunt) provide for hunting to begin on October 3 and October 10, and continue for 2 and 3 days respectively,

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inclusive of the Columbus Day holiday, in order to accommodate for Base operations and other hunt opportunities.

The current proposal would modify the season to account for the annual calendar shift by changing the season dates to open on October 8 and continue for three (3) consecutive days, including the Columbus Day holiday, and reopen on October 15 and continue for two (2) consecutive days. Additionally, the Base requested the season for Hunt J-10 be shifted one week later in order to accommodate for base operations and eliminate season overlap with elk hunts and conflict with deer hunts during the first week of October. These activities had effectively reduced the size of the hunt area for J-10 deer hunters. No loss of hunter opportunity would result from this action and the proposal is consistent with existing deer herd management plan recommendations.

4. Minor Editorial Changes

Minor editorial changes are necessary for consistency in subsection numbering, spelling, grammar, and clarification.

Recent changes to Section 550 require that such references be changed to Section 551.

(b) Authority and Reference Sections from Fish and Game Code for Regulation:

Authority: Sections 200, 202, 203, 220, 460, 3051, 3452, 3453, 3953 and 4334, Fish and Game Code.

Reference: Sections 200, 202, 203, 203.1, 207, 458, 459, 460, 3051, 3452, 3453, 3953 and 4334, Fish and Game Code.

(c) Specific Technology or Equipment Required by Regulatory Change: None

(d) Identification of Reports or Documents Supporting Regulation Change:

2007 Final Environmental Document Regarding Deer Hunting.

(e) Public Discussions of Proposed Regulations Prior to Notice Publication:

Fish and Game Commission Wildlife Resources Committee meeting held in Fresno on September 9, 2015.

IV. Description of Reasonable Alternatives to Regulatory Action:

(a) Alternatives to Regulation Change:

1. Number of Tags

There is no reasonable alternative to the proposed action.

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2. Modify Season for Additional Hunt G-8

   Modify season to include all weekdays. This proposal was considered and rejected because it would not accommodate for military operations which primarily occur on weekdays, resulting in daily hunt cancellations, hunter dissatisfaction and the unnecessary restricting of hunter opportunity.

3. Modify Season and Special Conditions for Additional Hunt J-10

   Modify season to include all weekdays. This proposal was considered and rejected because it would not accommodate for military operations which primarily occur on weekdays, resulting in daily hunt cancellations, hunter dissatisfaction and the unnecessary restriction of hunter opportunity.

4. Minor Editorial Changes

   There is no reasonable alternative to the proposed action.

(b) No Change Alternative:

1. Number of Tags

   The “No Change Alternative” was considered and found inadequate to attain the project objectives. Retaining the current number of tags for the hunts listed may not be responsive to changes in the status of the herds. The deer herd management plans specify objective levels for the proportion of bucks in the herds. These ratios are maintained and managed in part by modifying the number of tags. The “No Change Alternative” would not allow management of the desired proportion of bucks stated in the approved deer herd management plans.

2. Modify Season for Additional Hunt G-8

   The “No Change Alternative” was considered and found inadequate to attain the project objectives. Retaining the current season length and timing would be unresponsive to Base operations, scheduled activities and unnecessarily restrict hunter opportunity.

3. Modify Season for Additional Hunt J-10

   The “No Change Alternative” was considered and found inadequate to attain the project objectives. Retaining the current season length and timing would be unresponsive to Base operations, scheduled activities and/or unnecessarily restrict hunter opportunity.

4. Minor Editorial Changes

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The “No Change Alternative” was considered and found inadequate to attain the project objectives, because inconsistencies in section and subsection references, numbering, spelling, grammar and lack of clarification would exist within the regulations, potentially leading to confusion and possible violations.

(c) Consideration of Alternatives:

In view of information currently possessed, no reasonable alternative considered would be more effective in carrying out the purpose for which the regulation is proposed, would be as effective and less burdensome to affected private persons than the proposed regulation, or would be more cost effective to affected private persons and equally effective in implementing the statutory policy or other provision of law.

V. Mitigation Measures Required by Regulatory Action:

The proposed regulatory action will have no negative impact on the environment; therefore, no mitigation measures are needed. The maximum number of tags available in the newly proposed range is at or below the number of tags analyzed in the most recent Final Environmental Document regarding Deer Hunting and related documents.

VI. Impact of Regulatory Action:

The potential for significant statewide adverse economic impacts that might result from the proposed regulatory action has been assessed, and following initial determinations relative to the required statutory categories have been made.

(a) Significant Statewide Adverse Economic Impact Directly Affecting Businesses, Including the Ability of California Businesses to Compete with Businesses in Other States:

The proposed action will not have a significant statewide adverse economic impact directly affecting business, including the ability of California businesses to compete with businesses in other states. The proposed action adjusts tag quotas for existing hunts, modifies season dates for two hunts on military land and makes minor editorial changes for consistency in Section numbering. Given the number of tags available and the area over which they are distributed, these proposals are economically neutral to business.

(b) Impact on the Creation or Elimination of Jobs Within the State, the Creation of New Businesses or the Elimination of Existing Businesses, or the Expansion of Businesses in California; Benefits of the Regulation to the Health and Welfare of California Residents, Worker Safety, and the State’s Environment:

The Commission anticipates benefits to the health and welfare of California residents. Hunting provides opportunities for multi-generational family

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activities and promotes respect for California's environment by the future stewards of the State's resources. The Commission anticipates benefits to the State's environment in the sustainable management of natural resources.

The proposed action will not have significant impacts on jobs or business within California because it will not result in a change in hunting effort. The proposed action does not provide benefits to worker safety because it does not address working conditions.

(c) Cost Impacts on Private Persons:

The Commission is not aware of any cost impacts that a representative private person or business would necessarily incur in reasonable compliance with this proposed action.

(d) Costs or Savings to State Agencies or Costs/Savings in Federal Funding to the State: None

(e) Other Nondiscretionary Costs/Savings to Local Agencies: None

(f) Programs Mandated on Local Agencies or School Districts: None

(g) Costs Imposed on Any Local Agency or School District that is Required to be Reimbursed under Part 7 (commencing with Section 17500) of Division 4: None

(h) Effect on Housing Costs: None

VII. Economic Impact Assessment:

The proposed action will have no statewide economic or fiscal impact because the proposed action would not constitute a significant change from the 2015 deer season in the additional hunt zones. The number of tags to be set in regulation for 2016 is intended to achieve or maintain the levels set forth in the approved deer herd management plans to preserve herd health and hunting opportunities in subsequent seasons.

(a) Effects of the regulation on the creation or elimination of jobs within the State:

The regulation will not affect the creation or elimination of jobs because no significant changes in hunting activity levels are anticipated.

(b) Effects of the regulation on the creation of new businesses or the elimination of existing businesses within the State:

The regulation will not impact the creation of new businesses or the elimination of businesses because no significant changes in hunting activity levels are anticipated.

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(c) Effects of the regulation on the expansion of businesses currently doing business within the State

The regulation will not affect the expansion of businesses currently doing business within the State because no significant changes in hunting activity levels are anticipated.

(d) Benefits of the regulation to the health and welfare of California residents:

The proposed regulation will benefit the health and welfare of California residents by maintaining sustainable deer populations and providing opportunities for the public to participate in a healthy outdoor activity.

(e) Benefits of the regulation to worker safety.

The proposed regulation will not affect worker safety.

(f) Benefits of the regulation to the State's environment

It is the policy of the State to encourage the conservation, maintenance, and utilization of the State’s living resources. The proposed action will further this core objective.

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INFORMATIVE DIGEST
(Policy Statement Overview)

Existing regulations provide for the number of deer hunting tags in the Additional Hunts. The proposed action provides a range of tag numbers for each hunt from which a final number will be determined, based on the post-winter status of each deer herd. These ranges are necessary at this time because the final number of tags cannot be determined until spring herd data are collected in March/April. Because various environmental factors such as severe winter conditions can adversely affect herd recruitment and over-winter adult survival, the final recommended quotas may fall below the current proposed range into the "Low Kill" alternative identified in the most recent Environmental Document Regarding Deer Hunting.

Existing regulations for Additional Hunts G-8 (Fort Hunter Liggett Antlerless Deer Hunt) and J-10 (Fort Hunter Liggett Apprentice Either-Sex Deer Hunt) provide for hunting to begin on October 3 and continue for two (2) consecutive days and reopen on October 10 and continue for three (3) consecutive days, inclusive of the Columbus Day holiday, in order to accommodate for Base operations and other hunt opportunities. The proposal would modify the season to account for the annual calendar shift and move the seasons one week later to eliminate conflicts with elk hunting during the first week of October. The proposal would change the season dates to open on October 8 and October 15, for 3 and 2 consecutive days respectively, and include the Columbus Day holiday, in order to accommodate for Base operations.

Minor editorial changes are necessary to provide consistency in subsection numbering, spelling, grammar, and clarification.

The proposed action changes the number of tags for all existing hunts to a series of ranges as indicated in the table below.

	Deer: § 360(c) Additional Hunts Tag Allocations		
§	**Hunt Number (and Title)**	**Current 2015**	**Proposed 2016 [Range]**
(1)	G-1 (Late Season Buck Hunt for Zone C-4)	2,710	500-5,000
(2)	G-3 (Goodale Buck Hunt)	35	5-50
(3)	G-6 (Kern River Deer Herd Buck Hunt)	50	25-100
(4)	G-7 (Beale Either-Sex Deer Hunt)	20 Military*	20 Military*
(5)	G-8 (Fort Hunter Liggett Antlerless Deer Hunt)	20 Tags Total* (10 Military & 10 Public)	20 Tags Total* (10 Military and 10 Public)

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	Deer: § 360(c) Additional Hunts Tag Allocations		
§	**Hunt Number (and Title)**	**Current 2015**	**Proposed 2016** **[Range]**
(6)	G-9 (Camp Roberts Antlerless Deer Hunt)	0	30 Tags Total* (15 Military and 15 Public)
(7)	G-10 (Camp Pendleton Either-Sex Deer Hunt)	250 Military*	250 Military*
(8)	G-11 (Vandenberg Either-Sex Deer Hunt)	200 Military*, DOD and as Authorized by the Installation Commander**	200 Military*, DOD and as Authorized by the Installation Commander**
(9)	G-12 (Gray Lodge Shotgun Either-Sex Deer Hunt)	30	10-50
(10)	G-13 (San Diego Antlerless Deer Hunt)	300	50-300
(11)	G-19 (Sutter-Yuba Wildlife Areas Either-Sex Deer Hunt)	25	10-50
(12)	G-21 (Ventana Wilderness Buck Hunt)	25	25-100
(13)	G-37 (Anderson Flat Buck Hunt)	25	25-50
(14)	G-38 (X-10 Late Season Buck Hunt)	300	50-300
(15)	G-39 (Round Valley Late Season Buck Hunt)	5	5-150
(16)	M-3 (Doyle Muzzleloading Rifle Buck Hunt)	20	10-75
(17)	M-4 (Horse Lake Muzzleloading Rifle Buck Hunt)	5	5-50
(18)	M-5 (East Lassen Muzzleloading Rifle Buck Hunt)	5	5-50
(19)	M-6 (San Diego Muzzleloading Rifle Either-Sex Deer Hunt)	80	25-100
(20)	M-7 (Ventura Muzzleloading Rifle Either-Sex Deer Hunt)	150	50-150
(21)	M-8 (Bass Hill Muzzleloading Rifle Buck Hunt)	20	5-50

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	Deer: § 360(c) Additional Hunts Tag Allocations		
§	**Hunt Number (and Title)**	**Current 2015**	**Proposed 2016 [Range]**
(22)	M-9 (Devil's Garden Muzzleloading Rifle Buck Hunt)	15	5-100
(23)	M-11 (Northwestern California Muzzleloading Rifle Buck Hunt)	20	20-200
(24)	MA-1 (San Luis Obispo Muzzleloading Rifle/Archery Either-Sex Deer Hunt)	150	20-150
(25)	MA-3 (Santa Barbara Muzzleloading Rifle/Archery Buck Hunt)	150	20-150
(26)	J-1 Lake Sonoma Apprentice Either-Sex Deer Hunt)	25	10-25
(27)	J-3 (Tehama Wildlife Area Apprentice Buck Hunt)	15	15-30
(28)	J-4 Shasta-Trinity Apprentice Buck Hunt)	15	15-50
(29)	J-7 (Carson River Apprentice Either-Sex Deer Hunt)	15	10-50
(30)	J-8 (Daugherty Hill Wildlife Area Apprentice Either-Sex Deer Hunt)	15	10-20
(31)	J-9 (Little Dry Creek Apprentice Shotgun Either-Sex Deer Hunt)	5	5-10
(32)	J-10 (Fort Hunter Liggett Apprentice Either-Sex Deer Hunt)	75 Tags Total* (15 Military & 60 Public)	85 Tags Total* (25 Military & 60 Public)
(33)	J-11 (San Bernardino Apprentice Either-Sex Deer Hunt)	40	10-50
(34)	J-12 (Round Valley Apprentice Buck Hunt)	10	10-20
(35)	J-13 (Los Angeles Apprentice Either-Sex Deer Hunt)	40	25-100
(36)	J-14 (Riverside Apprentice Either-Sex Deer Hunt)	30	15-75
(37)	J-15 (Anderson Flat Apprentice Buck Hunt)	10	5-30
(38)	J-16 (Bucks Mountain-Nevada City Apprentice Either-Sex Deer Hunt)	75	10-75

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	Deer: § 360(c) Additional Hunts Tag Allocations		
§	**Hunt Number (and Title)**	**Current 2015**	**Proposed 2016 [Range]**
(39)	J-17 (Blue Canyon Apprentice Either-Sex Deer Hunt)	25	5-25
(40)	J-18 (Pacific-Grizzly Flat Apprentice Either-Sex Deer Hunt)	75	10-75
(41)	J-19 (Zone X-7a Apprentice Either-Sex Deer Hunt)	25	10-40
(42)	J-20 (Zone X-7b Apprentice Either-Sex Deer Hunt)	20	5-20
(43)	J-21 (East Tehama Apprentice Either-Sex Deer Hunt)	50	20-80

**Specific numbers of tags are provided for military hunts through a system which restricts hunter access to desired levels and ensures biologically conservative hunting programs.*

***DOD = Department of Defense and eligible personnel as authorized by the Installation Commander.*

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Benefits of the regulations

The deer herd management plans specify objective levels for the proportion of bucks in the herds. These ratios are maintained and managed in part by annually modifying the number of hunting tags. The final values for the license tag numbers will be based upon findings from the annual harvest and herd composition counts.

Non-monetary benefits to the public

The Commission does not anticipate non-monetary benefits to the protection of public health and safety, worker safety, the prevention of discrimination, the promotion of fairness or social equity and the increase in openness and transparency in business and government.

Consistency with State or Federal Regulations

The Fish and Game Commission, pursuant to Fish and Game Code Sections 200, 202 and 203, has the sole authority to regulate deer hunting in California. Commission staff has searched the California Code of Regulations and has found the proposed changes pertaining to deer tag allocations are consistent with Sections 361, 701, 702, 708.5 and 708.6 of Title 14. Therefore the Commission has determined that the proposed amendments are neither inconsistent nor incompatible with existing State regulations.

REGULATORY TEXT

Subsection (c) of Section 360 is amended to read:

§360. Deer.

...[subsections (a) and (b)]

(c) Additional Hunts.
(1) G-1 (Late Season Buck Hunt for Zone C-4).

... [No change to subsections (A) through (C)]

(D) Number of Tags: ~~2,710~~ [500-5,000].

(2) G-3 (Goodale Buck Hunt).

... [No change to subsections (A) through (C)]

(D) Number of Tags: ~~35~~ [5-50].

(3) G-6 (Kern River Deer Herd Buck Hunt).

... ... [No change to subsections (A) through (C)]

(D) Number of Tags: ~~50~~ [25-100].

... [No change to subsection (c)(4)]

(5) G-8 (Fort Hunter Liggett Antlerless Deer Hunt).

... [No change to subsection (A)]

(B) Season: The season for additional hunt G-8 (Fort Hunter Liggett Antlerless Deer Hunt) shall open on October ~~3~~ 8 and extend for ~~2~~ 3 consecutive days and reopen on October ~~10~~ 15 and extend for ~~3~~ 2 consecutive days, except if rescheduled by the Commanding Officer with Department concurrence between the season opener and December 31.

... [No change to subsections (C) through (E)]

(6) G-9 (Camp Roberts Antlerless Deer Hunt).

... [No change to subsections (A) through (C)]

(D) Number of Tags: ~~0~~ 30 (15 military and 15 public).

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... [No change to subsection (E)]

... [No change to subsections (c)(7) and (8)]

(9) G-12 (Gray Lodge Shotgun Either-Sex Deer Hunt).

... [No changes to subsections (A) through (C)]

(D) Number of Tags: ~~30~~ [10-50].

... [No change to subsection (E)]

(10) G-13 (San Diego Antlerless Deer Hunt).

... [No changes to subsections (A) through (C)]

(D) Number of Tags: ~~300~~ [50-300].

(11) G-19 (Sutter-Yuba Wildlife Areas Either-Sex Deer Hunt).
(A) Area: Those portions of Yuba and Sutter counties within the exterior boundaries of: (1) the Feather River Wildlife Area, and (2) the Sutter Bypass Wildlife Area (as defined in Section ~~550~~ 551, Title 14, CCR).

... [No changes to subsections (B) and (C)]

(D) Number of Tags: ~~25~~ [10-50].

... [No change to subsection (E)]

(12) G-21 (Ventana Wilderness Buck Hunt).

... [No changes to subsections (A) through (C)]

(D) Number of Tags: ~~25~~ [25-100].

(13) G-37 (Anderson Flat Buck Hunt).

... [No changes to subsections (A) through (C)]

(D) Number of Tags: ~~25~~ [25-50].

(14) G-38 (X-10 Late Season Buck Hunt).

... [No changes to subsections (A) through (C)]

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(D) Number of Tags: ~~300~~ [50-300].

(15) G-39 (Round Valley Late Season Buck Hunt).

... [No changes to subsections (A) through (C)]

(D) Number of Tags: ~~5~~ [5-150].

(16) M-3 (Doyle Muzzleloading Rifle Buck Hunt).

... [No changes to subsections (A) through (C)]

(D) Number of Tags: ~~20~~ [10-75].

... [No change to subsection (E)]

(17) M-4 (Horse Lake Muzzleloading Rifle Buck Hunt).

... [No changes to subsections (A) through (C)]

(D) Number of Tags: ~~5~~ [5-50].

... [No change to subsection (E)]

(18) M-5 (East Lassen Muzzleloading Rifle Buck Hunt).

... [No changes to subsections (A) through (C)]

(D) Number of Tags: ~~5~~ [5-50].

... [No change to subsection (E)]

(19) M-6 (San Diego Muzzleloading Rifle Either-Sex Deer Hunt).

... [No changes to subsections (A) through (C)]

(D) Number of Tags: ~~80~~ [25-100].

... [No change to subsection (E)]

(20) M-7 (Ventura Muzzleloading Rifle Either-Sex Deer Hunt).

... [No changes to subsections (A) through (C)]

(D) Number of Tags: ~~150~~ [50-150].

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... [No change to subsection (E)]

(21) M-8 (Bass Hill Muzzleloading Rifle Buck Hunt).

... [No changes to subsections (A) through (C)]

(D) Number of Tags: ~~20~~ [5-50].

... [No change to subsection (E)]

(22) M-9 (Devil's Garden Muzzleloading Rifle Buck Hunt).

... [No changes to subsections (A) through (C)]

(D) Number of Tags: ~~15~~ [5-100].

... [No change to subsection (E)]

(23) M-11 (Northwestern California Muzzleloading Rifle Buck Hunt).

... [No changes to subsections (A) through (C)]

(D) Number of Tags: ~~20~~ [20-200].

... [No change to subsection (E)]

(24) MA-1 (San Luis Obispo Muzzleloading Rifle/Archery Either-Sex Deer Hunt).

... [No changes to subsections (A) through (C)]

(D) Number of Tags: ~~150~~ [20-150].

... [No change to subsection (E)]

(25) MA-3 (Santa Barbara Muzzleloading Rifle/Archery Buck Hunt).

... [No changes to subsections (A) through (C)]

(D) Number of Tags: ~~150~~ [20-150].

... [No change to subsection (E)]

(26) J-1 (Lake Sonoma Apprentice Either-Sex Deer Hunt).

... [No changes to subsections (A) through (C)]

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(D) Number of Tags: ~~25~~ [10-25].

... [No change to subsection (E)]

(27) J-3 (Tehama Wildlife Area Apprentice Buck Hunt).

... [No changes to subsections (A) through (C)]

(D) Number of Tags: ~~15~~ [15-30].

... [No change to subsection (E)]

(28) J-4 (Shasta-Trinity Apprentice Buck Hunt).

... [No changes to subsections (A) through (C)]

(D) Number of Tags: ~~15~~ [15-50].

... [No change to subsection (E)]

(29) J-7 (Carson River Apprentice Either-Sex Deer Hunt).

... [No changes to subsections (A) through (C)]

(D) Number of Tags: ~~15~~ [10-50].

... [No change to subsection (E)]

(30) J-8 (Daugherty Hill Wildlife Area Apprentice Either-Sex Deer Hunt).
(A) Area: That portion of Yuba County within the exterior boundaries of the Daugherty Hill Wildlife Area (as defined in Section ~~550~~ 551, Title 14, CCR).

... [No changes to subsections (B) through (C)]

(D) Number of Tags: ~~15~~ [10-20].

... [No change to subsection (E)]

(31) J-9 (Little Dry Creek Apprentice Shotgun Either-Sex Deer Hunt).

... [No changes to subsections (A) through (C)]

(D) Number of Tags: ~~5~~ [5-10].

... [No change to subsection (E)]

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(32) J-10 (Fort Hunter Liggett Apprentice Either-Sex Deer Hunt).

... [No change for subsection (A)]

(B) Season: The season for additional hunt J-10 (Fort Hunter Liggett Apprentice Either-Sex Deer Hunt) shall open on October ~~3~~ 8 and extend for ~~2~~ 3 consecutive days and reopen on October ~~10~~ 15 and extend for ~~3~~ 2 consecutive days, except if rescheduled by the Commanding Officer with Department concurrence between the season opener and December 31.

... [No change to subsection (C)]

(D) Number of Tags: ~~75~~ 85 (~~15~~ 25 military and 60 general public).

... [No change to subsection (E)]

(33) J-11 (San Bernardino Apprentice Either-Sex Deer Hunt).

... [No changes for subsections (A) through (C)]

(D) Number of Tags: ~~40~~ [10-50].

... [No change to subsection (E)]

(E) Special Conditions:

(34) J-12 (Round Valley Apprentice Buck Hunt).

... [No changes to subsections (A) through (C)]

(D) Number of Tags: ~~10~~ [10-20].

... [No change to subsection (E)]

(35) J-13 (Los Angeles Apprentice Either-Sex Deer Hunt).

... [No changes to subsections (A) through (C)]

(D) Number of Tags: ~~40~~ [25-100].

... [No change to subsection (E)]

(36) J-14 (Riverside Apprentice Either-Sex Deer Hunt).

... [No changes to subsections (A) through (C)]

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(D) Number of Tags: ~~30~~ [15-75].

... [No change to subsection (E)]

(37) J-15 (Anderson Flat Apprentice Buck Hunt).

... [No changes to subsections (A) through (C)]

(D) Number of Tags: ~~10~~ [5-30].

... [No change to subsection (E)]

(38) J-16 (Bucks Mountain-Nevada City Apprentice Either-Sex Deer Hunt).

... [No changes to subsections (A) through (C)]

(D) Number of Tags: ~~75~~ [10-75].

... [No change to subsection (E)]

(39) J-17 (Blue Canyon Apprentice Either-Sex Deer Hunt).

... [No changes to subsections (A) through (C)]

(D) Number of Tags: ~~25~~ [5-25].

... [No change to subsection (E)]

(40) J-18 (Pacific-Grizzly Flat Apprentice Either-Sex Deer Hunt).

... [No changes to subsections (A) through (C)]

(D) Number of Tags: ~~75~~ [10-75].

... [No change to subsection (E)]

(41) J-19 (Zone X-7a Apprentice Either-Sex Deer Hunt).

... [No changes to subsections (A) through (C)]

(D) Number of Tags: ~~25~~ [10-40].

... [No change to subsection (E)]

(42) J-20 (Zone X-7b Apprentice Either-Sex Deer Hunt).

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... [No changes to subsections (A) through (C)]

(D) Number of Tags: ~~20~~ [5-20].

... [No change to subsection (E)]

(43) J-21 (East Tehama Apprentice Either-Sex Deer Hunt).

... [No changes to subsections (A) through (C)]

(D) Number of Tags: ~~50~~ [20-80].

... [No change to subsection (E)]

(E) Special Conditions:

(44) Conditions for Additional Hunts.

... [No changes to subsections (A) and (B)]

... [subsections (d) and (e)]

Note: Authority: Sections 200, 202, 203, 220, 460, 3051, 3452, 3453, 3953 and 4334, Fish and Game Code. Reference: Sections 200, 202, 203, 203.1, 207, 458, 459, 460, 3051, 3452, 3453, 3953 and 4334, Fish and Game Code.

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STATE OF CALIFORNIA
FISH AND GAME COMMISSION
INITIAL STATEMENT OF REASONS FOR REGULATORY ACTION
(Pre-Publication of Notice Statement)

Amend Section 361
Title 14, California Code of Regulations (CCR)
Re: Archery Deer Hunting

I. Date of Initial Statement of Reasons: October 12, 2015

II. Dates and Locations of Scheduled Hearings:

(a) Notice Hearing: Date: December 10, 2015
Location: San Diego, CA

(b) Discussion Hearing: Date: February 11, 2016
Location: Sacramento, CA

(c) Adoption Hearing: Date: April 14, 2016
Location: Santa Rosa, CA

III. Description of Regulatory Action:

(a) Statement of Specific Purpose of Regulation Change and Factual Basis for Determining that Regulation Change is Reasonably Necessary:

1. Number of Tags

Existing regulations provide for the number of deer hunting tags for area-specific archery hunts. The proposed action provides a range of tag numbers for each hunt from which a final number will be determined, based on the post-winter status of each deer herd. Ranges are necessary at this time because the final number of tags cannot be determined until spring herd data are collected in March/April.

In early spring, surveys of deer herds are conducted to determine the proportion of fawns that have survived the winter. This information is used in conjunction with the prior year harvest and fall herd composition data to estimate overall herd size, sex and age ratios, and the predicted number of available bucks next season. The number of bucks and does needs to be estimated prior to the hunting season to determine how many surplus bucks will exist over and above the number required to maintain the desired buck ratio objectives stated in the approved deer herd management plans.

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This proposed regulatory action would change the number of tags for all existing hunts to a series of ranges as indicated in the following table:

	Archery Deer Hunting: § 361(b) Tag Allocations		
§	**Hunt Number (and Title)**	**Current 2015**	**Proposed 2016 [Range]**
(1)	A-1 (C Zones Archery Only Hunt)	1,945	[150-3,000]
(2)	A-3 (Zone X-1 Archery Hunt)	115	[50-1,000]
(3)	A-4 (Zone X-2 Archery Hunt)	10	[5-100]
(4)	A-5 (Zone X-3a Archery Hunt)	35	[10-300]
(5)	A-6 (Zone X-3b Archery Hunt)	70	[25-400]
(6)	A-7 (Zone X-4 Archery Hunt)	120	[25-400]
(7)	A-8 (Zone X-5a Archery Hunt)	15	[15-100]
(8)	A-9 (Zone X-5b Archery Hunt)	5	[5-100]
(9)	A-11 (Zone X-6a Archery Hunt)	50	[10-200]
(10)	A-12 (Zone X-6b Archery Hunt)	90	[10-200]
(11)	A-13 (Zone X-7a Archery Hunt)	45	[10-200]
(12)	A-14 (Zone X-7b Archery Hunt)	25	[5-100]
(13)	A-15 (Zone X-8 Archery Hunt)	40	[5-100]
(14)	A-16 (Zone X-9a Archery Hunt)	140	[50-500]
(15)	A-17 (Zone X-9b Archery Hunt)	300	[50-500]
(16)	A-18 (Zone X-9c Archery Hunt)	350	[50-500]
(17)	A-19 (Zone X-10 Archery Hunt)	100	[25-200]

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	Archery Deer Hunting: § 361(b) Tag Allocations		
§	**Hunt Number (and Title)**	**Current 2015**	**Proposed 2016 [Range]**
(18)	A-20 (Zone X-12 Archery Hunt)	100	[50-500]
(19)	A-21 (Anderson Flat Archery Buck Hunt)	25	[25-100]
(20)	A-22 (San Diego Archery Either-Sex Deer Hunt)	1,000	[200-1,500]
(21)	A-24 (Monterey Archery Either-Sex Deer Hunt)	100	[25-200]
(22)	A-25 (Lake Sonoma Archery Either-Sex Deer Hunt)	35	[20-75]
(23)	A-26 (Bass Hill Archery Buck Hunt)	30	[10-100]
(24)	A-27 (Devil's Garden Archery Buck Hunt)	5	[5-75]
(25)	A-30 (Covelo Archery Buck Hunt)	40	[20-100]
(26)	A-31 (Los Angeles Archery Either-Sex Deer Hunt)	1,000	[200-1,500]
(27)	A-32 (Ventura/Los Angeles Archery Late Season Either-Sex Deer Hunt)	250	[50-300]
(28)	A-33 (Fort Hunter Liggett Late Season Archery Either-Sex Deer Hunt)	50 Tags Total* (25 Military & 25 Public)	50 Tags Total* (25 Military & 25 Public)

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The actual tag numbers for each affected hunt will be reflected in the Final Statement of Reasons and will be selected from the range of values provided by this proposal. The number of tags is intended to allow the appropriate level of hunting opportunity and harvest of bucks in the population, while achieving or maintaining the buck ratios at, or near, objective levels set forth in the approved deer herd management plans. These final values for the license tag numbers will be based upon findings from the annual harvest and herd composition counts. However, under circumstances where various environmental factors such as severe winter conditions can adversely affect herd recruitment and over-winter adult survival, final tag quotas may fall

below the proposed tag range into the “Low Kill” alternative identified in the most recent Environmental Document Regarding Deer Hunting.

A minor editorial correction is proposed for subsection 361(b)(26)(C) changing the referenced subsection to 351(c) which is the correct citation for the definition of either-sex deer.

(b) Authority and Reference Sections from Fish and Game Code for Regulation:

Authority: Sections 200, 202, 203, 220, and 4370, Fish and Game Code.

Reference: Sections 200, 202, 203, 203.1, 207, and 4370, Fish and Game Code.

(c) Specific Technology or Equipment Required by Regulatory Change: None

(d) Identification of Reports or Documents Supporting Regulation Change:

2007 Final Environmental Document Regarding Deer Hunting

(e) Public Discussions of Proposed Regulations Prior to Notice Publication:

Fish and Game Commission Wildlife Resources Committee meeting held in Fresno on September 9, 2015.

IV. Description of Reasonable Alternatives to Regulatory Action:

(a) Alternatives to Regulation Change:

There is no reasonable alternative to the proposed action.

(b) No Change Alternative:

The “No Change Alternative” was considered and found inadequate to attain the project objectives. Retaining the current number of tags for the hunts listed may not be responsive to changes in the status of the herds. The deer herd management plans specify objective levels for the proportion of bucks in the herds. These ratios are maintained and managed in part by modifying the number of hunting tags. The “No Change Alternative” would not allow management of the desired proportion of bucks stated in the approved deer herd management plans.

(c) Consideration of Alternatives:

In view of information currently possessed, no reasonable alternative considered would be more effective in carrying out the purpose for which the

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regulation is proposed, would be as effective and less burdensome to affected private persons than the proposed regulation, or would be more cost effective to affected private persons and equally effective in implementing the statutory policy or other provision of law.

(d) Description of Reasonable Alternatives That Would Lessen Adverse Impact on Small Business: None.

V. Mitigation Measures Required by Regulatory Action:

The proposed regulatory action will have no negative impact on the environment; therefore, no mitigation measures are needed. The maximum number of tags available in the newly proposed range is at or below the number of tags analyzed in the most recent Final Environmental Document Regarding Deer Hunting and related documents.

VI. Impact of Regulatory Action:

The potential for significant statewide adverse economic impacts that might result from the proposed regulatory action has been assessed, and the following initial determinations relative to the required statutory categories have been made.

(a) Significant Statewide Adverse Economic Impact Directly Affecting Businesses, Including the Ability of California Businesses to Compete with Businesses in Other States:

The proposed action will not have a significant statewide adverse economic impact directly affecting business, including the ability of California businesses to compete with businesses in other states. The proposed action adjusts tag quotas for existing hunts. Given the number of tags available and the area over which they are distributed, these proposals are economically neutral to business.

(b) Impact on the Creation or Elimination of Jobs Within the State, the Creation of New Businesses or the Elimination of Existing Businesses, or the Expansion of Businesses in California; Benefits of the Regulation to the Health and Welfare of California Residents, Worker Safety, and the State's Environment:

The Commission anticipates benefits to the health and welfare of California residents and to the state's environment. Hunting provides opportunities for multi-generational family activities and promotes respect for California's environment by the future stewards of the State's resources and the action contributes to the sustainable management of natural resources.

The proposed action will not have significant impacts on jobs or business within California because no significant changes in hunting activity levels

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are anticipated. The proposed action does not provide benefits to worker safety.

(c) Cost Impacts on Private Persons:

The Commission is not aware of any cost impacts that a representative private person or business would necessarily incur in reasonable compliance with this proposed action.

(d) Costs or Savings to State Agencies or Costs/Savings in Federal Funding to the State: None

(e) Other Nondiscretionary Costs/Savings to Local Agencies: None

(f) Programs Mandated on Local Agencies or School Districts: None

(g) Costs Imposed on Any Local Agency or School District that is Required to be Reimbursed under Part 7 (commencing with Section 17500) of Division 4: None

(h) Effect on Housing Costs: None

VII. Economic Impact Assessment:

The proposed action will have no statewide economic or fiscal impact because the proposed action would not constitute a significant change from the 2015 deer season in the archery hunt zones. The number of tags to be set in regulation for 2016 is intended to achieve or maintain the levels set forth in the approved deer herd management plans to preserve herd health and hunting opportunities in subsequent seasons.

(a) Effects of the regulation on the creation or elimination of jobs within the State:

The regulation will not affect the creation or elimination of jobs because no significant changes in hunting activity levels are anticipated.

(b) Effects of the regulation on the creation of new businesses or the elimination of existing businesses within the State:

The regulation will not impact the creation of new businesses or the elimination of businesses because no significant changes in hunting activity levels are anticipated.

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(c) Effects of the regulation on the expansion of businesses currently doing business within the State

The regulation will not affect the expansion of businesses currently doing business within the State because no significant changes in hunting activity levels are anticipated.

(d) Benefits of the regulation to the health and welfare of California residents:

The proposed regulation will benefit the health and welfare of California residents. Hunting provides opportunities for multi-generational family activities and promotes respect for California's environment by the future stewards of the State's resources and the action contributes to the sustainable management of natural resources.

(e) Benefits of the regulation to worker safety.

The proposed regulation will not affect worker safety.

(f) Benefits of the regulation to the State's environment

It is the policy of the State to encourage the conservation, maintenance, and utilization of the State's living resources. The proposed action will further this core objective.

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INFORMATIVE DIGEST
(Policy Statement Overview)

Existing regulations provide for the number of deer hunting tags for existing area-specific archery hunts. The proposed action changes the number of tags for existing hunts to a series of ranges presented in the table below. These ranges are necessary at this time because the final number of tags cannot be determined until spring herd data are collected in March/April. Because various environmental factors such as severe winter conditions can adversely affect herd recruitment and over-winter adult survival, the final recommended quotas may fall below the current proposed range into the "Low Kill" alternative identified in the most recent Environmental Document Regarding Deer Hunting.

	Archery Deer Hunting: § 361(b) Tag Allocations		
§	**Hunt Number (and Title)**	**Current 2015**	**Proposed 2016 [Range]**
(1)	A-1 (C Zones Archery Only Hunt)	1,945	[150-3,000]
(2)	A-3 (Zone X-1 Archery Hunt)	115	[50-1,000]
(3)	A-4 (Zone X-2 Archery Hunt)	10	[5-100]
(4)	A-5 (Zone X-3a Archery Hunt)	35	[10-300]
(5)	A-6 (Zone X-3b Archery Hunt)	70	[25-400]
(6)	A-7 (Zone X-4 Archery Hunt)	120	[25-400]
(7)	A-8 (Zone X-5a Archery Hunt)	15	[15-100]
(8)	A-9 (Zone X-5b Archery Hunt)	5	[5-100]
(9)	A-11 (Zone X-6a Archery Hunt)	50	[10-200]
(10)	A-12 (Zone X-6b Archery Hunt)	90	[10-200]
(11)	A-13 (Zone X-7a Archery Hunt)	45	[10-200]

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(12)	A-14 (Zone X-7b Archery Hunt)	25	[5-100]
(13)	A-15 (Zone X-8 Archery Hunt)	40	[5-100]
(14)	A-16 (Zone X-9a Archery Hunt)	140	[50-500]
(15)	A-17 (Zone X-9b Archery Hunt)	300	[50-500]
(16)	A-18 (Zone X-9c Archery Hunt)	350	[50-500]
(17)	A-19 (Zone X-10 Archery Hunt)	100	[25-200]
(18)	A-20 (Zone X-12 Archery Hunt)	100	[50-500]
(19)	A-21 (Anderson Flat Archery Buck Hunt)	25	[25-100]
(20)	A-22 (San Diego Archery Either-Sex Deer Hunt)	1,000	[200-1,500]
(21)	A-24 (Monterey Archery Either-Sex Deer Hunt)	100	[25-200]
(22)	A-25 (Lake Sonoma Archery Either-Sex Deer Hunt)	35	[20-75]
(23)	A-26 (Bass Hill Archery Buck Hunt)	30	[10-100]
(24)	A-27 (Devil's Garden Archery Buck Hunt)	5	[5-75]
(25)	A-30 (Covelo Archery Buck Hunt)	40	[20-100]
(26)	A-31 (Los Angeles Archery Either-Sex Deer Hunt)	1,000	[200-1,500]
(27)	A-32 (Ventura/Los Angeles Archery Late Season Either-Sex Deer Hunt)	250	[50-300]
(28)	A-33 (Fort Hunter Liggett Late Season Archery Either-Sex Deer Hunt)	50 Tags Total* (25 Military & 25 Public)	50 Tags Total* (25 Military & 25 Public)

* *Specific numbers of tags are provided for military hunts through a system which restricts hunter access to desired levels and ensures biologically conservative hunting programs.*

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Benefits of the regulations

The deer herd management plans specify objective levels for the proportion of bucks in the herds. These ratios are maintained and managed in part by annually modifying the number of hunting tags. The final values for the license tag numbers will be based upon findings from the annual harvest and herd composition counts.

Non-monetary benefits to the public

The Commission does not anticipate non-monetary benefits to the protection of public health and safety, worker safety, the prevention of discrimination, the promotion of fairness or social equity and the increase in openness and transparency in business and government.

Consistency with State or Federal Regulations

The Fish and Game Commission, pursuant to Fish and Game Code Sections 200, 202 and 203, has the sole authority to regulate archery deer hunting in California. Commission staff has searched the California Code of Regulations and has found the proposed changes pertaining to archery deer tag allocations are consistent with Sections 360, 701, 702, 708.5 and 708.6 of Title 14. Therefore the Commission has determined that the proposed amendments are neither inconsistent nor incompatible with existing State regulations.

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REGULATORY TEXT

Section 361 is amended to read:

§361. Archery Deer Hunting.

... [No changes in subsection (a)]

(b) Archery Hunting With Area-specific Archery Tags. Deer may be taken only with archery equipment specified in Section 354, only during the archery seasons as follows:
(1) A-1 (C Zones Archery Only Hunt).

... [No changes to subsections (A) through (C)]

(D) Number of Tags: ~~1,945~~ [150-3,000] A-1 (C Zones Archery Only Hunt) tags are valid in Zones C-1, C-2, C-3, and C-4 only during the archery season as specified above in subsections 361(b)(1)(B)1 through 4.

(2) A-3 (Zone X-1 Archery Hunt)

... [No changes to subsections (A) through (C)]

(D) Number of Tags: ~~115~~ [50-1,000].

(3) A-4 (Zone X-2 Archery Hunt)

... [No changes to subsections (A) through (C)]

(D) Number of Tags: ~~10~~ [5-100].

(4) A-5 (Zone X-3a Archery Hunt).

... [No changes to subsections (A) through (C)]

(D) Number of Tags: ~~35~~ [10-300].

(5) A-6 (Zone X-3b Archery Hunt).

... [No changes to subsections (A) through (C)]

(D) Number of Tags: ~~70~~ [25-400].

(6) A-7 (Zone X-4 Archery Hunt).

... [No changes to subsections (A) through (C)]

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(D) Number of Tags: ~~120~~ [25-400].

(7) A-8 (Zone X-5a Archery Hunt).

... [No changes to subsections (A) through (C)]

(D) Number of Tags: ~~15~~ [15-100].

(8) A-9 (Zone X-5b Archery Hunt).

... [No changes to subsections (A) through (C)]

(D) Number of Tags: ~~5~~ [5-100].

(9) A-11 (Zone X-6a Archery Hunt).

... [No changes to subsections (A) through (C)]

(D) Number of Tags: ~~50~~ [10-200].

(10) A-12 (Zone X-6b Archery Hunt).

... [No changes to subsections (A) through (C)]

(D) Number of Tags: ~~90~~ [10-200].

(11) A-13 (Zone X-7a Archery Hunt).

... [No changes to subsections (A) through (C)]

(D) Number of Tags: ~~45~~ [10-200].

(12) A-14 (Zone X-7b Archery Hunt).

... [No changes to subsections (A) through (C)]

(D) Number of Tags: ~~25~~ [5-100].

(13) A-15 (Zone X-8 Archery Hunt).

... [No changes to subsections (A) through (C)]

(D) Number of Tags: ~~40~~ [5-100].

(14) A-16 (Zone X-9a Archery Hunt).

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... [No changes to subsections (A) through (C)]

(D) Number of Tags: ~~140~~ [50-500].

(15) A-17 (Zone X-9b Archery Hunt).

... [No changes to subsections (A) through (C)]

(D) Number of Tags: ~~300~~ [50-500].

(16) A-18 (Zone X-9c Archery Hunt).

... [No changes to subsections (A) through (C)]

(D) Number of Tags: ~~350~~ [50-500].

(17) A-19 (Zone X-10 Archery Hunt).

... [No changes to subsections (A) through (C)]

(D) Number of Tags: ~~100~~ [25-200].

(18) A-20 (Zone X-12 Archery Hunt).

... [No changes to subsections (A) through (C)]

(D) Number of Tags: ~~100~~ [50-500].

(19) A-21 (Anderson Flat Archery Buck Hunt).

... [No changes to subsections (A) through (C)]

(D) Number of Tags: ~~25~~ [25-100].

(20) A-22 (San Diego Archery Either-Sex Deer Hunt).

... [No changes to subsections (A) through (C)]

(D) Number of Tags: ~~1,000~~ [200-1,500].

(21) A-24 (Monterey Archery Either-Sex Deer Hunt).

... [No changes to subsections (A) through (C)]

(D) Number of Tags: ~~100~~ [25-200].

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(22) A-25 (Lake Sonoma Archery Either-Sex Deer Hunt).

... [No changes to subsections (A) through (C)]

(D) Number of Tags: ~~35~~ [20-75].

... [No change to subsection (E)]

(23) A-26 (Bass Hill Archery Buck Hunt).

... [No changes to subsections (A) through (C)]

(D) Number of Tags: ~~30~~ [10-100].

(24) A-27 (Devil's Garden Archery Buck Hunt).

... [No changes to subsections (A) through (C)]

(D) Number of Tags: ~~5~~ [5-75].

(25) A-30 (Covelo Archery Buck Hunt).

... [No changes to subsections (A) through (C)]

(D) Number of Tags: ~~40~~ [20-100].

(26) A-31 (Los Angeles Archery Either-Sex Deer Hunt).

... [No changes to subsections (A) through (B)]

(C) Bag and Possession Limit: One either-sex deer (see subsection 351 ~~(b)~~ (c)) per tag.

(D) Number of Tags: ~~1,000~~ [200-1,500].

(27) A-32 (Ventura/Los Angeles Late Season Archery Either-Sex Deer Hunt).

... [No changes to subsections (A) through (C)]

(D) Number of Tags: ~~250~~ [50-300].

... [No changes to subsection (b)(28)]

... [No changes to subsections (c) through (e)]

Note: Authority cited: Sections 200, 202, 203, 220 and 4370, Fish and Game Code.
Reference: Sections 200, 202, 203, 203.1, 207 and 4370, Fish and Game Code.

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STATE OF CALIFORNIA
FISH AND GAME COMMISSION
INITIAL STATEMENT OF REASONS FOR REGULATORY ACTION
(Pre-Publication of Notice Statement)

Amend Subsection 362,
Title 14, California Code of Regulations (CCR)
Re: Nelson Bighorn Sheep

Date of Initial Statement of Reasons: November 2, 2015

II. Dates and Locations of Scheduled Hearings:

(a) Notice Hearing: Date: December 10, 2015
Location: San Diego, CA

(b) Discussion Hearings: Date: February 11, 2016
Location: Sacramento, CA

(c) Adoption Hearing: Date: April 14, 2016
Location: Santa Rosa, CA

III. Description of Regulatory Action:

(a) Statement of Specific Purpose of Regulation Change and Factual Basis for Determining that Regulation Change is Reasonably Necessary:

In accordance with management goals and objectives, and in order to maintain hunting quality, tag quotas for hunts need to be adjusted annually. Current regulations specify the number of bighorn sheep hunting tags for the 2015 season. This proposed regulatory action will amend subsection 362(d) providing the number of tags for bighorn sheep hunting in 2016.

Preliminarily, the tag numbers are presented in ranges (e.g., [0-3]) in the table in subsection 362(d) of the amended Regulatory Text. Final tag quotas for each zone will be identified and recommended to the Fish and Game Commission at the April 14, 2016, adoption hearing.

Section 4902 of the Fish and Game Code specifies that the Commission may allow the take of no more than 15 percent of the mature Nelson bighorn rams estimated in the hunt areas in a single year, based on the Department's annual estimate of the population in each management unit. The Department is currently implementing aerial surveys. The proposed tag ranges are biologically conservative by design to ensure that harvest is consistent with management plan guidelines for individual units and not more than 15 percent of the mature rams in any zone are taken. The Department's research indicates that aerial surveys do not detect all mature rams present.

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The Department's recommendations to the Commission will be consistent with the following criteria as supported by management plans:

- If the Department's annual population estimate for any of the individual management units is below 50 adult ewes and/or the ram/ewe ratio falls below 40:100, then the Department will recommend a 0 tag quota for the 2016 season in that unit.

- If no substantial reduction in population is determined in the estimate of the population, then tag quotas for 2016 will be recommended consistent with management plan guidelines and the statutory requirement that no more than 15% of the mature rams may be harvested through hunting, Fish and Game Code section 4902(a)(2).

(b) Authority and Reference Sections from Fish and Game Code for Regulation:

Authority: Sections 200, 202, 203, 220, 1050, and 4902, Fish and Game Code.
Reference: Sections 1050, 3950, and 4902, Fish and Game Code.

(c) Specific Technology or Equipment Required by Regulatory Change: None.

(d) Identification of Reports or Documents Supporting Regulation Change:

2011 Final Environmental Document Regarding Bighorn Sheep Hunting

(e) Public Discussions of Proposed Regulations Prior to Notice Publication:

Fish and Game Commission's Wildlife Resources Committee meeting held on September 9, 2015 in Fresno, California.

IV. Description of Reasonable Alternatives to Regulatory Action:

(a) Alternatives to Regulation Change:

No alternatives were identified.

(b) No Change Alternative:

The no-change alternative was considered and rejected because it would not attain project objectives of providing for hunting opportunities while maintaining bighorn sheep populations within desired population objectives. Retaining the current tag quota for each zone may not be responsive to biologically-based changes in the status of various herds.

(c) Consideration of Alternatives:

In view of information currently possessed, no reasonable alternative considered would be more effective in carrying out the purpose for which the

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regulation is proposed, would be as effective and less burdensome to affected private persons than the proposed regulation, or would be more cost effective to affected private persons and equally effective in implementing the statutory policy or other provision of law.

V. Mitigation Measures Required by Regulatory Action:

The proposed regulatory action will have no negative impact on the environment; therefore, no mitigation measures are needed. The maximum number of tags available in the newly proposed range is at or below the number of tags analyzed in the 2011 Final Environmental Document Regarding Bighorn Sheep Hunting.

VI. Impact of Regulatory Action:

The potential for significant statewide adverse economic impacts that might result from the proposed regulatory action has been assessed, and the following initial determinations relative to the required statutory categories have been made.

(a) Significant Statewide Adverse Economic Impact Directly Affecting Businesses, Including the Ability of California Businesses to Compete with Businesses in Other States:

The proposed action will not have a significant statewide adverse economic impact directly affecting business, including the ability of California businesses to compete with businesses in other states. The proposed action adjusts tag quotas for existing hunts. Given the number of tags available and the area over which they are distributed, these proposals are economically neutral to business.

(b) Impact on the Creation or Elimination of Jobs Within the State, the Creation of New Businesses or the Elimination of Existing Businesses, or the Expansion of Businesses in California; Benefits of the Regulation to the Health and Welfare of California Residents, Worker Safety, and the State's Environment:

The Commission anticipates benefits to the health and welfare of California residents. Hunting provides opportunities for multi-generational family activities and promotes respect for California's environment by the future stewards of the State's resources. The Commission anticipates benefits to the State's environment in the sustainable management of natural resources.

The proposed action will not have significant impacts on jobs or business within California and does not provide benefits to worker safety.

(c) Cost Impacts on Representative Private Persons/Business:

The Commission is not aware of any cost impacts that a representative private person or business would necessarily incur in reasonable compliance with the proposed action.

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(d) Costs or Savings to State Agencies or Costs/Savings in Federal Funding to the State: None.

(e) Other Nondiscretionary Costs/Savings to Local Agencies: None.

(f) Programs Mandated on Local Agencies or School Districts: None.

(g) Costs Imposed on Any Local Agency or School District that is Required to be Reimbursed under Part 7 (commencing with Section 17500) of Division 4: None.

(h) Effect on Housing Costs: None.

VII. Economic Impact Assessment

The proposed action will have no statewide economic or fiscal impact because the proposed action would not constitute a significant change from the last bighorn sheep season. The number of tags to be set in regulation for 2016 is intended to achieve or maintain the levels set forth in the approved management plans to preserve herd health and hunting opportunities in subsequent seasons.

(a) Effects of the regulation on the creation or elimination of jobs within the State:

The regulation will not affect the creation or elimination of jobs because no substantial changes in hunting activity are anticipated.

(b) Effects of the regulation on the creation of new businesses or the elimination of existing businesses within the State:

The regulation will not impact the creation of new businesses or the elimination of businesses because no substantial changes in hunting activity are anticipated.

(c) Effects of the regulation on the expansion of businesses currently doing business within the State

The regulation will not affect the expansion of businesses currently doing business within the State because no substantial changes in hunting activity are anticipated.

(d) Benefits of the regulation to the health and welfare of California residents:

The Commission anticipates benefits to the health and welfare of California residents. Hunting provides opportunities for multi-generational family activities and promotes respect for California's environment by the future stewards of the State's resources.

(e) Benefits of the regulation to worker safety.

The proposed regulation will not affect worker safety.

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(f) Benefits of the regulation to the State's environment

It is the policy of the State to encourage the conservation, maintenance, and utilization of the living resources. The proposed action will further this core objective.

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INFORMATIVE DIGEST
(Policy Statement Overview)

The current regulation in Section 362, T14, CCR, provides for limited hunting of Nelson bighorn rams in specified areas of the State. The proposed amendments are intended to adjust the number of hunting tags for the 2016 season based on the Department's annual estimate of the population in each of the nine hunt zones. The Department's final recommendations will ensure that the take will be no more than 15 percent of the mature rams estimated in each zone in accordance with Fish and Game Code Section 4902.

Preliminarily, the tag numbers are presented as ranges (e.g., [0 -3]) in the table in subsection 362(d) of the amended Regulatory Text. Final tag quotas for each zone will be identified and recommended to the Fish and Game Commission at the April 14, 2016, adoption hearing.

Benefits of the regulations

The Nelson Bighorn Sheep management plans specify objective levels for the herds. These ratios are maintained and managed in part by annually modifying the number of tags. The final values for the license tag numbers will be based upon findings from the population surveys.

Non-monetary benefits to the public

The Commission does not anticipate non-monetary benefits to the protection of public health and safety, worker safety, the prevention of discrimination, the promotion of fairness or social equity and the increase in openness and transparency in business and government.

Consistency with State or Federal Regulations

The Fish and Game Commission, pursuant to Fish and Game Code Sections 200, 202 and 203, has the sole authority to regulate Nelson Bighorn Sheep hunting in California. Commission staff has searched the California Code of Regulations and has found the proposed changes pertaining to Nelson Bighorn Sheep tag allocations are consistent with the provisions of Title 14. Therefore the Commission has determined that the proposed amendments are neither inconsistent nor incompatible with existing State regulations.

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REGULATORY TEXT

Subsection (d) of Section 362, Title 14, CCR is amended to read:

§ 362. Nelson Bighorn Sheep.

[No changes to subsections (a) through (c)]

(d) Number of License Tags:

Nelson Bighorn Sheep Hunt Zones	*Tag Allocation*
Zone 1 - Marble/Clipper Mountains	~~3~~ [0-4]
Zone 2 - Kelso Peak/Old Dad Mountains	~~0~~ [0-4]
Zone 3 - Clark/Kingston Mountain Ranges	~~1~~ [0-2]
Zone 4 - Orocopia Mountains	~~1~~ [0-2]
Zone 5 - San Gorgonio Wilderness	~~2~~ [0-3]
Zone 6 - Sheep Hole Mountains	~~0~~ [0-2]
Zone 7 - White Mountains	~~1~~ [0-5]
Zone 8 - South Bristol Mountains	~~1~~ [0-3]
Zone 9 - Cady Mountains	~~2~~ [0-4]
Open Zone Fund-Raising Tag	~~1~~ [0-1]
Marble/Clipper/South Bristol Mountains Fund-Raising Tag	~~0~~ [0-1]
Kelso Peak/Old Dad Mountains Fund-Raising Tag	~~0~~ [0-1]
Total:	~~12~~ [0-32]

[No change to subsection (e)]

Note: Authority cited: Sections 200, 202, 203, 220, 1050 and 4902, Fish and Game Code. Reference: Sections ~~200, 202, 203, 203.1, 207,~~ 1050, 3950 and 4902, Fish and Game Code.

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STATE OF CALIFORNIA
FISH AND GAME COMMISSION
INITIAL STATEMENT OF REASONS FOR REGULATORY ACTION
(Pre-Publication of Notice Statement)

Amend Section 363
Title 14, California Code of Regulations (CCR)
Re: Pronghorn Antelope

I. Date of Initial Statement of Reasons: October 12, 2015

II. Dates and Locations of Scheduled Hearings:

(a)	Notice Hearing:	Date:	December 10, 2015
		Location:	San Diego, CA
(b)	Discussion Hearings:	Date:	February 11, 2016
		Location:	Sacramento, CA
(c)	Adoption Hearing:	Date:	April 14, 2016
		Location:	Santa Rosa, CA

III. Description of Regulatory Action:

(a) Statement of Specific Purpose of Regulation Change and Factual Basis for Determining that Regulation Change is Reasonably Necessary:

1. Number of Tags

In accordance with management goals and objectives, and in order to maintain hunting quality, tag quotas for hunts need to be adjusted annually. Current regulations specify the number of pronghorn antelope hunting tags for the 2015 season. This proposed regulatory action will amend subsection 363(m) providing the number of tags for hunting in 2016.

Preliminarily, the tag numbers are presented as ranges (e.g., [0-3]) in the table in subsection 363(m) of the amended Regulatory Text. Final tag quotas for each zone will be identified and recommended to the Fish and Game Commission at the April 14, 2016, adoption hearing.

Ranges are necessary because final quotas cannot be determined until survey data is analyzed. Winter surveys are scheduled for January, 2016. Analysis of survey results will be completed by March, 2016. Final tag quotas will allow for a biologically appropriate harvest of bucks and does in the population and will achieve/maintain buck ratios at or above minimum levels specified in appropriate management plans. Administrative procedures and the Fish and Game Code require the Fish and Game Commission to receive proposed changes to existing regulations prior to the time winter pronghorn

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antelope surveys are completed. Final tag quotas for each zone will be identified and reported in the Final Statement of Reasons based upon findings from the annual winter surveys.

2. Minor Editorial Changes

The current regulations specify the Number of License Tags (i.e. quota) for each hunt in two places: within the hunt zone text itself (for example, subsection 363(a)(4)(A and B); and, the same quota appears in subsection 363 (m) Pronghorn Antelope Tag Allocations Table. In order to simplify, insure accuracy, and make clear, all references to Number of License Tags in the hunt zones 363(a) through (k) are deleted and the Table in 363(m) will remain.

Clarifying language regarding license possession and accompaniment by an adult chaperon is proposed for Lassen apprentice tag holders to be consistent with the other apprentice hunt information.

The regulations also propose replacing area boundary descriptions for the apprentice hunts with a reference to the general zone boundaries to reduce redundancy.

Minor editorial changes are also proposed for consistency in subsection numbering, spelling, grammar, and clarity.

(b) Authority and Reference:

Authority: Fish and Game Code sections 219, 220, 331, 1050 and 10502.

Reference: Fish and Game Code Sections 331, 713, 1050, 10500 and 10502.

(c) Specific Technology or Equipment Required by Regulatory Change:

None.

(d) Identification of Reports or Documents Supporting Regulation Change:

None.

(e) Public Discussions of Proposed Regulations Prior to Notice Publication:

Fish and Game Commission's Wildlife Resources Committee meeting held on September 9, 2015 in Fresno, California.

IV. Description of Reasonable Alternatives to Regulatory Action:

(a) Alternatives to Regulation Change:

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1. Number of Tags

No alternatives were identified. Pronghorn antelope license tag quotas must be changed periodically in response to a variety of biological and environmental conditions.

2. Minor Editorial Changes

No alternatives were identified.

(b) No Change Alternative:

1. Number of Tags

The no change alternative was considered and rejected because it would not attain project objectives of providing for hunting opportunities while maintaining pronghorn antelope populations within desired population objectives. Retaining the current tag quota for each zone may not be responsive to biologically-based changes in the status of various herds. Management plans specify minimum desired buck to doe ratios which are attained/maintained in part by modifying tag quotas on an annual basis. The no change alternative would not allow for adjustment of tag quotas in response to changing environmental/biological conditions.

2. Minor Editorial Changes

The no change alternative was considered and rejected because it would not attain consistency across or reduce redundancy in regulation.

(c) Consideration of Alternatives:

In view of information currently possessed, no reasonable alternative considered would be more effective in carrying out the purpose for which the regulation is proposed, would be as effective and less burdensome to affected private persons than the proposed regulation, or would be more cost effective to affected private persons and equally effective in implementing the statutory policy or other provision of law.

V. Mitigation Measures Required by Regulatory Action:

The proposed regulatory action will have no negative impact on the environment; therefore, no mitigation measures are needed. The maximum number of tags available in the newly proposed range is at or below the number of tags analyzed in the 2004 Final Environmental Document Regarding Pronghorn Antelope Hunting.

VI. Impact of Regulatory Action.

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This proposed action adjusts tag quotas for existing hunts. Given the number of tags available, and the area over which they are distributed, this proposal is economically neutral to business.

(a) Significant Statewide Adverse Economic Impact Directly Affecting Businesses, Including the Ability of California Businesses to Compete with Businesses in Other States.

The proposed action will not have a significant statewide adverse economic impact directly affecting business, including the ability of California businesses to compete with businesses in other states. The proposed action adjusts tag quotas for existing hunts. Considering the small number of tags issued over the entire state, this proposal is economically neutral to business.

(b) Impact on the Creation or Elimination of Jobs Within the State, the Creation of New Businesses or the Elimination of Existing Businesses, or the Expansion of Businesses in California; Benefits of the Regulation to the Health and Welfare of California Residents, Worker Safety, and the State's Environment:

The Commission anticipates benefits to the health and welfare of California residents. Hunting provides opportunities for multi-generational family activities and promotes respect for California's environment by the future stewards of the State's resources. The Commission anticipates benefits to the State's environment in the sustainable management of natural resources.

The proposed action will not have significant impacts on jobs or business within California and does not provide benefits to worker safety.

(c) Cost Impacts on Private Persons.

The agency is not aware of any cost impacts that a representative private person or business would necessarily incur in reasonable compliance with the proposed action.

(d) Costs or Savings to State Agencies or Costs/Savings in Federal Funding to the State: None.

(e) Other Nondiscretionary Costs/Savings to Local Agencies: None.

(f) Programs Mandated on Local Agencies or School District: None.

(g) Costs Imposed on Any Local Agency or School District that is Required to be Reimbursed under Part 7 (commencing with Section 17500) of Division 4: None.

(h) Effect on Housing Costs: None.

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VII. Economic Impact Analysis

The proposed action will have no statewide economic or fiscal impact because the proposed action would not constitute a significant change from the last pronghorn antelope season. The number of tags to be set in regulation for 2016 is intended to achieve or maintain the levels set forth in the approved management plans to preserve herd health and hunting opportunities in subsequent seasons.

(a) Effects of the regulation on the creation or elimination of jobs within the State:

The regulation will not affect the creation or elimination of jobs because no substantial changes in hunting activity are anticipated.

(b) Effects of the regulation on the creation of new businesses or the elimination of existing businesses within the State:

The regulation will not impact the creation of new businesses or the elimination of businesses because no substantial changes in hunting activity are anticipated.

(c) Effects of the regulation on the expansion of businesses currently doing business within the State

The regulation will not affect the expansion of businesses currently doing business within the State because no substantial changes in hunting activity are anticipated.

(d) Benefits of the regulation to the health and welfare of California residents:

The Commission anticipates benefits to the health and welfare of California residents. Hunting provides opportunities for multi-generational family activities and promotes respect for California's environment by the future stewards of the State's resources.

(e) Benefits of the regulation to worker safety.

The proposed regulation will not affect worker safety.

(f) Benefits of the regulation to the State's environment

It is the policy of the State to encourage the conservation, maintenance, and utilization of the living resources. The proposed action will further this core objective.

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INFORMATIVE DIGEST
(Policy Statement Overview)

Amend Section 363, Pronghorn Antelope, Title 14, California Code of Regulations (CCR).

In accordance with management goals and objectives, and in order to maintain hunting quality, tag quotas for Pronghorn Antelope hunts need to be adjusted annually. Current regulations specify the number of pronghorn antelope hunting tags for the 2015 season. This proposed regulatory action will amend subsection 363(m) providing the number of tags for hunting in 2016.

Preliminarily, the tag numbers are presented as ranges (e.g., [0-3]) in the table in subsection 363(m) of the amended Regulatory Text. Final tag quotas for each zone will be identified and recommended to the Fish and Game Commission at the April 14, 2016, adoption hearing.

Other minor changes to the regulatory text to reduce redundancy, improve accuracy and clarity are proposed.

Benefits of the regulations

The management plans specify objective levels for the herds. These ratios are maintained and managed in part by annually modifying the number of tags. The final values for the license tag numbers will be based upon findings from the population surveys.

Non-monetary benefits to the public

The Commission does not anticipate non-monetary benefits to the protection of public health and safety, worker safety, the prevention of discrimination, the promotion of fairness or social equity and the increase in openness and transparency in business and government.

Consistency with State or Federal Regulations

The Fish and Game Commission, pursuant to Fish and Game Code Sections 200, 202 and 203, has the sole authority to regulate pronghorn antelope hunting in California. Commission staff has searched the California Code of Regulations and has found the proposed changes pertaining to pronghorn antelope tag allocations are consistent with the provisions of Title 14. Therefore the Commission has determined that the proposed amendments are neither inconsistent nor incompatible with existing State regulations.

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REGULATORY TEXT

Section 363 is amended to read:

§ 363. Pronghorn Antelope.
The Lava Beds National Monument and Federal and State Game Refuges lying within the hunt boundary are closed to pronghorn antelope hunting, except for the state's Hayden Hill (1S) and Blacks Mountain (1F) game refuges in Lassen County and the Clear Lake National Wildlife Refuge in Modoc County. Refer to subsection 363(b)(5) for special conditions for permission to enter and hunt pronghorn antelope in the Clear Lake National Wildlife Refuge.
(a) Zone 1 - Mount Dome:

... [No changes to subsections 363(a)(1) through (3)]

~~(4) Number of License Tags:~~
~~(A) General Season: 0 buck tags and 0 doe tags.~~
~~(B) Archery Only Season: 0 buck tags and 0 doe tags.~~
(b) Zone 2 - Clear Lake:

... [No changes to subsections 363(b)(1) through (3)]

~~(4) Number of License Tags:~~
~~(A) General Season: 15 buck tags and 0 doe tags.~~
~~(B) Archery Only Season: 1 buck tags and 0 doe tags.~~
~~(5)~~ (4) Special Conditions: The special regulations regarding the Peninsula “U” portion of the Clear Lake National Wildlife Refuge are summarized as follows:

... [No changes to subsections 363(b)(5)(A) through (E)]

(c) Zone 3 - Likely Tables:

... [No changes to subsections 363(c)(1) through (3)]

~~(4) Number of License Tags:~~
~~(A) General Season: Period One: 40 buck tags and 0 doe tags. Period Two: 40 buck tags and 0 doe tags.~~
~~(B) Archery Only Season: 10 buck tags and 0 doe tags.~~
(d) Zone 4 - Lassen:

... [No changes to subsections 363(d)(1) through (3)]

~~(4) Number of License Tags:~~
~~(A) General Season: Period One: 45 buck tags and 0 doe tags. Period Two: 45 buck tags and 0 doe tags.~~
~~(B) Archery Only Season: 10 buck tags and 0 doe tags.~~
(e) Zone 5 - Big Valley:

... [No changes to subsections 363(e)(1) through (3)]

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~~(4) Number of License Tags:~~
~~(A) General Season: 20 buck tags and 0 doe tags.~~
~~(B) Archery Only Season: 1 buck tags and 0 doe tags.~~
(f) Zone 6 - Surprise Valley:

... [No changes to subsections 363(f)(1) through (3)]

~~(4) Number of License Tags:~~
~~(A) General Season: 10 buck tags and 0 doe tags.~~
~~(B) Archery Only Season: 1 buck tags.~~
(g) Big Valley Pronghorn Antelope Apprentice Hunt:
(1) Area: ~~Those portions of Modoc, Lassen, Shasta and Siskiyou counties within a line beginning at the intersection of Highway 299 and 89; north and northwest along Highway 89 to the Bartle-Telephone Flat Road; northeast along the Bartle-Telephone Flat Road to the Iodine Prairie-Long Bell Road; southeast along the Iodine Prairie-Long Bell Road to the North Main Road at Long Bell Forest Service Station; northeast along the North Main Road and the Mud Springs-Mud Lake Road to Modoc County Road 91; south along Modoc County Road 91 to the Happy Camp-Cottonwood Flat Road; southeast along the Happy Camp-Cottonwood Flat Road to the Cottonwood Flat-Canby Bridge Road; southeast along the Cottonwood Flat-Canby Bridge Road to Highway 299; south along Highway 299 to the Hunters Ridge-Sweagert Flat Road near Lower Rush Creek Recreation Site; east and south along the Hunters Ridge-Sweagert Flat Road to the Sweagert Flat-Hunsinger Draw Road; south and west along the Sweagert Flat-Hunsinger Draw Road to the Adin-Madeline Road; southeast along the Adin-Madeline Road to the Hunsinger Flat-Willow Creek Road; southeast and southwest along the Hunsinger Flat-Willow Creek Road to Highway 139; northwest along Highway 139 to the Hayden Hill-Snag Hill Road; south and southwest along the Hayden Hill-Snag Hill Road to the Boyd Hill-Dixie Valley Road; southeast along the Boyd Hill-Dixie Valley Road to the Dixie Valley-Coyote Canyon Road; southeast along the Dixie Valley-Coyote Canyon Road to the State Game Refuge 1S boundary; southeast along the State Game Refuge 1S boundary to U.S. Forest Service Road 35N06; south and west along U.S. Forest Service Road 35N06 to U.S. Forest Service Road 22; west along U.S. Forest Service Road 22 to Highway 89 near the Hat Creek Ranger Station; north along Highway 89 to Highway 299, to the point of beginning.~~ The tag shall be valid in the area described in subsection 363(e)(1).

... [No changes to subsections 363(g)(2) and (3)]

~~(4) Number of License Tags: 1 either-sex tags.~~
~~(5)~~ (4) Special Conditions: Tagholders wishing to hunt the Ash Creek Wildlife Area may contact Ash Creek Wildlife Area by telephone at (530) 294-5824, and shall attend an orientation meeting before hunting. Only persons possessing valid junior hunting licenses and apprentice hunt license tags may hunt during the pronghorn antelope apprentice hunt season in the Ash Creek Wildlife Area. Tagholders shall be accompanied by a nonhunting, licensed adult chaperon 18 years of age or older while hunting.
(h) Lassen Pronghorn Antelope Apprentice Hunt:

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(1) Area: ~~Those portions of Lassen, Plumas and Shasta counties within a line beginning at the junction of Highway 36 and the Juniper Lake Road in the town of Chester; north along the Juniper Lake Road to the Lassen National Park boundary; north and west along the Lassen National Park boundary to Highway 89; north along Highway 89 to U.S. Forest Service Road 22 near the Hat Creek Ranger Station; east along U.S. Forest Service Road 22 to U.S. Forest Service Road 35N06; east and north along U.S. Forest Service Road 35N06 to the State Game Refuge 1S boundary; northwest along the State Game Refuge 1S boundary to the Coyote Canyon-Dixie Valley Road; northwest along the Coyote Canyon-Dixie Valley Road to the Dixie Valley-Boyd Hill Road; northwest along the Dixie Valley-Boyd Hill Road to the Snag Hill-Hayden Hill Road; northeast and north along the Snag Hill-Hayden Hill Road to Highway 139; southeast on Highway 139 to the Willow Creek-Hunsinger Flat Road; northeast and northwest along the Willow Creek-Hunsinger Flat Road to the Adin-Madeline Road; southeast along the Adin-Madeline Road to Highway 395 at the town of Madeline; south along Highway 395 to the Madeline-Clarks Valley Road; east along the Madeline-Clarks Valley Road to the Clarks Valley-Tuledad Road; east and southeast along the Clarks Valley-Tuledad Road to the California-Nevada state line; south along the California-Nevada state line to the Lassen-Sierra county line; west along the Lassen-Sierra county line to the Lassen-Plumas county line; north and west along the Lassen-Plumas county line to Highway 36, west along Highway 36 to the Juniper Lake Road, to the point of beginning. The Honey Lake Wildlife Area shall not be open to antelope apprentice hunt tag holders.~~
The tag shall be valid in the area described in subsection 363(d)(1).

... [No changes to subsection 363(h)(2) and (3)

~~(4) Number of License Tags: 5 either-sex tags.~~
(4) Special Conditions: Tagholders must possess valid junior hunting licenses and apprentice hunt license tags. Tagholders shall be accompanied by a nonhunting, licensed adult chaperon 18 years of age or older while hunting. The Honey Lake Wildlife Area shall not be open to antelope apprentice hunt tag holders.
(i) Surprise Valley Pronghorn Antelope Apprentice Hunt:
(1) Area: ~~Those portions of Modoc and Lassen counties within a line beginning at the intersection of the crest of the Warner Mountains and the California-Oregon state line; east along the California-Oregon state line to the California-Nevada state line; south along the California-Nevada state line to the Tuledad-Clarks Valley Road; west and northwest along the Tuledad-Clarks Valley Road to the Clarks Valley-Long Valley Road; north on the Clarks Valley-Long Valley Road to the South Warner Road; east along the South Warner Road to the Summit Trail near Patterson Guard Station; north along the Summit Trail to the crest of the Warner Mountains at Pepperdine Camp; north along the crest of the Warner Mountains to the California-Oregon state line to the point of beginning.~~ The tag shall be valid in the area described in subsection 363(f)(1).

... [No changes to subsections 363(i)(2) and (3)]

(4) ~~Number of License Tags: 4 either-sex tags.~~
~~(5)~~ Special Conditions: Tagholders must possess valid junior hunting licenses and apprentice hunt license tags. Tagholders shall be accompanied by a nonhunting, licensed adult chaperon 18 years of age or older while hunting.
(j) Likely Tables Pronghorn Antelope Apprentice Hunt

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(1) Area: ~~Those portions of Modoc and Lassen counties within a line beginning at the junction of the Crowder Flat Road and the California-Oregon state line; east along the California-Oregon state line to the crest of the Warner Mountains; south along the crest of the Warner Mountains to the Summit Trail at Pepperdine Camp; south along the Summit Trail to the South Warner Road near Patterson Forest Service Station; west along the South Warner Road to the Long Valley-Clarks Valley Road; south along the Long Valley-Clarks Valley Road to the Clarks Valley-Madeline Road; west along the Clarks Valley-Madeline Road to Highway 395 at the town of Madeline; north along Highway 395 to the Madeline-Adin Road; northwest along the Madeline-Adin Road to the Hunsinger Draw-Sweagert Flat Road; east and north along the Hunsinger Draw-Sweagert Flat Road to the Sweagert Flat-Hunters Ridge Road; north and west along the Sweagert Flat-Hunters Ridge Road to Highway 299 near Lower Rush Creek Recreation Site; north along Highway 299 to the Canby Bridge-Cottonwood Flat Road; northwest along the Canby Bridge-Cottonwood Flat Road to the Cottonwood Flat-Happy Camp Road; northwest along the Cottonwood Flat-Happy Camp Road to Modoc County Road 91; north along Modoc County Road 91 to Highway 139; north along Highway 139 to the Hackamore-Sorholus Tank Road; northeast along the Hackamore-Sorholus Tank Road to the Browns Well-Badger Well Road; north along the Browns Well-Badger Well Road to the Badger Well-Deadhorse Flat Road; northeast and east along the Badger Well-Deadhorse Flat Road to the Mowitz-Blue Mountain Road; north and east along the Mowitz-Blue Mountain Road to Modoc County Road 136; east along Modoc County Road 136 to Modoc County Road 73; north along Modoc County Road 73 to the Crowder Flat Road; north along the Crowder Flat Road to the California-Oregon state line, to the point of beginning.~~ The tag shall be valid in the area described in subsection 363(c)(1).

... [No changes to subsections 363(j)(2) and (3)]

(4) ~~Number of License Tags: 5 either-sex tags.~~
~~(5)~~ Special Conditions: Tagholders must possess valid junior hunting licenses and apprentice hunt license tags. Tagholders shall be accompanied by a nonhunting, licensed adult chaperon 18 years of age or older while hunting.
(k) Fund-raising Hunt:

... [No changes to subsections 363(k)(1) through (3)]

~~(4) Number of License Tags: 2 buck tags.~~

... [No changes to subsection 363(*l*)]

(m) Pronghorn Antelope Tag Allocations Table.

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~~2015~~ 2016 Pronghorn Antelope Tag Allocations						
	Archery-Only Season		General Season			
Hunt Area	Buck	Doe	Buck	Doe	Buck	Doe
Zone 1 - Mount Dome	~~0~~ [0-10]	~~0~~ [0-3]	~~0~~ [0-60]	~~0~~ [0-20]	0	0
Zone 2 - Clear Lake	~~1~~ [0-10]	~~0~~ [0-3]	~~15~~ [0-80]	~~0~~ [0-25]	0	0
Zone 3 - Likely Tables	~~10~~ [0-20]	~~0~~ [0-7]	~~40~~ [0-150]	~~0~~ [0-50]	~~40~~ [0-130]	~~0~~ [0-50]
Zone 4 – Lassen	~~10~~ [0-20]	~~0~~ [0-7]	~~45~~ [0-150]	~~0~~ [0-50]	~~45~~ [0-130]	~~0~~ [0-50]
Zone 5 - Big Valley	~~1~~ [0-15]	~~0~~ [0-5]	~~20~~ [0-150]	~~0~~ [0-50]	0	0
Zone 6 - Surprise Valley	~~1~~ [0-10]	0	~~10~~ [0-25]	~~0~~ [0-7]	0	0
Likely Tables Apprentice Hunt	N/A		~~5~~ [0-15] Either Sex		0	
Lassen Apprentice Hunt	N/A		~~5~~ [0-15] Either Sex		0	
Big Valley Apprentice Hunt	N/A		~~1~~ [0-4] Either Sex		0	
Surprise Valley Apprentice Hunt	N/A		~~4~~ [0-5] Either Sex		0	
Fund-Raising Hunt	N/A		~~2~~ [0-10] Buck			

Note: Authority cited: Sections 219, 220, 331, 1050, Fish and Game Code. Reference: Sections 331, 713, and 1050, Fish and Game Code.

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STATE OF CALIFORNIA
FISH AND GAME COMMISSION
INITIAL STATEMENT OF REASONS FOR REGULATORY ACTION
(Pre-Publication of Notice Statement)

Amend Section 364
Title 14, California Code of Regulations (CCR)
Re: Elk Hunts

I. Date of Initial Statement of Reasons: November 6, 2015

II. Dates and Locations of Scheduled Hearings:

(a) Notice Hearing:	Date:	December 10, 2015
	Location:	San Diego, CA
(b) Discussion Hearings:	Date:	February 11, 2016
	Location:	Sacramento, CA
(c) Adoption Hearing:	Date:	April 14, 2016
	Location:	Santa Rosa, CA

III. Description of Regulatory Action:

(a) Statement of Specific Purpose of Regulation Change and Factual Basis for Determining that Regulation Change is Reasonably Necessary:

1. <u>It is necessary for the Fish and Game Commission (Commission) to improve the hunting regulations and make them more user-friendly.</u>

The current Elk Hunt regulations in Title 14, Section 364, are overly long and the current format makes it difficult to navigate to find pertinent hunting information. The Department of Fish and Wildlife (CDFW) is recommending placing a substantial amount of information from Section 364, which is currently in a narrative format, into a Table that is more easily reviewed by the public. The new table replaces two subparts in regulation: Number of License Tags in each hunt area and Season dates. Area descriptions and conditions will remain in narrative form.

For example, part of the current regulation in subsection 364(a) reads as follows:

§364. Elk.
(a) Department Administered General Methods Roosevelt Elk Hunts:
(1) Siskiyou Roosevelt Elk Hunt:
(A) Area: In that portion of Siskiyou County beginning at the junction of Interstate Highway 5 with the California-Oregon state line; east along the state line to Hill Road at Ainsworth Corner; south along Hill Road to Lava Beds National Monument Road; south along Lava Beds National Monument Road to USDA Forest Service Road 49; south along USDA Forest Service Road 49 to USDA Forest Service Road 77; west along

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USDA Forest Service Road 77 to USDA Forest Service Road 15 (Harris Spring Road); south along USDA Forest Service Road 15 to USDA Forest Service Road 13 (Pilgrim Creek Road); southwest along USDA Forest Service Road 13 to Highway 89; northwest along Highway 89 to Interstate Highway 5; north along Interstate Highway 5 to the point of beginning.
(B) Season: The season shall open on the Wednesday preceding the second Saturday in September and continue for 12 consecutive days.
(C) Number of License Tags: 20 bull tags and 20 antlerless tags.

Subparts (B) Season, and (C) Number of License Tags, are proposed to be moved to the new Table as shown in the example below:

§	**Hunt**	**1. Bull Tags**	**2. Antlerless Tags**	**3. Either-Sex Tags**	**4. Spike Tags**
		5. Season			
(r) Department Administered General Methods Roosevelt Elk Hunts					
(1)(A)	Siskiyou	20	20		
		Shall open on the Wednesday preceding the second Saturday in September and continue for 12 consecutive days.			

The complete Table and text is found in the attached amended Regulatory Text of Section 364.

2. Number of Tags.

In order to maintain appropriate harvest levels and hunting quality it is necessary to annually adjust quotas (total number of tags) in response to dynamic environmental and biological conditions. Current regulations in Section 364 specify elk license tag quotas for each hunt in accordance with management goals and objectives.

The proposed amendments will modify Section 364, adding new subsections 364(r) through (aa) in a Table which specifies the number of elk tags in each hunt type and area for the 2016 season. However, since the Department's final recommendations for quotas cannot be determined until winter survey data and harvest results are analyzed, the amendments to Section 364 will begin with a range of tags (expressed as [0-40], etc.). The final number of tags will be recommended to the Commission at the adoption hearing in April 2016.

The proposed ranges of elk tags for 2016 are presented in the amended Regulatory Text of Section 364.

3. Remove, Amend, and Establish New Hunt Areas:

The Department is recommending changes to the Hunt Areas as described in amended subsections 364(a)(1) through (d)(20). Some hunt areas are deleted, split into new hunt areas or boundaries changed as necessary to distribute

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hunting pressure, address landowner concerns over elk damage, and increase or decrease hunting opportunity. Boundary and Area changes are made while providing a biologically appropriate harvest within each zone in accordance with management goals and objectives.

(Note: The following text which is proposed for deletion (italicized) refers to the current subsection number. Text to be added or amended (normal type) refers to the new renumbered subsection. The referenced subsections appear in the same order as in the attached amended regulatory text.)

The following Hunt Areas are proposed for amendment:

364(a)(2) Big Lagoon Roosevelt Elk Hunt: (Deleted from regulation)

This hunt boundary is no longer being utilized and has been split and incorporated into the Del Norte and Humboldt Roosevelt Elk Hunts.

364(a)(3) Northwestern California Roosevelt Elk Hunt: (Deleted from regulation)

This hunt boundary is no longer being utilized and has been split and incorporated into the Del Norte and Humboldt Roosevelt Elk Hunts.

364(a)(4) Klamath Roosevelt Elk Hunt: (Deleted from regulation)

This hunt boundary is no longer being utilized and has been split and incorporated into the Del Norte and Humboldt Roosevelt Elk Hunts.

364(a)(5) Del Norte Roosevelt Elk Hunt: (Deleted from regulation)

This hunt boundary is no longer being utilized; this hunt area has been incorporated into the larger new Del Norte hunt area.

364(a)(2) Del Norte General Methods Roosevelt Elk Hunt: (Added to regulation)

Two new zones will be created by splitting the Northwestern Roosevelt elk zone (Del Norte and Humboldt). The establishment of these zones will allow the Department to manage hunting pressure in relation to elk distribution, increase opportunity, and obtain an appropriate harvest level.

364(a)(3) Humboldt General Methods Roosevelt Elk Hunt: (Added to regulation)

Two new zones will be created by splitting the Northwestern Roosevelt elk zone (Del Norte and Humboldt). The establishment of these zones will allow the Department to manage hunting pressure in relation to elk distribution, increase opportunity, and obtain an appropriate harvest level.

364(a)(6) Marble Mountains Roosevelt Elk Hunt: (Deleted from regulation)

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This area has been separated into two separate zones within Humboldt, Shasta, Siskiyou, and Trinity counties (Marble Mountain North and Marble Mountain South Roosevelt elk hunts).

364(a)(4) Marble Mountains North General Methods Roosevelt Elk Hunt: (Added to regulation)

Two new zones will be created by splitting the Marble Mountain Roosevelt elk zone (North and South). The establishment of these zones will allow the Department to manage hunting pressure in relation to elk distribution, increase opportunity, and obtain an appropriate harvest level.

364(a)(5) Marble Mountains South General Methods Roosevelt Elk Hunt: (Added to regulation)

Two new zones will be created by splitting the Marble Mountain Roosevelt elk zone (North and South). The establishment of these zones will allow the Department to manage hunting pressure in relation to elk distribution, increase opportunity, and obtain an appropriate harvest level.

364(c)(1) Mendocino Elk Hunt: (Deleted from regulation)

This area has been split and expanded into five separate zones within Mendocino County as follows:

364(c)(1) Mendocino North Coast General Methods Roosevelt/Tule Elk Hunt: (Added to regulation);
364(c)(2) Mendocino Middle Fork General Methods Roosevelt/Tule Elk Hunt: (Added to regulation);
364(c)(3) Mendocino Upper Russian River General Methods Roosevelt/Tule Elk Hunt: (Added to reg);
364(c)(4) Mendocino Little Lake General Methods Roosevelt/Tule Elk Hunt: (Added to regulation);
364(c)(5) Mendocino South Coast General Methods Roosevelt/Tule Elk Hunt: (Added to regulation):

It is proposed to split and expand the existing Mendocino Roosevelt/Tule elk hunt into five elk hunts within Mendocino County. Public opportunities to hunt elk are limited in Mendocino County. Sufficient numbers of elk occur within the proposed hunt boundaries to provide opportunity for the public to hunt elk. The establishment of these zones will allow the Department to distribute hunting pressure to address landowner concerns over elk damage and increase hunter opportunity while providing a biologically appropriate harvest within each zone

364(d)(2) La Panza General Methods Tule Elk Hunt: (Amend regulatory text)

Some of the area previously within the La Panza zone north of highway 198 will now be within the Fort Hunter Liggett Central Coast zone described in subsection

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364(d)(12). This is intended to better distribute harvest within these zones, increase opportunity, and address landowner concerns. The La Panza season framework will remain as previously identified.

364(d)(4) Independence General Methods Tule Elk Hunt: (Amend regulatory text)

It is proposed to split the Independence tule elk hunt area in Inyo County and establish a new tule elk zone (Goodale) in the Owens Valley. Sufficient numbers of elk occur within the proposed hunt boundary to provide opportunity for the public to hunt elk. Creating a new hunt boundary (splitting the zone) allows the Department to more appropriately manage harvest.

364(d)(5) Goodale General Methods Tule Elk Hunt: (Added to regulatory text)

In conjunction with zone boundary modifications for the Independence tule elk zone, a new zone (Goodale) is proposed to be created by dividing the zone. This new zone is being established to efficiently distribute hunting pressure and manage harvest.

364(d)(11) Grizzly Island General Methods Tule Elk Hunt: (Amend regulatory text)

The area description for Grizzly Island is proposed to be amended. Existing regulations specify boundaries for the Grizzly Island tule elk hunt. During the last several years elk population numbers have increased and their range has expanded beyond existing hunt boundaries. The modifications will expand the boundary to outside of the Grizzly Island Wildlife Area. The proposal to expand boundaries for the Grizzly Island tule elk hunt is necessary to improve hunter opportunity and implement an appropriate harvest level.

364(d)(11) Fort Hunter Liggett Tule Elk Hunt: (Deleted from regulation)

Public opportunities to hunt elk in Monterey, San Benito, and San Luis Obispo counties are currently limited to the lands within the boundary of the Fort Hunter Liggett Military base and a portion of the La Panza and San Luis Reservoir tule elk zones. To increase public hunting opportunity (military only remains within the perimeter of the base) the boundary is proposed to be expanded as set forth in 364(n)(12).

364(d)(12) Fort Hunter Liggett Central Coast General Public General Methods Tule Elk Hunt: (Added to regulatory text)

Public opportunities to hunt elk in Monterey, San Benito, and San Luis Obispo counties are currently limited to the lands within the confines of the Fort Hunter Liggett Military base and a portion of the La Panza and San Luis Reservoir tule elk zones. Tule elk populations have increased and their range has expanded beyond the existing hunt boundaries. The proposal increases the boundary for the Fort Hunter Liggett Central Coast zone to encompass areas not previously part of an established hunt zone except for the inclusion of the northern portion of the La Panza zone north of highway 198 to the boundary of the San Luis

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Reservoir tule elk zone. This will improve hunter opportunity, address expanding elk populations, and respond to landowner concerns. (Note: the military only hunts will remain within the exterior boundaries of the military base.)

364(d)(19) San Emigdio Mountain General Methods Tule Elk Hunt: (Added to regulatory text)

The proposed amendment establishes a new tule elk hunt in portions of Kern, San Luis Obispo, Santa Barbara, and Ventura Counties). Public opportunities to hunt elk have been limited or non-existent. Sufficient numbers of elk occur within the proposed hunt boundary to provide additional opportunity for the public to hunt elk.

364(d)(20) Camp Roberts General Methods Tule Elk Hunt: (Added to regulatory text)

The proposed amendment establishes a new tule elk hunt in portions of Monterey and San Luis Obispo Counties. Public opportunities to hunt elk have been limited. Sufficient numbers of elk occur within the proposed hunt boundary to provide additional opportunity for the public to hunt elk.

4. <u>Add New Opportunities for Specialized Hunts:</u>

The Department makes many different specialized hunts available to the public including Archery, Muzzleloader, and Apprentice hunts. Because of the proposed new hunt areas, some new opportunities will be made available:

364(e)(1) Siskiyou General Methods Roosevelt Elk Apprentice Hunt

364(e)(2) Marble Mountains North General Methods Roosevelt Elk Apprentice Hunt

364(e)(3) Marble Mountains South General Methods Roosevelt Elk Apprentice Hunt

364(e)(9) Fort Hunter Liggett Central Coast General Methods General Public Tule Elk Apprentice Hunt

364(f)(3) Goodale Tule Elk Archery Only Hunt

364(f)(7) Fort Hunter Liggett Central Coast General Public Tule Elk Archery Only Hunt

364(g)(3) Goodale Tule Elk Muzzleloader Only Hunt

364(g)(4) Fort Hunter Liggett Central Coast General Public Tule Elk Muzzleloader Only Hunt:

364(h)(1) Siskiyou Roosevelt Elk Muzzleloader/Archery Only Hunt

354(i)(2) Marble Mountains North Roosevelt Elk Muzzleloader/Archery Only Hunt

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364(i)(3) Marble Mountains South Roosevelt Elk Muzzleloader/Archery Only Hunt

364(j)(5) Camp Roberts Military Only Tule Elk Hunt

5. Modify Season Dates and Hunt Periods:

The Department makes many different times and seasons of the year available to the public. In order to provide opportunity for hunters, the Department modifies the calendar day for the start of hunts and the number of days of hunting. The new Table in subsections 364(r) through (aa) proposes the recommended days for each hunt.

These recommended changes will increase opportunity and address private property conflicts through the establishment of multiple hunt periods while maintaining an appropriate harvest level. Opportunity is also provided by separate hunting periods for bull, antlerless, either-sex, and spike elk.

In a number of hunt areas the elk population has increased substantially over the last several years. The proposed seasonal framework, additional hunt periods, and the proposed number of tags, are designed to safely distribute the additional hunting pressure while maintaining an appropriate level of harvest.

Due to military use constraints at Fort Hunter Liggett and Camp Roberts, hunt dates are subject to change from year to year and may be changed or cancelled by the base commander

6. Modifications to Hunt Area Special Conditions.

Current regulations require a hunter orientation in certain hunt areas prior to hunting. This requirement is not necessary in most areas since all pertinent information is sent to the successful tag purchaser (hunter) along with their tag. Tag holders are also provided contact numbers for local Department employees to answer any additional questions. Where required, the Special Conditions appear in regulation with the hunt area description.

Special Conditions for hunting on military installations appear in subsection (u) Fort Hunter Liggett Special Conditions; and, (v) Camp Roberts Special Conditions.

7. Minor Editorial Changes.

364(*l*)(4) Proposed amendments to this subsection clarify the definition of either-sex elk and make it clear that a spike elk is included within the definition of either-sex elk.

364(n) is proposed for deletion as it restates subsection (m).

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Other minor editorial changes are proposed for consistency in subsection numbering, spelling, grammar, and clarity.

a) Authority and Reference:

Authority: Fish and Game Code sections 200, 202, 203, 332 and 1050.
Reference: Fish and Game Code sections 332 and 1050.

(c) Specific Technology or Equipment Required by Regulatory Change: None.

(d) Identification of Reports or Documents Supporting Regulation Change:

2016 Draft Environmental Document Regarding Elk Hunting

(e) Public Discussions of Proposed Regulations Prior to Notice Publication:

Fish and Game Commission's Wildlife Resources Committee meeting held on September 9, 2015 in Fresno, California.

IV. Description of Reasonable Alternatives to Regulatory Action:

(a) Alternatives to Regulation Change:

1. Improve the hunting regulations and make them more user-friendly.

No alternatives were identified. The Department makes extensive use of Tables in regulations. Currently, tables are used in Section 362, Big Horn Sheep, 363 Antelope, and 364.1 SHARE Elk. Department publications use tables to provide information to the public in an easier format than written text.

2. Number of Tags

A recommendation was submitted 10/1/2014 by the Colusa County Fish and Game Commission. Request to increase elk hunting in Stonyford to control the growing size of the herd:

> Department staff met with the Colusa County Fish and Game Commission last year to discuss potential solutions. The Department has analyzed the potential for increased harvest in this zone in the Draft Environmental Document. Tag adjustments will be reviewed after surveys are complete. One of the limiting factors for this zone is access to private property for public elk hunters; currently there is very limited public land for elk hunters to access which contain elk. The newly adopted SHARE elk tags (Section 364.1) are a potential solution for allowing access to private lands for elk hunters. Depending on tag allocation for the general draw and analyzed harvest rates, SHARE elk tags may be available for landowners within the Priest Valley desiring to contract with the Department.

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Elk license tag quotas must be adjusted periodically in response to a variety of environmental and biological conditions including forage availability, population structure, and over-winter survival rates. Elk populations have increased and landowner conflicts have also escalated in several areas. Adjusting tag quotas provides for appropriate harvest levels within the zones.

3. Remove, Amend, and Establish New Hunt Areas:

   Public recommendation submitted 3/27/2014 by Howard Strohn. Request for better herd management of tule elk in Priest Valley:

   > With this rulemaking, the Department has recommended boundary modification which would include the Priest Valley elk herd within the proposed Fort Hunter Liggett Central Coast zone. This would potentially increase the number of landowner tags available. In addition to the proposed boundary modifications the Department has analyzed the potential for increased harvest for this zone in the Draft Environmental Document (DED). Tag adjustments will be reviewed after surveys are complete. In 2015 the Department implemented the SHARE elk tag (Section 364.1) as an option for landowners. Depending on tag allocation for the general draw and analyzed harvest rates, SHARE elk tags may be available for landowners within the Priest Valley desiring to contract with the Department.

   Not modifying boundaries would not allow the Department to appropriately manage the subgroups through existing harvest regulations. New hunt areas for San Emigdio Mountain and Camp Roberts elk zones are necessary because existing regulations provide no public elk hunting opportunity in these areas. These areas currently maintain adequate numbers of elk to support a limited harvest. Establishing (new) tule elk hunts in these areas is proposed to improve hunter opportunity and provide an appropriate harvest level.

4. <u>Add New Opportunities for Specialized Hunts:</u>

   No alternatives were identified. Not modifying opportunity for special hunts would not allow the Department to appropriately manage the subgroups through existing harvest regulations.

5. Modify Season Dates and Hunt Periods:

   No alternatives were identified. The Department makes many different times and seasons of the year available to the public. In order to provide opportunity for each group, the Department modifies the calendar day for the start of hunts and the number of days of hunting.

   Due to military use constraints at Fort Hunter Liggett and Camp Roberts, hunt dates are subject to change from year to year and may be changed or cancelled by the base commander.

6. Modifications to Hunt Area Special Conditions.

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No alternatives were identified. Current regulations require a hunter orientation in certain hunt areas prior to hunting. Where required, the Special Conditions appear in regulation with the hunt area description.

(b) No Change Alternative:

The no-change alternative was considered and rejected because it would not attain project objectives. Elk hunts and opportunity must be adjusted periodically in response to a variety of environmental and biological conditions including forage availability, population structure, and over-winter survival rates. Elk populations have increased and landowner conflicts have also escalated in several areas. Adjusting tag quotas provides for appropriate harvest levels within the hunt zones.

(c) Consideration of Alternatives:

In view of information currently possessed, no reasonable alternative considered would be more effective in carrying out the purpose for which the regulation is proposed, would be as effective and less burdensome to affected private persons than the proposed regulation, or would be more cost effective to affected private persons and equally effective in implementing the statutory policy or other provision of law.

V. Mitigation Measures Required by Regulatory Action:

The proposed regulatory action will have no negative impact on the environment; therefore, no mitigation measures are needed. The number of tags that will be issued from the newly proposed tag range will result in a harvest that is at or below the harvest analyzed in the 2016 Draft Environmental Document Regarding Elk hunting.

VI. Impact of Regulatory Action:

This proposed action adjusts tag quotas, modifies existing hunt zones, and creates new zones to increase hunting opportunities for the public. Given the number of tags available, and the area over which they are distributed, this proposal is economically neutral to business.

(a) Significant Statewide Adverse Economic Impact Directly Affecting Businesses, Including the Ability of California Businessmen to Compete with Businesses in Other States.

The proposed action will not have a significant statewide adverse economic impact directly affecting business, including the ability of California businesses to compete with businesses in other states. Considering the relatively small number of tags issued over the entire state, this proposal is economically neutral to business.

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(b) Impact on the Creation or Elimination of Jobs Within the State, the Creation of New Businesses or the Elimination of Existing Businesses, or the Expansion of Businesses in California; Benefits of the Regulation to the Health and Welfare of California Residents, Worker Safety, and the State's Environment:

The Commission anticipates benefits to the health and welfare of California residents. Hunting provides opportunities for multi-generational family activities and promotes respect for California's environment by the future stewards of the State's resources. The Commission anticipates benefits to the State's environment in the sustainable management of natural resources.

The proposed action will not have significant impacts on jobs or business within California and does not provide benefits to worker safety.

(c) Cost Impacts on Representative Private Persons/Business.

The Commission is not aware of any cost impacts that a representative private person or business would necessarily incur in reasonable compliance with this proposed action.

(d) Costs or Savings to State Agencies or Costs/Savings in Federal Funding to the State: None.

(e) Other Nondiscretionary Costs/Savings to Local Agencies: None.

(f) Programs Mandated on Local Agencies or School Districts: None.

(g) Costs Imposed on Any Local Agency or School District that is Required to be Reimbursed under Part 7 (commencing with Section 17500) of Division 4: None.

(h) Effect on Housing Costs: None.

VII. Economic Impact Assessment

The proposed action will have no statewide economic or fiscal impact because the proposed action would not constitute a significant change from the 2015 elk season. The number of tags to be set in regulation for 2016 is intended to achieve or maintain the levels set forth in the approved management plans to sustainably manage elk populations and maintain hunting opportunities in subsequent seasons.

(a) Effects of the regulation on the creation or elimination of jobs within the State:

The regulation will not affect the creation or elimination of jobs because no significant changes in hunting activity levels are anticipated.

(b) Effects of the regulation on the creation of new businesses or the elimination of existing businesses within the State:

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The regulation will not impact the creation of new businesses or the elimination of businesses because no significant changes in hunting activity levels are anticipated.

(c) Effects of the regulation on the expansion of businesses currently doing business within the State

The regulation will not affect the expansion of businesses currently doing business within the State because no significant changes in hunting activity levels are anticipated.

(d) Benefits of the regulation to the health and welfare of California residents:

The proposed regulation will benefit the health and welfare of California residents. Hunting provides opportunities for multi-generational family activities and promotes respect for California's environment by the future stewards of the State's resources and the action contributes to the sustainable management of natural resources.

(e) Benefits of the regulation to worker safety.

The proposed regulation will not affect worker safety.

(f) Benefits of the regulation to the State's environment

It is the policy of the State to encourage the conservation, maintenance, and utilization of the State's living resources. The proposed action will further this core objective.

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INFORMATIVE DIGEST
(Policy Statement Overview)

Existing regulations in Section 364, Title 14, CCR, specify elk license tag quotas for each hunt. In order to achieve elk herd management goals and objectives and maintain hunting quality, it is periodically necessary to adjust quotas, seasons, hunt areas and other criteria, in response to dynamic environmental and biological conditions. The proposed amendments to Section 364 will establish 2016 tag quotas within each hunt adjusting for annual fluctuations in population number, season dates and tag distribution.

The complete amended text is found in the amended Regulatory Text of Section 364 with the Initial Statement of Reasons.

Proposed Amendments:

1. The current Elk Hunt regulations in Title 14, Section 364, are overly long and the format makes it difficult to navigate to find pertinent hunting information. The Department of Fish and Wildlife (Department) is recommending placing a substantial amount of information from Section 364 in a Table to improve the hunting regulations and make them more user-friendly.

2. In order to achieve appropriate harvest levels and maintain hunting quality it is necessary to annually adjust quotas (total number of tags) in response to dynamic environmental and biological conditions. Section 364 regulations specify elk license tag quotas for each hunt in accordance with management goals and objectives.

3. Remove, Amend, and Establish New Hunt Areas. The Department is recommending changes to the Hunt Areas as described in amended subsections 364(a)(1) through (d)(20).

4. Add New Opportunities for Specialized Hunts. The Department makes many different specialized hunts available to the public including Archery, Muzzleloader, and Apprentice hunts. Because of the new areas added, some new opportunities will be made available.

5. Modify Season Dates and Hunt Periods. The Department makes many different times and seasons of the year available to the public. In order to provide opportunity for hunters, the Department modifies the calendar day for the start of individual hunts and the number of days of hunting. The new Table sets forth the recommended days for each hunt.

6. Modifications to Hunt Area Special Conditions.

   Current regulations require a hunter orientation in certain hunt areas prior to hunting. This requirement is not necessary in most areas since all pertinent information is sent to the successful tag purchaser (hunter) along with their tag. Tag holders are also provided contact numbers for local Department employees to answer any additional questions. Where required, the Special Conditions appear in regulation

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with the hunt area description. Special Conditions for hunting on military installations appear in new subsections (p) Fort Hunter Liggett Special Conditions; and, (q) Camp Roberts Special Conditions.

7. Minor Editorial Changes are proposed to improve clarity and reduce redundancy.

Benefits of the regulations

The proposed regulations will contribute to the sustainable management of elk populations in California. Existing elk herd management goals specify objective levels for the proportion of bulls in the herds. These ratios are maintained and managed in part by annually modifying the number of tags. The final values for the license tag numbers will be based upon findings from annual harvest and herd composition counts where appropriate.

Non-monetary benefits to the public

The Commission does not anticipate non-monetary benefits to the protection of public health and safety, worker safety, the prevention of discrimination, the promotion of fairness or social equity and the increase in openness and transparency in business and government.

Consistency with State or Federal Regulations

The Fish and Game Commission, pursuant to Fish and Game Code Sections 200, 202 and 203, has the sole authority to regulate elk hunting in California. Commission staff has searched the California Code of Regulations and has found the proposed changes pertaining to elk tag allocations are consistent with Title 14. Therefore the Commission has determined that the proposed amendments are neither inconsistent nor incompatible with existing State regulations.

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REGULATORY TEXT

Section 364 is amended to read as follows:

§364. Elk Hunts, Seasons, and Number of Tags

(a) Department Administered General Methods Roosevelt Elk Hunt Areas.
(1) Siskiyou General Methods Roosevelt Elk Hunt:
(A) Area: In that portion of Siskiyou County beginning at the junction of Interstate Highway 5 with the California-Oregon state line; east along the state line to Hill Road at Ainsworth Corner; south along Hill Road to Lava Beds National Monument Road; south along Lava Beds National Monument Road to USDA Forest Service Road 49; south along USDA Forest Service Road 49 to USDA Forest Service Road 77; west along USDA Forest Service Road 77 to USDA Forest Service Road 15 (Harris Spring Road); south along USDA Forest Service Road 15 to USDA Forest Service Road 13 (Pilgrim Creek Road); southwest along USDA Forest Service Road 13 to Highway 89; northwest along Highway 89 to Interstate Highway 5; north along Interstate Highway 5 to the point of beginning.
~~(B) Season: The season shall open on the Wednesday preceding the second Saturday in September and continue for 12 consecutive days.~~
~~(C) Number of License Tags: 20 bull tags and 20 antlerless tags.~~
~~(2) Big Lagoon Roosevelt Elk Hunt:~~
~~(A) Area: In that portion of Humboldt County owned or leased by the California Redwood Company and the Green Diamond Resource Company within a line beginning at the intersection of Highway 101 and Hiltons Road; south on Hiltons Road to the western boundary of Redwood National Park; south and east along the western to its southern tip; north and east along the eastern boundary of Redwood National Park to Redwood Creek; south along Redwood Creek to Highway 299; east along Highway 299 to Forest Service Road 1; south along Forest Service Road 1 to Roddiscraft Road; west along Roddiscraft Road to the intersection of Snow Camp Road and the power line road within the right-of-way of Humboldt-Trinity 115 Line and Trinity-Maple Creek 60 Line power line; west along the power line road within the right-of-way of the Humboldt-Trinity 115 Line and Trinity-Maple Creek 60 Line to Maple Creek Road; south along Maple Creek Road to Butler Valley Road; west along Butler Valley Road to Fickle Hill Road; north along Fickle Hill Road to Bayside Road; west along Bayside Road and 7th Street to Highway 101; north along Highway 101 to point of beginning.~~
~~(B) Season: The season shall open the last Wednesday in August and continue for 10 consecutive days.~~
~~(C) Number of License Tags: 0 bull tags and 0 antlerless tags.~~
~~(D) Special Conditions: All tagholders will be required to attend a mandatory orientation. Tagholders will be notified of the time and location of the orientation meeting after receipt of their elk license tags.~~
~~(3) Northwestern California Roosevelt Elk Hunt:~~
~~(A) Area: In those portions of Humboldt and Del Norte counties within a line beginning at the intersection of Highway 299 and Highway 96, north along Highway 96 to the Del~~

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~~Norte-Siskiyou county line, north along the Del Norte-Siskiyou county line to the California-Oregon state line, west along the state line to the Pacific Coastline, south along the Pacific coastline to the Humboldt-Mendocino county line, east along the Humboldt-Mendocino county line to the Humboldt-Trinity county line, north along the Humboldt-Trinity county line to Highway 299, west along Highway 299 to the point of beginning, excluding those areas owned or leased by the California Redwood Company and the Green Diamond Resource Company within existing elk hunt boundaries as described in subsections 364(a)(2)(A), (a)(4)(A), and (a)(5)(A).~~

~~(B) Season: The season shall open on the first Wednesday in September and continue for 23 consecutive days.~~

~~(C) Number of License Tags: 0 bull tags, 0 antlerless tags, and 45 either-sex tags.~~

~~(4) Klamath Roosevelt Elk Hunt:~~

~~(A) Area: Those portions of Humboldt and Del Norte counties owned or leased by the Green Diamond Resource Company within a line beginning at the intersection of Highway 101 and the Klamath River; south on Highway 101 to South Klamath Beach Road; west on South Klamath Beach Road to the Redwood National Park boundary; southwest and south along the Redwood National Park boundary to Highway 101; south on Highway 101 to the Redwood National Park boundary; southeast along the Redwood National Park boundary to the Bald Hills Road; southeast along the Bald Hills Road to the Klamath River; northwest along the Klamath River to the point of beginning.~~

~~(B) Season: The season shall open on the first Wednesday in September and continue for 10 consecutive days.~~

~~(C) Number of License Tags: 0 bull tags and 0 antlerless tags.~~

~~(D) Special Conditions: All tagholders will be required to attend a mandatory orientation. Tagholders will be notified of the time and location of the orientation meeting after receipt of their elk license tags.~~

~~(5)~~ (2) Del Norte General Methods Roosevelt Elk Hunt:

(A) Area: ~~Those portions of Del Norte County owned or leased by the Green Diamond Resource Company within a line beginning at the intersection of Highway 101 and the California-Oregon state line; south along Highway 101 to North Bank Road; southeast along North Bank Road to High Divide Road; northeast along High Divide Road to North Fork Smith River/Wimer Road; north along North Fork Smith River/Wimer Road to the California Oregon state line; west along the California-Oregon state line to the point of beginning.~~ In those portions of Del Norte County within a line beginning at the intersection of the California-Oregon state line and the Del Norte Siskiyou County line; south along the Del Norte County line to the intersection of the Siskiyou-Humboldt county lines; west along the Del Norte County Line to the Pacific coastline; north along the Pacific coastline to the Oregon-California border; east along the border to the intersection with the Del Norte-Siskiyou County line at the point of beginning.

~~(B) Season: The season shall open on the last Wednesday in August and continue for 10 consecutive days.~~

~~(C) Number of License Tags: 0 bull tags and 0 antlerless tags.~~

~~(D) Special Conditions: All tagholders will be required to attend a mandatory orientation. Tagholders will be notified of the time and location of the orientation meeting upon receipt of their elk license tags.~~

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(3) Humboldt General Methods Roosevelt Elk Hunt:
(A) Area: In those portions of Humboldt and Trinity counties within a line beginning at the intersection of the Del Norte, Humboldt, and Siskiyou county lines; south along Forest Service Road 12N12 (Cedar Camp Road) to the intersection of Forest Service Road 11N05 (Slate Creek Road); south along Forest Service Road 11N05 (Slate Creek Road) to the intersection of Highway 96; south along Highway 96 to Highway 299; south along Highway 299 to the Intersection of the South Fork of the Trinity River; south along the South Fork of the Trinity River to the intersection of Highway 36; west along Highway 36 to the Humboldt-Trinity county lines; south along the Humboldt -Trinity County line to the intersection of the Humboldt-Mendocino County line; west along the Mendocino County line to the Pacific Coast; north along the Pacific coast to the Humboldt-Del Norte County line; east along the Humboldt County line to the intersection of the Humboldt-Del Norte-Siskiyou County lines at the point of beginning.
~~(6)~~ (4) Marble Mountains North General Methods Roosevelt Elk Hunt:
(A) Area: ~~In those portions of Humboldt, Tehama, Trinity, Shasta and Siskiyou counties beginning at the intersection of Interstate Highway 5 and the California-Oregon state line; west along the state line to the Del Norte County line; south along the Del Norte County line to the intersection of the Siskiyou-Humboldt county lines; east along the Siskiyou-Humboldt county lines to Highway 96; south along Highway 96 to Highway 299; south along Highway 299 to the Intersection of the Humboldt/Trinity County line; south along the Humboldt Trinity County Line to the intersection of Highway 36; east along Highway 36 to the intersection of Interstate 5;north on Interstate Highway 5 to the point of beginning.~~ In those portions of Humboldt and Siskiyou counties beginning at the intersection of Interstate Highway 5 and the California-Oregon state line; west along the state line to the Del Norte County line; south along the Del Norte County line to the intersection of the Siskiyou-Humboldt county lines; south along Forest Service Road 12N12 (Cedar Camp Road) to the intersection of Forest Service Road 11N05 (Slate Creek Road); south along Forest Service Road 11N05 (Slate Creek Road) to the intersection of Highway 96; north along Highway 96 to the intersection of Salmon River Road; east along Salmon River Road to the intersection of Cecilville Road in the town of Forks of Salmon; east along Cecilville Road to the intersection of Highway 3 in the town of Callahan; south along Highway 3 to the intersection of Gazelle Callahan Road; east along Gazelle Callahan Road to the intersection of Old Highway 99 in the town of Gazelle; south along Old Highway 99 to the intersection of Interstate Highway 5; north on Interstate Highway 5 to the point of beginning.
~~(B) Season: The season shall open on the Wednesday preceding the second Saturday in September and continue for 12 consecutive days.~~
~~(C) Number of License Tags: General Season: 35 bull tags and 10 antlerless tags.~~
(5) Marble Mountains South General Methods Roosevelt Elk Hunt:
(A) Area: In those portions of Humboldt, Tehama, Trinity, Shasta, and Siskiyou counties beginning at the intersection of Interstate Highway 5 and Highway 36; north along Interstate 5 to the intersection of Old Highway 99 near the town of Edgewood; north along Old Highway 99 to the intersection of the Gazelle Callahan road in the town of Gazelle; west along Gazelle Callahan Road to the intersection of Highway 3; west along Highway 3 to the intersection of Cecilville Road in the town of Callahan; west along

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Cecilville Road to the intersection of Salmon river Road at Forks of Salmon; North and West along Salmon River Road to the intersection of Highway 96 near Somes Bar; south along Highway 96 to Highway 299; south along Highway 299 to the Intersection of the South Fork of the Trinity River; south along the South Fork of the Trinity River to the intersection of Highway 36; east along Highway 36 to the intersection of Interstate 5;north on Interstate Highway 5 to the point of beginning.

(b) Department Administered General Methods Rocky Mountain Elk Hunts:

(1) Northeastern California General Methods Rocky Mountain Elk Hunt:

(A) Area: Those portions of Siskiyou, Modoc, Lassen, and Shasta counties within a line beginning in Siskiyou County at the junction of the California-Oregon state line and Hill Road at Ainsworth Corner; east along the California-Oregon state line to the California-Nevada state line; south along the California-Nevada state line to the Tuledad-Red Rock-Clarks Valley Road (Lassen County Roads 506, 512 and 510); west along the Tuledad-Red Rock-Clarks Valley Road to Highway 395 at Madeline; west on USDA Forest Service Road 39N08 to the intersection of Highway 139/299 in Adin; south on Highway 139 to the intersection of Highway 36 in Susanville; west on Highway 36 to the intersection of Interstate 5 in Red Bluff; north on Interstate 5 to Highway 89; southeast along Highway 89 to USDA Forest Service Road 13 (Pilgrim Creek Road); northeast along USDA Forest Service Road 13 to USDA Forest Service Road 15 (Harris Spring Road); north along USDA Forest Service Road to USDA Forest Service Road 77; east along USDA Forest Service Road 77 to USDA Forest Service Road 49; north along USDA Forest Service Road 49 to Lava Beds National Monument Road; north along Lava Beds National Monument Road to Hill Road; north along Hill Road to the point of beginning.

~~(B) Season: The season shall open on the Wednesday preceding the third Saturday in September and continue for 12 consecutive days.~~

~~(C) Number of License Tags: 15 bull tags and 10 antlerless tags.~~

(c) Department Administered General Methods Roosevelt/Tule Elk Hunts:

(1) Mendocino North Coast General Methods Roosevelt/Tule Elk Hunt:

(A) Area: Those portions in Mendocino County within a line beginning at the Pacific Coastline and the Mendocino/Humboldt County line south of Shelter Cove; ~~east along the Mendocino/Humboldt County line to the intersection of the Humboldt, Mendocino, and Trinity County lines; south and east along the Mendocino/Trinity County line to the intersection of the Mendocino, Trinity, and Tehama County lines; south along the Mendocino County line to the intersection of Highway 20; north and west along Highway 20 to the intersection of Highway 101 near Calpella; south along Highway 101 to the intersection of Highway 253; southwest along Highway 253 to the intersection of Highway 128; north along Highway 128 to the intersection of Mountain View Road near the town of Boonville; west along Mountain View Road to the intersection of Highway 1; south along Highway 1 to the intersection of the Garcia River; west along the Garcia River to the Pacific Coastline; north along the Pacific Coastline to the point of beginning.~~ proceed east along the Mendocino- Humboldt-Trinity County line to its intersection with the Eel River Main stem; proceed south along the Eel River Main stem to confluence of Outlet Creek and the State Highway 162 crossing; west on State Highway 162 to the intersection with State Highway 101, south on State Highway 101 to its intersection with

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State Highway 20 (Willits); west on State Highway 20 to the intersection with State Highway 1; north on State Highway 1 to the intersection of the Noyo River; west along the Noyo River to the Pacific Coast and north along with Pacific Coast to the Mendocino- Humboldt County line point of beginning.

~~(B) Season: The season shall open on the Wednesday preceding the fourth Saturday in September and continue for 12 consecutive days.~~

~~(C) Number of License Tags: 2 bull tags and 2 antlerless tags.~~

(2) Mendocino Middle Fork General Methods Roosevelt/Tule Elk Hunt:

(A) Area: Those portions in Mendocino County within a line beginning at the Eel River Main stem intersection with the Mendocino-Trinity County line; east along the Mendocino-Trinity County line to the intersection with the Mendocino-Tehama County line; south along the Mendocino County line (Glenn–Lake County) to its junction with the Eel River Main stem; north along the Eel River Main stem to its intersection with Mendocino-Trinity County line point of beginning.

(3) Mendocino Upper Russian River General Methods Roosevelt/Tule Elk Hunt:

(A) Area: Those portions in Mendocino County within a line beginning at East Road intersection with State Highway 20 (Redwood Valley) proceed north on East Road to Tomki Road and continue to Hearst Road/Willits-Hearst Road east to the Eel River Main stem; follow the Eel River Main stem east to the Mendocino-Lake County line; than south along the Mendocino-Lake County line to its junction with State Highway 20; west on State Highway 20 to the East Road intersection (Redwood Valley) point of beginning.

(4) Mendocino Little lake General Methods Roosevelt/Tule Elk Hunt:

(A) Area: Those portions in Mendocino County within a line beginning at State Highway 101\State Highway 20 intersection Redwood Valley – proceed north on State Highway 101 to the intersection with State Highway 162; proceed east on State Highway 162 to its intersection with the Eel River Main stem; following the Eel River Main stem south to its intersection with the Hearst Road/Willits-Hearst Road bridge; west along the Willits-Hearst Road to its intersection with Tomki Road; south on Tomki Road to its intersection with East Road (Redwood Valley); East Road south to its intersection with State Highway 20; west to intersection with State Highway 101 at the point of beginning.

(5) Mendocino South Coast General Methods Roosevelt/Tule Elk Hunt:

(A) Area: Those portions in Mendocino County within a line beginning at the intersection of the Noyo River and the Pacific Ocean (Noyo Bay). Continue east on the Noyo River to the intersection with State Highway 1. South on State Highway 1 to the intersection of State Highway 20 (Noyo- Fort Bragg); proceed east on State Highway 20 to its intersection with State Highway 101 (Willits); south on State Highway 101 to its intersection with State Highway 20 (Redwood Valley) proceed east to the Mendocino-Lake County line; south along the Mendocino-Lake County line to the Mendocino-Sonoma County line; west along the Mendocino-Sonoma County line to the Pacific Ocean; north along the Pacific Ocean to the intersection with the Noyo River at the point of beginning.

(d) Department Administered General Methods Tule Elk Hunts

(1) Cache Creek General Methods Tule Elk Hunt:

(A) Area: Those portions of Lake, Colusa and Yolo counties within the following line: beginning at the junction of Highway 20 and Highway 16; south on Highway 16 to Reiff-Rayhouse Road; west on Reiff-Rayhouse Road to Morgan Valley Road; west on

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Morgan Valley Road to Highway 53; north on Highway 53 to Highway 20; east on Highway 20 to the fork of Cache Creek; north on the north fork of Cache Creek to Indian Valley Reservoir; east on the south shore of Indian Valley Reservoir to Walker Ridge-Indian Valley Reservoir Access Road; east on Walker Ridge-Indian Valley Reservoir Access Road to Walker Ridge Road; south on Walker Ridge Road to Highway 20; east on Highway 20 to the point of beginning.

~~(B) Season:~~

~~1. The Bull season shall open on the second Saturday in October and continue for 16 consecutive days.~~

~~2. The Antlerless season shall open on the third Saturday in October and continue for 16 consecutive days.~~

~~(C) Number of License Tags: 3 bull tags and 3 antlerless tags.~~

~~(D)~~ (B) Special Conditions: All tagholders will be required to attend a mandatory orientation. Tagholders will be notified of the time and location of the orientation meeting after receipt of their elk license tags.

(2) La Panza General Methods Tule Elk Hunt:

(A) Area: ~~In those portions of San Luis Obispo, Kern, Monterey, Kings, Fresno, San Benito, and Santa Barbara counties within a line beginning in San Benito County at the junction of Highway 25 and County Highway J1 near the town Pacines, south along Highway 25 to La Gloria road, west along La Gloria road, La Gloria road becomes Gloria road, west along Gloria road to Highway 101 near Gonzales, south along Highway 101 to Highway 166 in San Luis Obispo County; east along Highway 166 to Highway 33 at Maricopa in Kern County; north and west along Highway 33 to Highway 198 at Coalinga in Fresno County, north along Highway 33 to Interstate 5 in Fresno County, north along Interstate 5 to Little Panoche road/County Highway J1, southwest along Little Panoche road/County Highway J1 to the intersection of Little Panoche road/County Highway J1 and Panoche road/County Highway J1 in San Benito County, northwest along Panoche road/County Highway J1 to the point of beginning.~~

In those portions of San Luis Obispo, Kern, Monterey, Kings, Fresno, and Santa Barbara counties within a line beginning in Monterey County at the junction of Highway 198 and Highway 101; south along Highway 101 to the northern boundary of Camp Roberts California Army National Guard Base near the town of Bradley; northeast and then south along the northern and eastern boundaries of Camp Roberts to Highway 101 in San Luis Obispo County; south along Highway 101 to Highway 46; south and west along Highway 46 to Highway 1; south along Highway 1 to Nikki Beach Drive south of the town of Harmony; southwest along Nikki Beach Drive to the southern boundary of Section 19, Township 28S, Range 9E; west along the southern boundary of Section 19, Township 28S, Range 9E to the Pacific Coastline; south and east along the Pacific Coastline to the mouth of the Santa Maria River in Santa Barbara County; east along the Santa Maria River to Highway 101 near Santa Maria; north on Highway 101 to Highway 166; east along Highway 166 to Highway 33 at Maricopa in Kern County; north along Highway 33 to Highway 198 at Coalinga in Fresno County; west along Highway 198 to Parkfield Grade Road/Parkfield Coalinga Road near Parkfield Junction; south along Parkfield Grade Road/Parkfield Coalinga Road to the intersection with the Fresno-Monterey County Line; north along the Fresno-Monterey County Line to the

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intersection of Smith Mountain Lookout road; south and west along Smith Mountain Lookout road to the intersection with Slack Canyon Road; north and west along Slack Canyon road to Peach Tree Road; north along Peach Tree Road to the Junction of Highway 198; west along Highway 198 to the point of beginning.

~~(B) Season:~~

~~1. Period One: The season shall open on the second Saturday in October and extend for 23 consecutive days.~~

~~2. For Period Two: the season shall open on the second Saturday in November and extend for 23 consecutive days.~~

~~(C) Number of License Tags:~~

~~1. Period One: 6 bull tags and 5 antlerless tags.~~

~~2. Period Two: 6 bull tags and 6 antlerless tags.~~

~~(D)~~ (B) Special Conditions: All tagholders will be required to attend a mandatory orientation. Tagholders will be notified of the time and location of the orientation meeting upon receipt of their elk license tags.

(3) Bishop General Methods Tule Elk Hunt:

(A) Area: In that portion of Inyo County beginning at the junction of Highway 395 and Highway 6 in the town of Bishop; north and east along Highway 6 to the junction of Silver Canyon Road; east along Silver Canyon Road to the White Mountain Road (Forest Service Road 4S01); south along the White Mountain Road to Highway 168 at Westgard Pass; south and west along Highway 168 to the junction of Highway 395; north on Highway 395 to the point of beginning.

~~(B) Season:~~

~~1. Period Three: The season shall open on the third Saturday in October and extend for 9 consecutive days.~~

~~2. Period Four: The season shall open on the first Saturday in November and extend for 9 consecutive days.~~

~~3. Period Five: The season shall open on the first Saturday in December and continue for 9 consecutive days.~~

~~(C) Number of License Tags:~~

~~1. Period Three: 2 bull tags and 0 antlerless tags.~~

~~2. Period Four: 0 bull tags and 0 antlerless tags.~~

~~3. Period Five: 0 bull tags and 0 antlerless tags.~~

(4) Independence General Methods Tule Elk Hunt:

(A) Area: In that portion of Inyo County beginning at the junction of Highway 395 and Aberdeen Station Road; east on Aberdeen Station Road to its terminus at the southern boundary of Section 5, Township 11S, Range 35E; east along the southern boundary of sections 5, 4, 3, and 2, Township 11S, Range 35E to the Papoose Flat Road at Papoose Flat; south and east on Papoose Flat Road to Mazourka Canyon Road; south and then west on Mazourka Canyon Road to Highway 395; ~~west along Onion Valley Road to the intersection of the Section 25 Township 13S, Range 33E; south along the eastern boundary of Section 25 Township 13S, Range 33E to the southern boundary of Section 25 Township 13S, Range 33E; west along the southern boundary of sections 27, 26, 25 Township 13S, Range 33E to the Inyo County line; North along the Inyo~~

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~~County Line to Taboose Creek; east along Taboose Creek to the intersection of Highway 395; south~~ north along Highway 395 to the point of beginning.
~~(B) Season:~~
~~1. Period Two: The season shall open on the first Saturday in October and extend for 9 consecutive days.~~
~~2. Period Three: The season shall open on the third Saturday in October and extend for 9 consecutive days.~~
~~3. Period Four: The season shall open on the first Saturday in November and extend for 9 consecutive days.~~
~~4. Period Five: The season shall open on the first Saturday in December and continue for 9 consecutive days.~~
~~(C) Number of License Tags:~~
~~1. Period Two: 2 bull tags and 0 antlerless tags.~~
~~2. Period Three: 0 bull tags and 0 antlerless tags.~~
~~3. Period Four: 0 bull tags and 0 antlerless tags.~~
~~4. Period Five: 0 bull tags and 0 antlerless tags~~
(5) Goodale General Methods Tule Elk Hunt:
(A) Area: In that portion of Inyo County beginning at the junction of Highway 395 and Taboose Creek in Section 14, Township 11S, Range 34E; south along Highway 395 to Onion Valley Road; west along Onion Valley Road to the intersection of the Section 25 Township 13S, Range 33E; south along the eastern boundary of Section 25 Township 13S, Range 33E to the southern boundary of Section 25 Township 13S, Range 33E; west along the southern boundary of sections 27, 26, 25 Township 13S, Range 33E to the Inyo County line; North along the Inyo County Line to Taboose Creek; east along Taboose Creek to the point of beginning.
~~(5)~~ (6) Lone Pine General Methods Tule Elk Hunt:
(A) Area: In that portion of Inyo County beginning at the junction of Highway 395 and Mazourka Canyon Road; east and then north on Mazourka Canyon Road to the Inyo National Forest Boundary at the junction of the southern boundary of Township 12S and the northern boundary of Township 13S; east along the southern boundary of Township 12S to Saline Valley Road; south on Saline Valley Road to Highway 190; north and then southwest on Highway 190 to the junction of Highway 395 at Olancha; north on Highway 395 to the point of beginning.
~~(B) Season:~~
~~1. Period Two: The season shall open on the first Saturday in October and extend for 9 consecutive days.~~
~~2. Period Three: The season shall open on the third Saturday in October and extend for 9 consecutive days.~~
~~3. Period Four: The season shall open on the first Saturday in November and extend for 9 consecutive days.~~
~~4. Period Five: The season shall open on the first Saturday in December and continue for 9 consecutive days.~~
~~(C) Number of License Tags:~~
~~1. Period Two: 0 bull tags and 0 antlerless tags.~~
~~2. Period Three: 2 bull tags and 0 antlerless tags.~~

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~~3. Period Four: 2 bull tags and 0 antlerless tags.~~
~~4. Period Five: 0 bull tags and 0 antlerless tags.~~
~~(6)~~ (7) Tinemaha General Methods Tule Elk Hunt:
(A) Area: In that portion of Inyo County beginning at the junction of Highway 395 and Highway 168 in the town of Big Pine; north and east along Highway 168 to the junction of the Death Valley Road; south and east along the Death Valley Road to the junction of the Papoose Flat Road; south along the Papoose Flat Road to the southern boundary of Section 2, Township 11S, Range 35E; west along the southern boundaries of sections 2, 3, 4 and 5 to the terminus of the Aberdeen Station Road in Section 5, Township 11S, Range 35E; south and west along the Aberdeen Station Road to Highway 395; north along Highway 395 to the point of beginning.
~~(B) Season:~~
~~1. Period Two: The season shall open on the first Saturday in October and extend for 9 consecutive days.~~
~~2. Period Three: The season shall open on the third Saturday in October and extend for 9 consecutive days.~~
~~3. Period Four: The season shall open on the first Saturday in November and extend for 9 consecutive days.~~
~~4. Period Five: The season shall open on the first Saturday in December and continue for 9 consecutive days.~~
~~(C) Number of License Tags:~~
~~1. Period Two: 1 bull tag and 0 antlerless tags.~~
~~2. Period Three: 0 bull tags and 0 antlerless tags.~~
~~3. Period Four: 0 bull tags and 0 antlerless tags.~~
~~4. Period Five: 0 bull tags and 0 antlerless tags.~~
~~(7)~~ (8) West Tinemaha General Methods Tule Elk Hunt:
(A) Area: In that portion of Inyo County beginning at the junction of Highway 395 and Highway 168 in the town of Big Pine; south along Highway 395 to the north junction of Fish Springs Road; south along Fish Springs Road to the junction of Highway 395; south along Highway 395 to Taboose Creek in Section 14, Township 11S, Range 34E; west along Taboose Creek to the Inyo County line; north and west along the Inyo County line to the intersection of Tinemaha Creek; east along Tinemaha Creek to the intersection of McMurray Meadow Road; north on McMurray Meadow Road to the intersection of Glacier Lodge Road; north and east on Glacier Lodge Road to Crocker Avenue; east along Crocker Avenue to Highway 395; north along Highway 395 to the point of beginning.
~~(B) Season:~~
~~1. Period One: The season shall open on the second Saturday in September and extend for 16 consecutive days.~~
~~2. Period Two: The season shall open on the first Saturday in October and extend for 9 consecutive days.~~
~~3. Period Three: The season shall open on the third Saturday in October and extend for 9 consecutive days.~~
~~4. Period Four: The season shall open on the first Saturday in November and extend for 9 consecutive days.~~

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~~5. Period Five: The season shall open on the first Saturday in December and continue for 9 consecutive days.~~
~~(C) Number of License Tags:~~
~~1. Period One: 0 bull tags and 0 antlerless tags.~~
~~2. Period Two: 0 bull tags and 0 antlerless tags.~~
~~3. Period Three: 0 bull tags and 0 antlerless tags.~~
~~4. Period Four: 0 bull tags and 0 antlerless tags.~~
~~5. Period Five: 0 bull tags and 0 antlerless tags.~~
~~(8)~~ (9) Tinemaha Mountain General Methods Tule Elk Hunt:
(A) Area: In that portion of Inyo County with a line beginning at the intersection of Glacier Lodge Road (9S21) and McMurray Meadow Road (9S03); south on McMurray Meadow Road to Tinemaha Creek; west along Tinemaha Creek to the Inyo County line; north and west along the Inyo County line to the southeast corner of Section 23, Township 10S, Range 32E; north along the eastern boundaries of sections 23, 14, 11, 2, Township 10S, Range 32E, and the eastern boundary of Section 36, Township 9S, Range 32E to Glacier Lodge Road; east along Glacier Lodge Road to the beginning.
~~(B) Season:~~
~~1. Period One: The season shall open on the second Saturday in September and extend for 16 consecutive days.~~
~~2. Period Two: The season shall open on the first Saturday in October and extend for 9 consecutive days.~~
~~3. Period Three: The season shall open on the third Saturday in October and extend for 9 consecutive days.~~
~~4. Period Four: The season shall open on the first Saturday in November and extend for 9 consecutive days.~~
~~5. Period Five: The season shall open on the first Saturday in December and continue for 9 consecutive days.~~
~~(C) Number of License Tags:~~
~~1. Period One: 0 bull tags.~~
~~2. Period Two: 0 bull tags.~~
~~3. Period Three: 1 bull tag.~~
~~4. Period Four: 1 bull tag.~~
~~5. Period Five: 0 bull tags.~~
~~(9)~~ (10) Whitney General Methods Tule Elk Hunt:
(A) Area: In that portion of Inyo County with a line beginning at the intersection of Highway 395 and Onion Valley Road; south on Highway 395 to the intersection of Whitney Portal Road; west along Whitney Portal Road to the northern boundary of Section 36, Township 15S, Range 34E; west along the northern boundary of sections 36, 35, 34 and 33 Township 15S, Range 34 E to the Inyo County Line; north along the Inyo County Line to the intersection of Section 27 Township 13S, range 33E; east along the southern boundary of sections 27, 26 and 25 Township 13S, Range 33E; north along the eastern boundary of Section 25 Township 13S, Range 33E to the intersection of Onion Valley Road; east along Onion Valley Road to the point of beginning.
~~(B) Season:~~

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~~1. Period Two: The season shall open on the first Saturday in October and extend for 9 consecutive days.~~
~~2. Period Three: The season shall open on the third Saturday in October and extend for 9 consecutive days.~~
~~3. Period Four: The season shall open on the first Saturday in November and extend for 9 consecutive days.~~
~~4. Period Five: The season shall open on the first Saturday in December and continue for 9 consecutive days.~~
~~(C) Number of License Tags:~~
~~1. Period Two: 1 bull tag and 0 antlerless tags.~~
~~2. Period Three: 1 bull tag and 0 antlerless tags.~~
~~3. Period Four: 0 bull tags and 0 antlerless tags.~~
~~4. Period Five: 0 bull tags and 0 antlerless tags.~~
~~(10)~~ (11) Grizzly Island General Methods Tule Elk Hunt:
(A) Area: ~~Those lands owned and managed by the Department of Fish and Game as the Grizzly Island Wildlife Area.~~ In that portion of Solano County within a line beginning at the junction of Highway 12 and Highway 80; southwest along Highway 80 to Highway 680; south along Highway 680 to the Solano County line at the Benecia Bridge; east and north along the Solano County line to Highway 12 near the town of Rio Vista; north and west along Highway 12 to the point of beginning.
~~(B) Season:~~
~~1. Period One: The season for antlerless elk shall open on the Tuesday after the second Saturday in August and continue for 4 consecutive days, whereas the season for bulls and spike bulls shall open on the Thursday after the second Saturday in August and continue for 4 consecutive days.~~
~~2. Period Two: The season for antlerless elk shall open on the Tuesday after the third Saturday in August and continue for 4 consecutive days, whereas the season for bulls and spike bulls shall open on the Thursday after the third Saturday in August and continue for 4 consecutive days.~~
~~3. Period Three: The season for antlerless elk shall open on the Tuesday after the fourth Saturday in August and continue for 4 consecutive days, whereas the season for bulls and spike bulls shall open on the Thursday after the first Monday in September and continue for 4 consecutive days.~~
~~4. Period Four: The season for antlerless elk shall open on the second Tuesday in September and continue for 4 consecutive days, whereas the season for bulls and spike bulls shall open on Thursday following the second Tuesday in September and continue for 4 consecutive days.~~
~~5. Period Five: The season for antlerless elk shall open on the third Tuesday in September and continue for 4 consecutive days, whereas the season for bulls and spike bulls shall open on the Thursday following the third Tuesday in September and continue for 4 consecutive days.~~
~~(C) Number of License Tags:~~
~~1. Period One: 0 bull tags, 4 spike bull tags, and 5 antlerless tags.~~
~~2. Period Two: 0 bull tags, 3 spike bull tags, and 8 antlerless tags.~~
~~3. Period Three: 0 bull tags, 2 spike bull tags, and 8 antlerless tags.~~

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~~4. Period Four: 2 bull tags, 0 spike bull tags, and 8 antlerless tags.~~
~~5. Period Five: 2 bull tags, 2 spike bull tags, and 8 antlerless tags~~
~~(D)~~ (B) Special Conditions: All tagholders will be required to attend a mandatory orientation. Tagholders will be notified of the time and location of the orientation meeting after receipt of their elk license tags.
~~(11)~~ (12) Fort Hunter Liggett Central Coast General Public General Methods Tule Elk Hunt:
(A) Area: ~~That portion of Monterey County lying within the exterior boundaries of Fort Hunter Liggett, except as restricted by the Commanding Officer.~~ In those portions of San Luis Obispo, Monterey, Kings, Fresno, San Benito, Santa Cruz and Santa Clara counties within a line beginning in Monterey County at the junction of Highway 198 and Highway 101; south along Highway 101 to the northern boundary of Camp Roberts California Army National Guard Base near the town of Bradley; northeast and then south along the northern and eastern boundaries of Camp Roberts to Highway 101 in San Luis Obispo County; south along Highway 101 to Highway 46; south and west along Highway 46 to Highway 1; south and east along Highway 1 to Nikki Beach Drive south of the town of Harmony; west and south along Harmony Ranch Road to the southern boundary of Section 19, Township 28S, Range 9E; west along the southern boundary of Section 19,Township 28S, Range 9E to the Pacific Coastline; north along the Pacific Coastline to the Monterey-Santa Cruz county line north of Zmudowski State Beach: northeast along the Monterey-Santa Cruz county line to Highway 1; northwest on Highway 1 to Highway 152 in Santa Cruz County; east and north along Highway 152 to Highway 156 in Santa Clara; southwest along Highway 156 to Highway 25 near the town of Hollister in San Benito County, south along Highway 25 to Panoche Road/County Highway J1 near the town Paicines, south and east along Panoche Road/County Highway J1 to Little Panoche Road/County Highway J1; north and east along Little Panoche Road/County Highway J1 to Interstate 5 in Fresno County; south along Interstate 5 to Highway 33: southwest along Highway 33 to the Highway 198 in Coalinga; west along Highway 198 to Parkfield Grade Road/Parkfield Coalinga Road near Parkfield Junction; south along Parkfield Grade Road/Parkfield Coalinga Road to the intersection with the Fresno-Monterey County Line; north along the Fresno-Monterey County Line to the intersection of Smith Mountain Lookout road; south and west along Smith Mountain Lookout road to the intersection with Slack Canyon Road; north and west along Slack Canyon road to Peach Tree Road; north along Peach Tree Road to the Junction of Highway 198; west along Highway 198 to the point of beginning. including portions lying within the exterior boundaries of Fort Hunter Liggett, except as restricted by the Commanding Officer.
(B) ~~Season:~~ Fort Hunter Liggett Special Conditions: See subsection 364(p).
~~1. Period One: The season shall open on the first Tuesday in November and continue for 9 consecutive days.~~
~~2. Period Two: The season shall open on the Tuesday preceding the fourth Thursday in November and continue for 9 consecutive days.~~
~~3. Period Three: The season shall open on the Saturday preceding December 25 and continue for 14 consecutive days.~~
~~(C) Due to military operations, season dates are subject to further restriction, or may be rescheduled between August 1 and January 31 by the Commanding Officer.~~

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~~(D) Number of License Tags:~~
~~1. Period One: 4 antlerless tags.~~
~~2. Period Two: 4 antlerless tags.~~
~~3. Period Three: 4 bull tags.~~
~~(E) Special Conditions:~~
~~1. All tagholders will be required to attend a mandatory hunter orientation. Tagholders will be notified of the time and location of the orientation meeting after receipt of their elk license tags.~~
~~2. Tagholders shall be required to purchase an annual hunting pass available from Fort Hunter Liggett.~~
~~3. All successful tagholders will be required to have their tags validated on Fort Hunter Liggett prior to leaving. All unsuccessful tag holders will be required to turn in their unfilled tags to Fort Hunter Liggett immediately upon completion of their hunt.~~
~~4. Season dates and hunt areas are subject to restriction by the Commanding Officer of Fort Hunter Liggett based on military training.~~
~~(12)~~ (13) East Park Reservoir General Methods Tule Elk Hunt:
(A) Area: In those portions of Glenn and Colusa counties within a line beginning in Glenn County at the junction of Interstate Highway 5 and Highway 162 at Willows; west along Highway 162 (Highway 162 becomes Alder Springs Road) to the Glenn-Mendocino County line; south along the Glenn-Mendocino County line to the Glenn-Lake County line; east and then south along the Glenn-Lake County line to the Colusa-Lake County line; west, and then southeast along the Colusa-Lake County line to Goat Mountain Road; north and east along Goat Mountain Road to the Lodoga-Stonyford Road; east along the Lodoga-Stonyford Road to the Sites-Lodoga Road at Lodoga; east along the Sites-Lodoga Road to the Maxwell-Sites Road at Sites; east along the Maxwell-Sites Road to Interstate Highway 5 at Maxwell; north along Interstate Highway 5 to the point of beginning.
~~(B) Season: The season shall open the first Saturday in September and continue for 27 consecutive days.~~
~~(C) Number of License Tags: 2 bull tags and 2 antlerless tags.~~
~~(D)~~ (B) Special Conditions:
1. All tagholders will be required to attend a mandatory orientation. Tagholders will be notified of the time and location of the orientation meeting after receipt of their elk license tags.
2. Access to private land may be restricted or require payment of an access fee.
3. A Colusa County ordinance prohibits firearms on land administered by the USDI Bureau of Reclamation in the vicinity of East Park Reservoir. A variance has been requested to allow use of muzzleloaders (as defined in Section 353) on Bureau of Reclamation land within the hunt zone.
~~(13)~~ (14) San Luis Reservoir General Methods Tule Elk Hunt:
(A) Area: In those portions of Merced, Fresno, San Benito, and Santa Clara counties within a line beginning in Merced County at the junction of Highway 152 and Interstate 5 near the town of Santa Nella, west along Highway 152 to Highway 156 in Santa Clara County, southwest along Highway 156 to Highway 25 near the town of Hollister in San Benito County, south along Highway 25 to the town of Paicine, south and east along J1

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to Little Panoche Road, North and east along Little Panoche Road to Interstate 5 in Fresno County, north along Interstate 5 to the point of beginning.
~~(B) Season: The season shall open on the first Saturday in October and continue for 23 consecutive days.~~
~~(C) Number of License Tags: 0 bull tags, 0 antlerless tags, and 5 either-sex tags.~~
~~(14)~~ (15) Bear Valley General Methods Tule Elk Hunt:
(A) Area: in those portions of Colusa, Lake, and Yolo counties within a line beginning in Colusa County at the junction of Interstate Highway 5 and Maxwell Sites Road at Maxwell; west along Maxwell Sites Road to the Sites Lodoga Road; west along the Sites Lodoga Road to Lodoga Stonyford Road; west along Lodoga Stonyford Road to Goat Mountain Road; west and south along Goat Mountain Road to the Colusa-Lake County line; south and west along the Colusa-Lake County line to Forest Route M5; south along Forest Route M5 to Bartlett Springs Road; east along Bartlett Springs Road to Highway 20; east on Highway 20 to the fork of Cache Creek; north on the north fork of Cache Creek to Indian Valley Reservoir to Walker Ridge-Indian Valley Reservoir Access Road; east on Walker Ridge-Indian Valley Reservoir Access Road to Walker Ridge Road; south on Walker Ridge Road to Highway 20; east on Highway 20 to Highway 16; south on Highway 16 to Rayhouse Road; south and west on Rayhouse Road to the Yolo-Napa County line; east and south along the Yolo-Napa County line to Road 8053; east on Road 8053 to County Road 78A; east on County Road 78A to Highway 16; east on Highway 16 to Route E4 at Capay; north and east on Route E4 to Interstate Highway 5; north on Interstate Highway 5 to the point of beginning.
~~(B) Season: The season shall open on the second Saturday in October and continue for 9 consecutive days.~~
~~(C) Number of License Tags: 3 bull tags and 2 antlerless tags.~~
~~(15)~~ (16) Lake Pillsbury General Methods Tule Elk Hunt:
(A) Area: in those portions of Lake County within a line beginning at the junction of the Glenn-Lake County line and the Mendocino County line; south and west along the Mendocino-Lake County line to Highway 20; southeast on Highway 20 to the intersection of Bartlett Springs Road; north and east along Bartlett Springs Road to the intersection of Forest Route M5; northwest on Forest Route M5 to the Colusa-Lake County Line; northwest and east on the Colusa-Lake County Line to the junction of the Glenn-Colusa County Line and the Lake-Glenn County Line; north and west on the Lake-Glenn County Line to the point of beginning.
~~(B) Season:~~
~~1. Antlerless Season. The antlerless season shall open on the Wednesday preceding the second Saturday in September and continue for 10 consecutive days.~~
~~2. Bull Season. The bull season shall open Monday following the fourth Saturday in September and continue for 10 consecutive days.~~
~~(C) Number of License Tags: 2 bull tags and 4 antlerless tags.~~
~~(16)~~ (17) Santa Clara General Methods Tule Elk Hunt:
(A) Area: Those portions of Merced, Santa Clara, and Stanislaus Counties within the following line: beginning at the intersection of the Interstate 5 and the San Joaquin/Stanislaus County line; southeast along Interstate 5 to the intersection of Highway 152; west along Highway 152 to the intersection of Highway 101 near the town

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of Gilroy; north along Highway 101 to the intersection of Interstate 680 near San Jose; north along Interstate 680 to the intersection of the Alameda/Santa Clara County line; east along the Alameda/Santa Clara County line to the intersection of the San Joaquin, Stanislaus, Alameda, Santa Clara County lines; northeast along the San Joaquin/Stanislaus County line to the point of beginning.
~~(B) Season: The season shall open on the second Saturday in October and continue for 16 consecutive days.~~
~~(C) Number of License Tags: 0 bull tags.~~
~~(17)~~ (18) Alameda General Methods Tule Elk Hunt:
(A) Area: Those portions of Alameda and San Joaquin Counties within the following line: beginning at the intersection of the Interstate 5 and the San Joaquin/Stanislaus County line; southwest along the San Joaquin/Stanislaus County line to the intersection of the San Joaquin, Stanislaus, Alameda, Santa Clara County lines; west along the Alameda/Santa Clara County Line to the intersection of Interstate 680; north along Interstate 680 to the intersection of Interstate 580; east and south along Interstate 580 to the intersection of Interstate 5; south along Interstate 5 to the point of beginning.
~~(B) Season: The season shall open on the second Saturday in October and continue for 16 consecutive days.~~
~~(C) Number of License Tags: 0 bull tags.~~
(19) San Emigdio Mountain General Methods Tule Elk Hunt:
(A) Area: Those portions of Kern, San Luis Obispo, Santa Barbara and Ventura counties within the following line: beginning at the junction of Highway 166 (Maricopa Highway) and Interstate Highway 5 in Kern County; west along Highway 166 to where it joins Highway 33 (West Side Highway) near Maricopa; south and west along highways 166 and 33 to their point of divergence in San Luis Obispo County; south along Highway 33 to Lockwood Valley Road in Ventura County; east and north along Lockwood Valley Road to Lake of the Woods where Lockwood Valley Road becomes Frazier Mountain Park Road; west along Frazier Mountain Park Road to Interstate Highway 5; and north along Interstate Highway 5 to the point of beginning.
(20) Camp Roberts General Public General Methods Tule Elk Hunt
(A) Area: That portion of Monterey and San Luis Obispo counties lying within the exterior boundaries of Camp Roberts, except as restricted by the Commanding Officer.
(B) Camp Roberts Special Conditions: See Subsection 364(q).
(e) Department Administered General Methods Apprentice Elk Hunts
(1) Siskiyou General Methods Roosevelt Elk Apprentice Hunt:
(A) Area: The tag shall be valid in the area described in subsection 364(a)(1)(A).
~~(1)~~ (2) Marble Mountains North General Methods Roosevelt Elk Apprentice ~~Elk~~ Hunt:
(A) Area: The tag shall be valid in the area described in subsection ~~364(a)(6)(A)~~ 364(a)(4)(A).
~~(B) Season: The season shall open on the Wednesday preceding the second Saturday in September and continue for 12 consecutive days.~~
~~(C) Number of License Tags: 2 either-sex tags.~~
~~(D)~~ (B) Special Conditions: Only persons possessing valid junior hunting licenses may apply for Apprentice Hunt license tags. Apprentice Hunt tagholders shall be

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accompanied by a nonhunting, licensed adult chaperon 18 years of age or older while hunting.
(3) Marble Mountains South General Methods Roosevelt Elk Apprentice Hunt:
(A) Area: The tag shall be valid in the area described in subsection 364(a)(5)(A).
(B) Special Conditions: Only persons possessing valid junior Hunting licenses may apply for Apprentice Hunt license tags. Apprentice Hunt tagholders shall be accompanied by a nonhunting, licensed adult chaperon 18 years of age or older while hunting.
~~(2)~~ (4) Northeastern California General Methods Rocky Mountain Elk Apprentice ~~Elk~~ Hunt:
(A) Area: The tag shall be valid in the area described in subsection 364(b)(1)(A).
~~(B) Season: The season shall open on the Wednesday preceding the third Saturday in September and continue for 12 consecutive days.~~
~~(C) Number of License Tags: Apprentice Season: 2 either-sex tags.~~
~~(D)~~ (B) Special Conditions: Only persons possessing valid junior hunting licenses may apply for Apprentice Hunt License tags. Apprentice Hunt tagholders shall be accompanied by a nonhunting, licensed adult chaperon 18 years of age or older while hunting.
~~(3)~~ (5) Cache Creek General Methods Tule Elk Apprentice Hunt:
(A) Area: The tag shall be valid in the area described in subsection 364(d)(1)(A).
~~(B) Season: The season shall open on the second Saturday in October and continue for 16 consecutive days.~~
~~(C) Number of License Tags: Apprentice Season: 1 bull tag.~~
~~(D)~~ (B) Special Conditions:
1. All tagholders will be required to attend a mandatory orientation. Tagholders will be notified of the time and location of the orientation meeting upon receipt of their elk license tags.
2. Only persons possessing valid junior hunting licenses may apply for Apprentice Hunt license tags. Apprentice Hunt tagholders shall be accompanied by a nonhunting, licensed adult chaperon 18 years of age or older while hunting.
~~(4)~~ (6) La Panza General Methods Tule Elk Apprentice Hunt:
(A) Area: The tag shall be valid in the area described in subsection 364(d)(2)(A).
~~(B) Season: Period One shall open on the second Saturday in October and extend for 23 consecutive days.~~
~~(C) Number of License Tags: Period One: 1 antlerless tag and 0 bull tags.~~
~~(D)~~ (B) Special Conditions:
1. All tagholders will be required to attend a mandatory orientation. Tagholders will be notified of the time and location of the orientation meeting after receipt of their elk license tags.
2. Only persons possessing valid junior hunting licenses may apply for Apprentice Hunt license tags. Apprentice Hunter tagholders shall be accompanied by a nonhunting, licensed adult chaperon 18 years of age or older while hunting.
~~(5)~~ (7) Bishop General Methods Tule Elk Apprentice Hunt:
(A) Area: The tag shall be valid in the area described in subsection 364(d)(3)(A).

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~~(B) Season: Period Two shall open on the first Saturday in October and extend for 9 consecutive days.~~
~~(C) Number of License Tags: Period Two: 0 bull tags and 0 antlerless tags.~~
~~(D)~~ (B) Special Conditions: Only persons possessing valid junior hunting licenses may apply for Apprentice Hunt license tags. Apprentice Hunt tagholders shall be accompanied by a nonhunting, licensed adult chaperon 18 years of age or older while hunting.
~~(6)~~ (8) Grizzly Island General Methods Tule Elk Apprentice Hunt:
(A) Area: The tag shall be valid in the area described in subsection ~~364(d)(10)(A)~~ 364(d)(11)(A).
~~(B) Season:~~
~~1. Period One Season for antlerless elk shall open on the Tuesday after the second Saturday in August and continue for 4 consecutive days, whereas the season for spike bulls shall open on the Thursday after the second Saturday in August and continue for 4 consecutive days.~~
~~2. Period Two Season for spike bulls shall open on the Thursday after the third Saturday in August and continue for 4 consecutive days.~~
~~(C) Number of License Tags:~~
~~1. Period One: 3 antlerless tags and 1 spike bull tag.~~
~~2. Period Two: 2 spike bull tags.~~
~~(D)~~ (B) Special Conditions:
1. All tagholders will be required to attend a mandatory orientation. Tagholders will be notified of the time and location of the orientation meeting after receipt of their elk license tags.
2. Only persons possessing valid junior hunting licenses may apply for Apprentice Hunt license tags. Apprentice Hunt tagholders shall be accompanied by a nonhunting, licensed adult chaperon 18 years of age or older while hunting.
~~(7)~~ (9) Fort Hunter Liggett Central Coast General Methods General Public Tule Elk Apprentice Hunt:
(A) Area: The tag shall be valid in the area described in subsection ~~364(d)(11)(A)~~ 364(d)(12)(A).
~~(B) Season: The season shall open on the Saturday preceding December 25 and continue for 14 consecutive days.~~
~~(C) Due to military operations, season dates are subject to further restriction, or may be rescheduled between August 1 and January 31 by the Commanding Officer.~~
~~(D) Number of License Tags: 1 bull tag and 1 antlerless tags.~~
~~(E)~~ (B) Special Conditions: See subsection 364(p).
~~1. All tagholders will be required to attend a mandatory hunter orientation. Tagholders will be notified of the time and location of the orientation meeting after receipt of their elk license tags.~~
~~2. Tagholders shall be required to purchase an annual hunting pass available from Fort Hunter Liggett.~~

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~~3.~~(C) Only persons possessing valid junior hunting licenses may apply for Apprentice Hunt license tags. Apprentice Hunt tagholders shall be accompanied by a nonhunting, licensed adult chaperon 18 years of age or older while hunting.
~~4. All successful tagholders will be required to have their tags validated on Fort Hunter Liggett prior to leaving. All unsuccessful tag holders will be required to turn in their unfilled tags to Fort Hunter Liggett immediately upon completion of their hunt.~~
~~5. Season dates and hunt areas are subject to restriction by the Commanding Officer of Fort Hunter Liggett based on military training.~~
(f) Department Administered Archery Only Elk Hunts:
(1) Northeastern California ~~Rocky Mountain~~ Archery Only Rocky Mountain Elk Hunt:
(A) Area: The tag shall be valid in the area described in subsection 364(b)(1)(A).
~~(B) Season: The season shall open on the Wednesday preceding the first Saturday in September and continue for 12 consecutive days~~
~~(C) Number of License Tags: 10 either-sex tags.~~
~~(E)~~ (B) Special Conditions: Elk may be taken with Archery Equipment only as specified in Section 354.
(2) Owens Valley Multiple Zone ~~Tule Elk~~ Archery Only Tule Elk Hunt:
(A) Area: The tag shall be valid in areas described in subsections 364(d)(3)(A), (d)(4)(A), and (d)(5)(A)~~, (d)(8)(A), and (d)(9)(A)~~.
~~(B) Season: The season shall open on the second Saturday in August and extend for 9 consecutive days.~~
~~(C) Number of License Tags: 5 bull tags and 0 antlerless tags.~~
~~(D)~~ (B) Special Conditions: Elk may be taken with Archery Equipment only as specified in Section 354.
(3) Goodale Archery Only Tule Elk Hunt:
(A) Area: The tag shall be valid in the area described in subsection 364(d)(5)(A).
(B) Special Conditions: Elk may be taken with Archery Equipment only as specified in Section 354.
~~(3)~~ (4) Lone Pine ~~Tule Elk~~ Archery Only Tule Elk Hunt:
(A) Area: The tag shall be valid in the area described in subsection ~~364(d)(5)(A)~~ 364(d)(6)(A).
~~(B) Season: Period One Season shall open on the second Saturday in September and extend for 16 consecutive days.~~
~~(C) Number of License Tags: Period One: 0 bull tags and 0 antlerless tags.~~
~~(D)~~ (B) Special Conditions: Elk may be taken with Archery Equipment only as specified in Section 354.
~~(4)~~ (5) Tinemaha ~~Tule Elk~~ Archery Only Tule Elk Hunt:
(A) Area: The tag shall be valid in the area described in subsection ~~364(d)(6)(A)~~ 364(d)(7)(A).
~~(B) Season: Period One Season shall open on the second Saturday in September and extend for 16 consecutive days.~~
~~(C) Number of License Tags: Period One: 1 bull tag and 0 antlerless tags.~~
~~(D)~~ (B) Special Conditions: Elk may be taken with Archery Equipment only as specified in Section 354.
~~(5)~~ (6) Whitney ~~Tule Elk~~ Archery Only Tule Elk Hunt:

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(A) Area: The tag shall be valid in the area described in subsection ~~364(d)(9)(A)~~ 364(d)(10)(A).
~~(B) Season: Period One Season shall open on the second Saturday in September and extend for 16 consecutive days.~~
~~(C) Bag and Possession Limit: 1 elk per season.~~
~~(D) Number of License Tags: Period One: 0 bull tags and 0 antlerless tags.~~
~~(E)~~ (B) Special Conditions: Elk may be taken with Archery Equipment only as specified in Section 354.
~~(6)~~ (7) Fort Hunter Liggett Central Coast General Public ~~Tule Elk~~ Archery Only Tule Elk Hunt:
(A) Area: The tag shall be valid in the area described in subsection ~~364(d)(11)(A)~~ 364(d)(12)(A).
(B) ~~Season:~~ Special Conditions: See subsection 364(p).
~~1. Either-sex season shall open on the last Wednesday in July and continue for 9 consecutive days.~~
~~2. Antlerless Season shall open on the last Wednesday in September and continue for 9 consecutive days.~~
~~(C) Due to military operations, season dates are subject to further restriction, or may be rescheduled between August 1 and January 31 by the Commanding Officer.~~
~~(D) Number of License Tags: 2 either-sex tags and 4 antlerless tags.~~
~~(E) Special Conditions:~~
~~1. All tagholders will be required to attend a mandatory hunter orientation. Tagholders will be notified of the time and location of the orientation meeting after receipt of their elk license tags.~~
~~2. Tagholders shall be required to purchase an annual hunting pass available from Fort Hunter Liggett.~~
~~3.~~ (C) Elk may be taken with Archery Equipment only as specified in Section 354.
~~4. All successful tagholders will be required to have their tags validated on Fort Hunter Liggett prior to leaving. All unsuccessful tag holders will be required to turn in their unfilled tags to Fort Hunter Liggett immediately upon completion of their hunt.~~
~~5. Season dates and hunt areas are subject to restriction by the Commanding Officer of Fort Hunter Liggett based on military training.~~
(g) Department Administered Muzzleloader Only Elk Hunts:
(1) Bishop ~~Tule Elk Hunt~~ Muzzleloader Only Tule Elk-Hunt:
(A) Area: The tag shall be valid in the area described in subsection 364(d)(3)(A).
~~(B) Season: Period One Season shall open on the second Saturday in September and extend for 16 consecutive days.~~
~~(C) Number of License Tags: Period One: 1 bull tag and 0 antlerless tags.~~
~~(D)~~ (B) Special Conditions: Elk may be taken with muzzleloader equipment only as specified in Section 353.
(2) Independence ~~Tule Elk~~ Muzzleloader Only Tule Elk Hunt:
(A) Area: The tag shall be valid in the area described in subsection 364(d)(4)(A).
~~(B) Season: Period One Season shall open on the second Saturday in September and for extend 16 consecutive days.~~
~~(C) Number of License Tags: Period One: 1 bull tag and 0 antlerless tags.~~

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~~(D)~~ (B) Special Conditions: Elk may be taken with muzzleloader equipment only as extend specified in Section 353.
(3) Goodale Muzzleloader Only Tule Elk Hunt:
(A) Area: The tag shall be valid in the area described in subsection 364(d)(5)(A).
(B) Special Conditions: Elk may be taken with muzzleloader equipment only as specified in Section 353.
~~(3)~~ (4) Fort Hunter Liggett Central Coast General Public ~~Tule Elk~~ Muzzleloader Only Tule Elk Hunt:
(A) Area: The tag shall be valid in the area described in subsection ~~364(d)(11)(A)~~ 364(d)(12)(A).
(B) ~~Season: The season shall open on the Wednesday preceding the fourth Thursday in November and continue for 9 consecutive days.~~ Special Conditions: See subsection 364(p).
~~(C) Due to military operations, season dates are subject to further restriction, or may be rescheduled between August 1 and January 31 by the Commanding Officer.~~
~~(D) Number of License Tags: 0 bull tags.~~
~~(E) Special Conditions:~~
~~1. All tagholders will be required to attend a mandatory hunter orientation. Tagholders will be notified of the time and location of the orientation meeting after receipt of their elk license tags.~~
~~2. Tagholders shall be required to purchase an annual hunting pass available from Fort Hunter Liggett.~~
~~3.~~ (C) Elk may be taken with Muzzleloader Equipment only as specified in Section 353.
~~4. All successful tagholders will be required to have their tags validated on Fort Hunter Liggett prior to leaving. All unsuccessful tag holders will be required to turn in their unfilled tags to Fort Hunter Liggett immediately upon completion of their hunt.~~
~~5. Season dates and hunt areas are subject to restriction by the Commanding Officer of Fort Hunter Liggett based on military training.~~
(h) Department Administered Muzzleloader/Archery Only Elk Hunts:
(1) Siskiyou Muzzleloader/Archery Only Roosevelt Elk Hunt:
(A) Area: The tag shall be valid in the area described in subsection 364(a)(1)(A).
(B) Special Conditions: Elk may be taken with archery or muzzleloader equipment only as specified in Sections 353 and 354.
~~(1)~~ (2) Marble Mountains North ~~Roosevelt Elk~~ Muzzleloader/Archery Only Roosevelt Elk Hunt.
(A) Area: The tag shall be valid in the area described in subsection ~~364(a)(6)(A)~~ 364(a)(4)(A).
~~(B) Season: The Season shall open on the last Saturday in October and extend for 9 consecutive days.~~
~~(C) Number of License Tags: 5 either-sex tags.~~
~~(D)~~ (B) Special Conditions: Elk may be taken with archery or muzzleloader equipment only as specified in Sections 353 and 354.
(3) Marble Mountains South Muzzleloader/Archery Only Roosevelt Elk Hunt:
(A) Area: The tag shall be valid in the area described in subsection 364(a)(5)(A).

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(B) Special Conditions: Elk may be taken with archery or muzzleloader equipment only as specified in Sections 353 and 354.
(i) Fund Raising Elk ~~Tags~~ Hunts.
(1) Multi-zone Fund Raising ~~License Tag~~ Elk Hunt.
(A) Area: The tag shall be valid in the areas described in subsections 364(a)(1)(A), (a)(2)(A), (a)(3)(A), (a)(4)(A), (a)(5)(A), ~~(a)(6)(A),~~ (b)(1)(A), and (d)(2)(A).
~~(B) Season: The tag shall be valid during the following seasons.~~
~~1. Siskiyou and Marble Mountains Roosevelt Elk Season shall open on the Wednesday preceding the first Saturday in September and continue for 19 consecutive days.~~
~~2. Northwestern Roosevelt Elk Season shall open on last Wednesday in August and continue for 30 consecutive days.~~
~~3. Northeastern Rocky Mountain Elk Season shall open on the Wednesday preceding the last Saturday in August and continue for 33 consecutive days.~~
~~4. La Panza Tule Elk Season shall open on the first Saturday in October and extend for 65 consecutive days.~~
~~(C) Number of License Tags: 1 bull tag.~~
(2) Grizzly Island Fund Raising ~~License Tag~~ Tule Elk Hunt.
(A) Area: The tag shall be valid in the area described in subsection ~~364(d)(10)(A)~~ 364(d)(11)(A).
(B) ~~Season: The Season shall open on the first Saturday in August and continue for 30 consecutive days, with advance~~ Special Conditions: Advance reservations required by contacting the Grizzly Island Wildlife Area by telephone at (707) 425-3828.
~~(C) Number of License Tags: 1 bull tag.~~
(3) Owens Valley Fund Raising ~~License Tag~~ Tule Elk Hunt.
(A) Area: The tag shall be valid in areas described in subsections 364(d)(3)(A), (d)(4)(A), (d)(5)(A), (d)(6)(A), (d)(7)(A), (d)(8)(A), ~~and~~ (d)(9)(A), and (d)(10)(A).
~~(B) Season: The Season shall open on the last Saturday in July and extend for 30 consecutive days.~~
~~(C) Number of License Tags: 1 bull tag.~~
(j) Military Only Elk ~~Tags~~ Hunts. These hunts are sponsored and tag quotas are set by the Department. The tags are assigned and the hunts are administered by the Department of Defense:
(1) Fort Hunter Liggett Military Only General Methods Tule Elk Hunt:
(A) Area: ~~The tag shall be valid in the area described in subsection 364(d)(11)(A).~~ That portion of Monterey County lying within the exterior boundaries of Fort Hunter Liggett, except as restricted by the Commanding Officer.
(B) ~~Season:~~ Special Conditions: See subsection 364(p).
~~1. The Early Season shall open on the third Monday in August and continue for 5 consecutive days and reopen on the fourth Monday in August and continue for 5 consecutive days.~~
~~2. Period One: The season shall open on the first Tuesday in November and continue for 9 consecutive days.~~
~~3. Period Two: The season shall open on the Tuesday preceding the fourth Thursday in November and continue for 9 consecutive days.~~

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~~4. Period Three: The season shall open on the Saturday preceding December 25 and continue for 14 consecutive days.~~
~~(C) Due to military operations, season dates are subject to further restriction, or may be rescheduled between August 1 and January 31 by the Commanding Officer.~~
~~(D) Number of License Tags:~~
~~1. Early Season: 2 bull tags and 1 antlerless tag.~~
~~2. Period One: 4 antlerless tags.~~
~~3. Period Two: 4 antlerless tags.~~
~~4. Period Three: 4 bull tags.~~
~~(E) Special Conditions:~~
~~1. All tagholders will be required to attend a mandatory hunter orientation. Tagholders will be notified of the time and location of the orientation meeting after receipt of their elk license tags.~~
~~2. Tagholders shall be required to purchase an annual hunting pass available from Fort Hunter Liggett.~~
~~3. All successful tagholders will be required to have their tags validated on Fort Hunter Liggett prior to leaving. All unsuccessful tag holders will be required to turn in their unfilled tags to Fort Hunter Liggett immediately upon completion of their hunt.~~
~~4. Season dates and hunt areas are subject to restriction by the Commanding Officer of Fort Hunter Liggett based on military training.~~
(2) Fort Hunter Liggett Military Only General Methods Tule Elk Apprentice ~~Tule Elk~~ Hunt:
(A) Area: ~~The tag shall be valid in the area described in subsection 364(d)(11)(A).~~ That portion of Monterey County lying within the exterior boundaries of Fort Hunter Liggett, except as restricted by the Commanding Officer.
(B) ~~Season: The season shall open on the Saturday preceding December 25 and continue for 14 consecutive days~~ Special Conditions: See subsection 364(p).
~~(C) Due to military operations, season dates are subject to further restriction, or may be rescheduled between August 1 and January 31 by the Commanding Officer.~~
~~(D) Number of License Tags: 1 bull tag and 1 antlerless tags.~~
~~(E) Special Conditions:~~
~~1. All tagholders will be required to attend a mandatory hunter orientation. Tagholders will be notified of the time and location of the orientation meeting after receipt of their elk license tags.~~
~~2. Tagholders shall be required to purchase an annual hunting pass available from Fort Hunter Liggett.~~
~~3. Season dates and hunt areas are subject to restriction by the Commanding Officer of Fort Hunter Liggett based on military training.~~
~~4. All successful tagholders will be required to have their tags validated on Fort Hunter Liggett prior to leaving. All unsuccessful tag holders will be required to turn in their unfilled tags to Fort Hunter Liggett immediately upon completion of their hunt.~~
~~5.~~ (C) Only persons possessing valid junior hunting licenses may apply for Apprentice Hunt license tags. Apprentice Hunt tagholders shall be accompanied by a nonhunting, licensed adult chaperon 18 years of age or older while hunting.
(3) Fort Hunter Liggett Military Only Archery Only Tule Elk Hunt:

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(A) Area: ~~The tag shall be valid in the area described in subsection 364(d)(11)(A).~~ That portion of Monterey County lying within the exterior boundaries of Fort Hunter Liggett, except as restricted by the Commanding Officer.
(B) ~~Season:~~ Special Conditions: See subsection 364(p).
~~1. Either-sex season shall open on the last Wednesday in July and continue for 9 consecutive days.~~
~~2. Antlerless Season shall open on the last Wednesday in September and continue for 9 consecutive days.~~
~~(C) Due to military operations, season dates are subject to further restriction, or may be rescheduled between August 1 and January 31 by the Commanding Officer.~~
~~(D) Number of License Tags: 2 either-sex tags and 4 antlerless tags.~~
~~(E) Special Conditions:~~
~~1.~~ (C) Elk may be taken with Archery Equipment only as specified in Section 354.
~~2. All tagholders will be required to attend a mandatory hunter orientation. Tagholders will be notified of the time and location of the orientation meeting upon receipt of their elk license tags.~~
~~3. Tagholders shall be required to purchase an annual hunting pass available from Fort Hunter Liggett.~~
~~4. All successful tagholders will be required to have their tags validated on Fort Hunter Liggett prior to leaving. All unsuccessful tag holders will be required to turn in their unfilled tags to Fort Hunter Liggett immediately upon completion of their hunt.~~
~~5. Season dates and hunt areas are subject to restriction by the Commanding Officer of Fort Hunter Liggett based on military training.~~
(4) Fort Hunter Liggett Military Only Muzzleloader Only Tule Elk Hunt:
(A) Area: ~~The tag shall be valid in the area described in subsection 364(d)(11)(A).~~ That portion of Monterey County lying within the exterior boundaries of Fort Hunter Liggett, except as restricted by the Commanding Officer.
(B) ~~Season: The season shall open on the Wednesday preceding the fourth Thursday in November and continue for 9 consecutive days~~ Special Conditions: See subsection 364(p).
~~(C) Due to military operations, season dates are subject to further restriction, or may be rescheduled between August 1 and January 31 by the Commanding Officer.~~
~~(D) Number of License Tags: 0 bull tags.~~
~~(E) Special Conditions:~~
~~1. Elk may be taken with Muzzleloader Equipment only as specified in Section 353.~~
~~2. All tagholders will be required to attend a mandatory hunter orientation. Tagholders will be notified of the time and location of the orientation meeting upon receipt of their elk license tags.~~
~~3. Tagholders shall be required to purchase an annual hunting pass available from Fort Hunter Liggett.~~
~~4. All successful tagholders The tag shall be valid in the area described in subsection 364(d)(11)(A) will be required to have their tags validated on Fort Hunter Liggett prior to leaving. All unsuccessful tag holders will be required to turn in their unfilled tags to Fort Hunter Liggett immediately upon completion of their hunt.~~

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~~5. Season dates and hunt areas are subject to restriction by the Commanding Officer of Fort Hunter Liggett based on military training.~~
(5) Camp Roberts Military Only General Methods Tule Elk Hunt.
(A) Area: That portion of Monterey and San Luis Obispo counties lying within the exterior boundaries of Camp Roberts, except as restricted by the Commanding Officer.
(B) Special Conditions: See subsection 364(q).
(k) Bag and Possession Limit: Each elk tag is valid only for one elk per season and only in the hunt area drawn. ~~Hunt areas are described in subsections 364(a), (b), (c), (d), (e), (f), (g), (h), and (j) and persons shall only be eligible for one elk tag per season.~~
(*l*) Definitions:
(1) Bull elk: Any elk having an antler or antlers at least four inches in length as measured from the top of the skull.
(2) Spike bull: A bull elk having no more than one point on each antler. An antler point is a projection of the antler at least one inch long and longer than the width of its base.
(3) Antlerless elk: Any elk, with the exception of spotted calves, with antlers less than four inches in length as measured from the top of the skull.
(4) Either-sex elk: For the purposes of these regulations, either-sex is defined as bull elk, ~~as described in subsection 364(*l*)(1),~~ spike elk, or antlerless elk ~~as, described in subsection 364(*l*)(3)~~.
(m) Method of Take: Only methods for taking elk as defined in Sections 353 and 354 may be used.
~~(n) General Method of take are those methods defined in Sections 353 and 354.~~
~~(o)~~ (n) Tagholder Responsibilities:
(1) No tagholder shall take or possess any elk or parts thereof governed by the regulations except herein provided.
(2) The department reserves the right to use any part of the tagholder's elk for biological analysis as long as the amount of edible meat is not appreciably decreased.
(3) Any person taking an elk which has a collar or other marking device attached to it shall provide the department with such marking device within 10 days of taking the elk.
~~(p)~~ (o) The use of dogs to take or attempt to take elk is prohibited.
(p) Fort Hunter Liggett Special Conditions:
(1) All tagholders hunting within the exterior boundaries of Fort Hunter Liggett will be required to attend a mandatory hunter orientation. Tagholders will be notified of the time and location of the orientation meeting upon receipt of their elk license tags.
(2) Tagholders hunting within the exterior boundaries of Fort Hunter Liggett shall be required to purchase an annual hunting pass available from Fort Hunter Liggett.
(3) All successful tagholders hunting within the exterior boundaries of Fort Hunter will be required to have their tags validated on Fort Hunter Liggett prior to leaving.
(4) Due to military operations and training, the specified season dates within the exterior boundaries of Fort Hunter Liggett are subject to further restriction, cancellation, or may be rescheduled, between August 1 and January 31, by the Commanding Officer.
(q) Camp Roberts Special Conditions:
(1) All tagholders will be required to attend a mandatory hunter orientation. Tagholders will be notified of the time and location of the orientation meeting after receipt of their elk license tags.

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(2) Tagholders shall be required to purchase an annual hunting pass available from Camp Roberts.
(3) All successful tagholders will be required to have their tags validated on Camp Roberts prior to leaving.
(4) Due to military operations and training, the specified season dates within the exterior boundaries of Camp Roberts are subject to further restriction, cancellation, or may be rescheduled, between August 1 and January 31, by the Commanding Officer.

[*Proposed 2016 Elk Tag Allocations are shown in ranges*]

§	Hunt	1. Bull Tags	2. Antlerless Tags	3. Either-Sex Tags	4. Spike Tags
		5. Season			
(r) Department Administered General Methods Roosevelt Elk Hunts					
(1)(A)	Siskiyou Period 1	[0-40]	[0-40]		
		Shall open on the second Saturday in September and continue for 12 consecutive days.			
(B)	Period 2	[0-10]	[0-40]		
		Shall open on the last Saturday in September and continue for 12 consecutive days.			
(C)	Period 3	[0-5]	[0-20]		
		Shall open on the first Wednesday in November and continue for 16 consecutive days.			
(2)(A)	Del Norte Period 1	[0-15]	[0-25]	[0-10]	
		Shall open on September 1 and continue for 20 consecutive days.			
(B)	Period 2	[0-15]	[0-25]	[0-10]	
		Shall open on October 1 and continue for 20 consecutive days.			
(C)	Period 3	[0-15]	[0-25]	[0-10]	
		Shall open on November 1 and continue for 20 consecutive days.			

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(D)	Period 4	[0-15]	[0-25]	[0-10]	
		Shall open on December 1 and continue for 20 consecutive days.			
(E)	Period 5	[0-15]	[0-25]	[0-10]	
		Shall open on January 1 and continue for 20 consecutive days.			
(3)(A)	Humboldt Period 1	[0-20]	[0-50]	[0-10]	
		Shall open on September 1 and continue for 20 consecutive days.			
(B)	Period 2	[0-20]	[0-50]	[0-10]	
		Shall open on October 1 and continue for 20 consecutive days.			
(C)	Period 3	[0-20]	[0-50]	[0-10]	
		Shall open on November 1 and continue for 20 consecutive days.			
(D)	Period 4	[0-20]	[0-50]	[0-10]	
		Shall open on December 1 and continue for 20 consecutive days.			
(E)	Period 5	[0-20]	[0-50]	[0-10]	
		Shall open on January 1 and continue for 20 consecutive days.			
(4)(A)	Marble Mountain North Period 1	[0-50]	[0-20]		
		Shall open on the second Saturday in September and continue for 12 consecutive days.			
(B)	Period 2	[0-10]	[0-40]		
		Shall open on the last Saturday in September and continue for 12 consecutive days.			
(C)	Period 3	[0-5]	[0-15]		
		Shall open on the first Wednesday in November and continue for 16 consecutive days.			

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(5)(A)	Marble Mountain South Period 1	[0-50]	[0-20]		
		Shall open on the second Saturday in September and continue for 12 consecutive days.			
(B)	Period 2	[0-10]	[0-40]		
		Shall open on the last Saturday in September and continue for 12 consecutive days.			
(C)	Period 3	[0-5]	[0-15]		
		Shall open on the first Wednesday in November and continue for 16 consecutive days.			
(s) Department Administered General Methods Rocky Mountain Elk Hunts					
(1)(A)	Northeast California Bull	[0-30]			
		The bull season shall begin on September 19 and continue for 12 consecutive days			
(B)	Antlerless		[0-20]		
		The antlerless season shall begin on the second Saturday in November and continue for 12 consecutive days.			
(t) Department Administered General Methods Roosevelt/Tule Elk Hunts					
(1)(A)	Mendocino North Coast Bull	[0-10]			
		The bull season shall open on the Wednesday preceding the third Saturday in August and continue for 10 consecutive days.			
(B)	Antlerless		[0-40]		
		The antlerless season shall open the first Saturday in November and continue for 10 consecutive days.			
(2)(A)	Mendocino Middle Fork Bull	[0-10]			
		The bull season shall open on the Wednesday preceding the third Saturday in August and continue for 10 consecutive days.			
(A)	Antlerless		[0-40]		
		The antlerless season shall open the first Saturday in November and continue for 10 consecutive days.			

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(3)(A)	Mendocino Upper Russian River Bull	[0-10]			
		The bull season shall open on the Wednesday preceding the third Saturday in August and continue for 10 consecutive days			
(B)	Antlerless		[0-40]		
		The antlerless season shall open the first Saturday in November and continue for 10 consecutive days.			
(4)(A)	Mendocino Little Lake Bull	[0-5]			
		The bull season shall open on the Wednesday preceding the third Saturday in August and continue for 10 consecutive days			
(A)	Antlerless		[0-10]		
		The antlerless season shall open the first Saturday in November and continue for 10 consecutive days.			
(5)(A)	Mendocino South Coast Bull	[0-5]			
		The bull season shall open on the Wednesday preceding the third Saturday in August and continue for 10 consecutive days			
(B)	Antlerless		[0-10]		
		The antlerless season shall open the first Saturday in November and continue for 10 consecutive days.			
(u) Department Administered General Methods Tule Elk Hunts					
(1)(A)	Cache Creek Bull	[0-10]			
		The Bull season shall open on the second Saturday in October and continue for 16 consecutive days.			
(B)	Antlerless		[0-10]		
		The Antlerless season shall open on the third Saturday in October and continue for 16 consecutive days.			
(2)(A)	La Panza Period 1	[0-20]	[0-30]		
		Shall open on the second Saturday in October and extend for 23 consecutive days			

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(B)	Period 2	[0-20]	[0-30]		
		Shall open on the second Saturday in November and extend for 23 consecutive days.			
(3)(A)	Bishop Period 3	[0-10]	[0-30]		
		Shall open on the third Saturday in October and extend for 9 consecutive days.			
(B)	Period 4	[0-10]	[0-30]		
		Shall open on the first Saturday in November and extend for 9 consecutive days.			
(C)	Period 5	[0-10]	[0-30]		
		Shall open on the first Saturday in December and continue for 9 consecutive days.			
(4)(A)	Independence Period 2	[0-10]	[0-30]		
		Shall open on the first Saturday in October and extend for 9 consecutive days.			
(B)	Period 3	[0-10]	[0-30]		
		Shall open on the third Saturday in October and extend for 9 consecutive days.			
(C)	Period 4	[0-10]	[0-30]		
		Shall open on the first Saturday in November and extend for 9 consecutive days.			
(D)	Period 5	[0-10]	[0-30]		
		Shall open on the first Saturday in December and continue for 9 consecutive days.			
(5)(A)	Goodale Period 1	[0-10]	[0-10]		
		Shall open on the second Saturday in September and extend for 16 consecutive days.			
(B)	Period 2	[0-10]	[0-10]		
		Shall open on the first Saturday in October and extend for 9 consecutive days.			

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(C)	Period 3	[0-10]	[0-10]		
		Shall open on the third Saturday in October and extend for 9 consecutive days.			
(D)	Period 4	[0-10]	[0-10]		
		Shall open on the first Saturday in November and extend for 9 consecutive days.			
(E)	Period 5	[0-10]	[0-10]		
		Shall open on the first Saturday in December and continue for 9 consecutive days.			
(6)(A)	Lone Pine Period 2	[0-10]	[0-30]		
		Shall open on the first Saturday in October and extend for 9 consecutive days.			
(B)	Period 3	[0-10]	[0-30]		
		Shall open on the third Saturday in October and extend for 9 consecutive days.			
(C)	Period 4	[0-10]	[0-30]		
		Shall open on the first Saturday in November and extend for 9 consecutive days.			
(D)	Period 5	[0-10]	[0-30]		
		Shall open on the first Saturday in December and continue for 9 consecutive days.			
(7)(A)	Tinemaha Period 2	[0-10]	[0-30]		
		Shall open on the first Saturday in October and extend for 9 consecutive days.			
(B)	Period 3	[0-10]	[0-30]		
		Shall open on the third Saturday in October and extend for 9 consecutive days.			
(C)	Period 4	[0-10]	[0-30]		
		Shall open on the first Saturday in November and extend for 9 consecutive days.			

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(D)	Period 5	[0-10]	[0-30]		
		Shall open on the first Saturday in December and continue for 9 consecutive days.			
(8)(A)	West Tinemaha Period 1	[0-10]	[0-30]		
		Shall open on the second Saturday in September and extend for 16 consecutive days.			
(B)	Period 2	[0-10]	[0-30]		
		Shall open on the first Saturday in October and extend for 9 consecutive days.			
(C)	Period 3	[0-10]	[0-30]		
		Shall open on the third Saturday in October and extend for 9 consecutive days.			
(D)	Period 4	[0-10]	[0-30]		
		Shall open on the first Saturday in November and extend for 9 consecutive days.			
(E)	Period 5	[0-10]	[0-30]		
		Shall open on the first Saturday in December and continue for 9 consecutive days.			
(9)(A)	Tinemaha Mountain Period 1	[0-8]			
		Shall open on the second Saturday in September and extend for 16 consecutive days.			
(B)	Period 2	[0-8]			
		Shall open on the first Saturday in October and extend for 9 consecutive days.			
(C)	Period 3	[0-8]			
		Shall open on the third Saturday in October and extend for 9 consecutive days			
(D)	Period 4	[0-8]			
		Shall open on the first Saturday in November and extend for 9 consecutive days.			

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(E)	Period 5	[0-8]			
		Shall open on the first Saturday in December and continue for 9 consecutive days.			
(10)(A)	Whitney Period 2	[0-4]	[0-10]		
		Shall open on the first Saturday in October and extend for 9 consecutive days.			
(B)	Period 3	[0-4]	[0-10]		
		Shall open on the third Saturday in October and extend for 9 consecutive days			
(C)	Period 4	[0-4]	[0-10]		
		Shall open on the first Saturday in November and extend for 9 consecutive days.			
(D)	Period 5	[0-4]	[0-10]		
		Shall open on the first Saturday in December and continue for 9 consecutive days.			
(11)(A)	Grizzly Island Period 1	[0-3]	[0-12]		[0-10]
		Shall open on the second Tuesday after the first Saturday in August and continue for 4 consecutive days.			
(B)	Period 2	[0-3]	[0-12]		[0-10]
		Shall open on the first Thursday following the opening of period one and continue for 4 consecutive days.			
(C)	Period 3	[0-3]	[0-12]		[0-10]
		Shall open on the first Tuesday following the opening of period two and continue for 4 consecutive days			
(D)	Period 4	[0-3]	[0-12]		[0-10]
		Shall open on the first Thursday following the opening of period three and continue for 4 consecutive days.			
(E)	Period 5	[0-3]	[0-12]		[0-10]
		Shall open on the first Tuesday following the opening of period four and continue for 4 consecutive days			

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(F)	Period 6	[0-3]	[0-12]		[0-10]
		Shall open on the first Thursday following the opening of period five and continue for 4 consecutive days.			
(G)	Period 7	[0-3]	[0-12]		[0-10]
		Shall open on the first Tuesday following the opening of period six and continue for 4 consecutive days			
(H)	Period 8	[0-3]	[0-12]		[0-10]
		Shall open on the first Thursday following the opening of period seven and continue for 4 consecutive days.			
(I)	Period 9	[0-3]	[0-12]		[0-10]
		Shall open on the first Tuesday following the opening of period eight and continue for 4 consecutive days.			
(J)	Period 10	[0-3]	[0-12]		[0-10]
		Shall open on the first Thursday following the opening of period nine and continue for 4 consecutive days.			
(K)	Period 11	[0-3]	[0-12]		[0-10]
		Shall open on the first Tuesday following the opening of period ten and continue for 4 consecutive days.			
(L)	Period 12	[0-3]	[0-12]		[0-10]
		Shall open on the first Thursday following the opening of period eleven and continue for 4 consecutive days.			
(M)	Period 13	[0-3]	[0-12]		[0-10]
		Shall open on the first Tuesday following the opening of period twelve and continue for 4 consecutive days.			
(12)(A)	Fort Hunter Liggett Central Coast General Public Period 1	[0-14]	[0-16]		
		Shall open on the first Thursday in November and continue for 9 consecutive days.			
(B)	Period 2	[0-14]	[0-16]		
		Shall open November 22 and continue for 9 consecutive days.			

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(C)	Period 3	[0-14]	[0-14]		
		Shall open on the third Saturday in December and continue for 16 consecutive days.			
(13)(A)	East Park Reservoir	[0-6]	[0-20]		
		Shall open the first Saturday in September and continue for 27 consecutive days.			
(14)(A)	San Luis Reservoir Period 1	[0-10]	[0-20]	[0-10]	
		Shall open on the first Saturday in October and continue for 23 consecutive days.			
(B)	Period 2	[0-10]	[0-20]	[0-10]	
		Shall open on the second Saturday in November and continue for 12 consecutive days.			
(C)	Period 3	[0-10]	[0-20]	[0-10]	
		Shall open on the third Saturday in December and continue for 12 consecutive days.			
(15)(A)	Bear Valley	[0-10]	[0-10]		
		Shall open on the second Saturday in October and continue for 9 consecutive days.			
(16)(A)	Lake Pillsbury Period 1	[0-10]	[0-10]		
		Shall open on the Monday following the fourth Saturday in September and continue for 10 consecutive days.			
(B)	Period 2	[0-10]	[0-10]		
		Shall open on the second Wednesday in October and continue for 10 consecutive days.			
(C)	Period 3	[0-10]	[0-10]		
		Shall open on the fourth Wednesday in October and continue for 10 consecutive days.			
(17)(A)	Santa Clara	[0-15]	[0-20]		
		Shall open on the second Saturday in October and continue for 16 consecutive days.			

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(18)(A)	Alameda	[0-4]	[0-10]		
		Shall open on the second Saturday in October and continue for 16 consecutive days.			
(19)(A)	San Emigdio Mountain	[0-15]	[0-40]		
		Shall open on the second Saturday in November and continue for 14 consecutive days.			
(20)(A)	Camp Roberts Public Period 1	[0-10]	[0-20]		
		Shall open on the third Saturday in September and continue for 16 consecutive days.			
(B)	Period 2	[0-10]	[0-20]		
		Shall open on the second Saturday in November and continue for 16 consecutive days			
(C)	Period 3	[0-10]	[0-20]		
		Shall open 16 days prior to January 2 and continue for 16 consecutive days.			
(v) Department Administered Apprentice Hunts					
(1)(A)	Siskiyou General Methods Roosevelt Elk Apprentice			[0-2]	
		Shall open on the second Saturday in September and continue for 12 consecutive days.			
(2)(A)	Marble Mountain North General Methods Roosevelt Elk Apprentice			[0-4]	
		Shall open on the second Saturday in September and continue for 12 consecutive days.			
(3)(A)	Marble Mountain South General Methods Roosevelt Elk Apprentice			[0-4]	
		Shall open on the second Saturday in September and continue for 12 consecutive days.			
(4)(A)	Northeast California General Methods Rocky Mountain Elk Apprentice			[0-4]	
		Shall open on the Wednesday preceding the third Saturday in September and continue for 12 consecutive days			

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(5)(A)	Cache Creek General Methods Tule Elk Apprentice	[0-2]	[0-2]		
		Shall open on the second Saturday in October and continue for 16 consecutive days.			
(6)(A)	La Panza General Methods Tule Elk Apprentice	[0-2]	[0-2]		
		Shall open on the second Saturday in October and extend for 23 consecutive days.			
(7)(A)	Bishop General Methods Tule Elk Apprentice Period 2	[0-10]	[0-30]		
		Shall open on the first Saturday in October and extend for 9 consecutive days.			
(8)(A)	Grizzly Island General Methods Tule Elk Apprentice Period 1		[0-4]		[0-4]
		Shall open on the second Tuesday after the first Saturday in August and continue for 4 consecutive days			
(B)	Period 2		[0-4]		[0-4]
		Shall open on the first Thursday following the opening of period one and continue for 4 consecutive days.			
(C)	Period 3		[0-4]		[0-4]
		Shall open on the first Tuesday following the opening of period two and continue for 4 consecutive days.			
(D)	Period 4		[0-4]		[0-4]
		Shall open on the first Thursday following the opening of period three and continue for 4 consecutive days.			
(9)(A)	Fort Hunter Liggett Central Coast General Public General Methods Apprentice	[0-2]	[0-8]		
		Shall open on the third Saturday in December and continue for 16 consecutive days.			
(w) Department Administered Archery Only Hunts					
(1)(A)	Northeast California Archery Only	[0-10]	[0-10]	[0-20]	
		Shall open on the Wednesday preceding the first Saturday in September and continue for 12 consecutive days			

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(2)(A)	Owens Valley Multiple Zone Archery Only	[0-10]	[0-10]		
		Shall open on the second Saturday in August and extend for 9 consecutive days.			
(3)(A)	Goodale Archery Only Period 1	[0-10]	[0-10]		
		Shall open on the second Saturday in September and extend for 16 consecutive days.			
(4)(A)	Lone Pine Archery Only Period 1	[0-10]	[0-30]		
		Shall open on the second Saturday in September and extend for 16 consecutive days.			
(5)(A)	Tinemaha Archery Only Period 1	[0-10]	[0-30]		
		Shall open on the second Saturday in September and extend for 16 consecutive days.			
(6)(A)	Whitney Archery Only Period 1	[0-10]	[0-30]		
		Shall open on the second Saturday in September and extend for 16 consecutive days.			
(7)(A)	Fort Hunter Liggett Central Coast General Public Archery Only Either Sex			[0-10]	
		Shall open on the last Wednesday in July and continue for 9 consecutive days			
(B)	Fort Hunter Liggett Central Coast General Public Archery Only Antlerless		[0-10]		
		Shall open on the last Wednesday in September and continue for 9 consecutive days			
(x) Department Administered Muzzleloader Only Tule Elk Hunts					
(1)(A)	Bishop Muzzleloader Only Period 1	[0-10]	[0-30]		
		Shall open on the second Saturday in September and extend for 16 consecutive days.			
(2)(A)	Independence Muzzleloader Only Period 1	[0-10]	[0-10]		
		Shall open on the second Saturday in September and extend for 16 consecutive days.			
(3)(A)	Goodale Muzzleloader Only Period 1	[0-10]	[0-10]		
		Shall open on the second Saturday in September and extend for 16 consecutive days.			

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(4)(A)	Fort Hunter Liggett Central Coast General Public Muzzleloader Only	[0-6]	[0-10]		
		Shall open on the second Saturday in October and continue for 12 consecutive days.			
(*y*) Department Administered Muzzleloader/Archery Only Hunts					
(1)(A)	Siskiyou Muzzleloader/Archery Roosevelt Elk			[0-20]	
		Shall open on the last Wednesday in August and continue for 9 consecutive days.			
(2)(A)	Marble Mountain North Muzzleloader/Archery Roosevelt Elk			[0-20]	
		Shall open on the last Wednesday in August and continue for 9 consecutive days.			
(3)(B)	Marble Mountain South Muzzleloader/Archery Roosevelt Elk			[0-20]	
		Shall open on the last Wednesday in August and continue for 9 consecutive days.			
(z) Fund Raising Elk Tags					
(1)(A)	Multi-zone Fund Raising Tags	1			
		Shall open on the second Saturday in August and continue for 90 consecutive days.			
(2)(A)	Grizzly Island Fund Raising Tags	1			
		Shall open on the first Saturday in August and continue for 30 consecutive days.			
(3)(A)	Owens Valley Fund Raising Tags	1			
		Shall open on the last Saturday in July and extend for 30 consecutive days.			
(aa) Military Only Tule Elk Hunts					
(1)(A)	Fort Hunter Liggett Military Only General Methods Early Season	[0-2]	[0-2]		
		The early season shall open on the second Monday in August and continue for 5 consecutive days and reopen on the fourth Monday in August and continue for 5 consecutive days.			
(B)	Period 1		[0-16]		
		Shall open on the first Thursday in November and continue for 9 consecutive days.			

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(C)	Period 2		[0-14]		
		Shall open November 22 and continue for 9 consecutive days.			
(D)	Period 3	[0-14]			
		Shall open on the third Saturday in December and continue for 16 consecutive days			
(2)(A)	Fort Hunter Liggett Military Only General Methods Apprentice	[0-2]	[0-8]		
		Shall open on the third Saturday in December and continue for 16 consecutive days.			
(3)(A)	Fort Hunter Liggett Military Only Archery Only Either sex			[0-6]	
		Shall open on the last Wednesday in July and continue for 9 consecutive days			
(B)	Antlerless		[0-10]		
		Shall open on the last Wednesday in September and continue for 9 consecutive days.			
(4)(B)	Fort Hunter Liggett Military Only Muzzleloader Only	[0-6]			
		Shall open on the second Saturday in October and continue for 12 consecutive days.			
(5)(A)	Camp Roberts Military Only General Methods Period 1	[0-10]	[0-20]		
		Shall open on the third Saturday in September and continue for 16 consecutive days.			
(B)	Period 2	[0-10]	[0-20]		
		Shall open on the second Saturday in November and continue for 16 consecutive days.			
(C)	Period 3	[0-10]	[0-20]		
		Shall open 16 days prior to January 2 and continue for 16 consecutive days.			

Note: Authority cited: Sections 200, 202, 203, 332 and 1050, Fish and Game Code. Reference: Sections ~~203, 203.1,~~ 332~~, 713~~ and 1050, Fish and Game Code.

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STATE OF CALIFORNIA
FISH AND GAME COMMISSION
INITIAL STATEMENT OF REASONS FOR REGULATORY ACTION
(Pre-Publication of Notice Statement)

Amend Section 364.1
Title 14, California Code of Regulations (CCR)
Re: SHARE Elk Hunts

I. Date of Initial Statement of Reasons: October 12, 2015

II. Dates and Locations of Scheduled Hearings:

(a)	Notice Hearing:	Date:	December 10, 2015
		Location:	San Diego, CA
(b)	Discussion Hearing:	Date:	February 11, 2016
		Location:	Sacramento, CA
(c)	Adoption Hearing:	Date:	April 14, 2016
		Location:	Santa Rosa, CA

III. Description of Regulatory Action:

(a) Statement of Specific Purpose of Regulation Change and Factual Basis for Determining that Regulation Change is Reasonably Necessary:

1. <u>It is necessary for the Department of Fish and Wildlife (Department) to improve the hunting regulations and make them more user-friendly.</u>

Section 364.1, SHARE Elk Hunts, is proposed to be amended in conjunction with the amendments to Section 364, Elk. This is necessary because of the addition of new hunt zones, zone splitting, zone boundary modifications, and tag quota modifications in the amended 364 regulations. The SHARE private property elk hunts correspond with elk hunts identified in 364. These regulations authorize SHARE elk hunts with separate seasons and tag quotas. Tag issuance will be through the SHARE program utilizing the department's existing tag distribution procedures.

Current subsection 364.1(c) contains a Table setting forth the hunt tag quotas. CDFW proposes to move the area descriptions (in the same order and number as provided in Section 364) to the table. For example, part of the current regulation in subsection 364(a) reads as follows:

"§ 364.1. SHARE Elk Hunts.
(a) Department Administered Shared Habitat Alliance for Recreational Enhancement (SHARE) Elk Hunts:

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(1) Siskiyou Roosevelt Elk SHARE Hunt:
(A) Area: Within the boundaries identified in Section 364(a)(1)(A). Individual property boundaries will be identified in the SHARE application package."

The Table will be formatted in the same order as the hunts described in Section 364 and the Areas will be placed in the amended Table as shown in the example below:

§ 364.1. SHARE: Department Administered Shared Habitat Alliance for Recreational Enhancement Elk Hunts

§	Hunt	(A) Tag Quota	1. Bull Tags	2. Antlerless Tags	3. Either-Sex Tags	4. Spike Tags
			(B) Area			
(i) Department Administered SHARE Roosevelt Elk Hunts						
(1)	Siskiyou		10	10		
			(B) Area: The tag shall be valid in the area described in subsection 364(a)(1)(A).			

The complete Table and text is found in the attached amended Regulatory Text of Section 364.1.

2. Number of Tags.

In order to achieve appropriate harvest levels and maintain hunting quality it is necessary to annually adjust quotas (total number of tags) in response to dynamic environmental and biological conditions. Department regulations specify elk license tag quotas for each hunt in accordance with management goals and objectives. The proposed amendments will modify Section 364.1, adding a new subsection (a) to include a Table which specifies the number of elk tags in each hunt area for the 2016 season. However, the amendments to Section 364.1 will begin with a range of tags (expressed as [0 - 40], etc.) since the final recommendations for quotas cannot be determined until winter survey data and harvest results are analyzed.

The final number of tags will be recommended to the Commission at the adoption hearing in April 2016, based upon the completion of winter elk surveys and resulting data analysis.

(b) Authority and Reference:

Authority: Fish and Game Code sections 200, 202, 203, 332 and 1050.
Reference: Fish and Game Code sections 203, 203.1, 332, 713, and 1050.

(c) Specific Technology or Equipment Required by Regulatory Change: None.

(d) Identification of Reports or Documents Supporting Regulation Change:

2016 Draft Environmental Document Regarding Elk Hunting

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(e) Public Discussions of Proposed Regulations Prior to Notice Publication:

A public discussion was held at the Fish and Game Commission's Wildlife Resources Committee meeting held on September 9, 2015 in Fresno, California.

IV. Description of Reasonable Alternatives to Regulatory Action:

(a) Alternatives to Regulation Change:

No alternatives were identified. Elk tag quotas must be adjusted periodically in response to a variety of environmental and biological conditions including forage availability, population structure, and overwinter survival rates. Elk populations have increased and landowner conflicts have also escalated in several areas. Adjusting tag quotas provides for appropriate harvest levels within the zones.

Failure to adjust SHARE hunt areas in Section 364.1 to correspond with elk hunts in Section 364 would create inconsistency in regulation regarding both zone boundaries and tag ranges.

(b) No Change Alternative:

The no change alternative was considered and rejected because Section 364.1 must correspond with the elk hunts described in amended Section 364; not doing so would create confusion in both zone boundaries and tag ranges.

(c) Consideration of Alternatives:

In view of information currently possessed, no reasonable alternative considered would be more effective in carrying out the purpose for which the regulation is proposed, would be as effective and less burdensome to affected private persons than the proposed regulation, or would be more cost effective to affected private persons and equally effective in implementing the statutory policy or other provision of law.

V. Mitigation Measures Required by Regulatory Action:

The proposed regulatory action will have no negative impact on the environment; therefore, no mitigation measures are needed. The number of tags that will be issued from the newly proposed range will result in a harvest that is at or below the harvest analyzed in the 2016 Draft Environmental Document Regarding Elk hunting.

VI. Impact of Regulatory Action.

This proposed action adjusts tag quotas. Given the number of tags available, and the area over which they are distributed, this proposal is economically neutral to business.

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(a) Significant Statewide Adverse Economic Impact Directly Affecting Businesses, Including the Ability of California Businessmen to Compete with Businesses in Other States.

The proposed action will not have a significant statewide economic impact directly affecting business, including the ability of California businesses to compete with businesses in other states. Considering the small number of tags issued over the entire state, this proposal is economically neutral to business.

(b) Impact on the Creation or Elimination of Jobs Within the State, the Creation of New Businesses or the Elimination of Existing Businesses, or the Expansion of Businesses in California; Benefits of the Regulation to the Health and Welfare of California Residents, Worker Safety, and the State's Environment:

The proposed action will not affect jobs or businesses in California and does not provide benefits to worker safety.

The Commission anticipates benefits to the health and welfare of California residents. Hunting provides opportunities for multi-generational family activities and promotes respect for California's environment by the future stewards of the State's resources. The Commission anticipates benefits to the State's environment in the sustainable management of natural resources.

(c) Cost Impacts on Representative Private Persons/Business.

The Commission is not aware of any cost impacts that a representative private person or business would necessarily incur in reasonable compliance with this proposed action.

(d) Costs or Savings to State Agencies or Costs/Savings in Federal Funding to the State. None.

(e) Other Nondiscretionary Costs/Savings to Local Agencies. None.

(f) Programs Mandated on Local Agencies or School Districts. None.

(g) Costs Imposed on Any Local Agency or School District that is Required to be Reimbursed under Part 7 (commencing with Section 17500) of Division 4. None.

(h) Effect on Housing Costs. None.

VII. Economic Impact Assessment.

The proposed action will have no statewide economic or fiscal impact because the proposed action will not constitute a significant change from the last elk season. The number of tags to be set in regulation for 2016 is intended to achieve or maintain the levels set forth in the approved management plans to sustainably

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manage elk populations and maintain hunting opportunities in subsequent seasons.

(a) Effects of the regulation on the creation or elimination of jobs within the State:

The regulation will not affect the creation or elimination of jobs because no significant changes in hunting activity levels are anticipated.

(b) Effects of the regulation on the creation of new businesses or the elimination of existing businesses within the State:

The regulation will not impact the creation of new businesses or the elimination of businesses because no significant changes in hunting activity levels are anticipated.

(c) Effects of the regulation on the expansion of businesses currently doing business within the State

The regulation will not affect the expansion of businesses currently doing business within the State because no significant changes in hunting activity levels are anticipated.

(d) Benefits of the regulation to the health and welfare of California residents:

The proposed regulation will not have a direct benefit on the health and welfare of California residents.

(e) Benefits of the regulation to worker safety.

The proposed regulation will not affect worker safety.

(f) Benefits of the regulation to the State's environment

It is the policy of the State to encourage the conservation, maintenance, and utilization of the living resources. The proposed action will further this core objective.

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INFORMATIVE DIGEST
(Policy Statement Overview)

Current regulations in Section 364.1, SHARE Elk Hunts, T14, CCR, specify elk tag quotas for each hunt area. In order to achieve elk herd management goals and objectives and maintain hunting quality, it is periodically necessary to adjust quotas in response to dynamic environmental and biological conditions. In conjunction with proposed amendments to Section 364, Elk, which will delete, amend and add hunt areas, it is necessary to similarly amend Section 364.1 for consistency.

Preliminary tag quota ranges are indicated pending final 2016 tag allocations in accordance with elk management goals and objectives. Survey data collected between October 2015, and March 2016, will be the basis for the final tag numbers recommended to the Commission at the April 2016 adoption hearing. The quota ranges for 2016 elk tags are indicated in the proposed Regulatory Text.

Other minor editorial changes and renumbering have also been made.

The complete Table and text is found in the attached proposed Regulatory Text of Section 364.1.

Benefits of the regulations

The proposed regulations will contribute to the sustainable management of elk populations in California. Existing elk herd management goals specify objective levels for the proportion of bulls in the herds. These ratios are maintained and managed in part by annually modifying the number of tags. The final values for the license tag numbers will be based upon findings from annual harvest and herd composition counts where appropriate.

Non-monetary benefits to the public

The Commission does not anticipate non-monetary benefits to the protection of public health and safety, worker safety, the prevention of discrimination, the promotion of fairness or social equity and the increase in openness and transparency in business and government.

Consistency with State or Federal Regulations

The Fish and Game Commission, pursuant to Fish and Game Code Sections 200, 202 and 203, has the sole authority to regulate elk hunting in California. Commission staff has searched the California Code of Regulations and has found the proposed changes pertaining to elk tag allocations are consistent with Title 14. Therefore the Commission has determined that the proposed amendments are neither inconsistent nor incompatible with existing State regulations.

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REGULATORY TEXT

Section 364.1 is amended to read:

§ 364.1. SHARE ~~Elk Hunts.~~
~~(a)~~ : Department Administered Shared Habitat Alliance for Recreational Enhancement (SHARE) Elk Hunts
~~(1) Siskiyou Roosevelt Elk SHARE Hunt:~~
~~(A) Area: Within the boundaries identified in Section 364(a)(1)(A). Individual property boundaries will be identified in the SHARE application package.~~
~~(2) Big Lagoon Roosevelt Elk SHARE Hunt:~~
~~(A) Area: Within the boundaries identified in Section 364(a)(2)(A). Individual property boundaries will be identified in the SHARE application package.~~
~~(3) Northwestern California Roosevelt Elk SHARE Hunt:~~
~~(A) Area: Within the boundaries identified in Section 364(a)(3)(A). Individual property boundaries will be identified in the SHARE application package.~~
~~(4) Klamath Roosevelt Elk SHARE Hunt:~~
~~(A) Area: Within the boundaries identified in Section 364(a)(4)(A). Individual property boundaries will be identified in the SHARE application package.~~
~~(5) Del Norte Roosevelt Elk SHARE Hunt:~~
~~(A) Area: Within the boundaries identified in Section 364(a)(5)(A). Individual property boundaries will be identified in the SHARE application package.~~
~~(6) Marble Mountains Roosevelt Elk SHARE Hunt~~
~~(A) Area: Within the boundaries identified in Section 364(a)(6)(A). Individual property boundaries will be identified in the SHARE application package.~~
~~(7) Northeastern California Rocky Mountain Elk SHARE Hunt:~~
~~(A) Area: Within the boundaries identified in Section 364(b)(1)(A). Individual property boundaries will be identified in the SHARE application package.~~
~~(8) Mendocino Elk SHARE Hunt:~~
~~(A) Area: Within the boundaries identified in Section 364(c)(1)(A). Individual property boundaries will be identified in the SHARE application package.~~
~~(9) Cache Creek Tule Elk SHARE Hunt:~~
~~(A) Area: Within the boundaries identified in Section 364(d)(1)(A). Individual property boundaries will be identified in the SHARE application package.~~
~~(10) La Panza Tule Elk SHARE Hunt:~~
~~(A) Area: Within the boundaries identified in Section 364(d)(2)(A). Individual property boundaries will be identified in the SHARE application package.~~
~~(11) Bishop Tule Elk SHARE Hunt:~~
~~(A) Area: Within the boundaries identified in Section 364(d)(3)(A). Individual property boundaries will be identified in the SHARE application package.~~
~~(12) Independence Tule Elk SHARE Hunt:~~
~~(A) Area: Within the boundaries identified in Section 364(d)(4)(A). Individual property boundaries will be identified in the SHARE application package.~~
~~(13) Lone Pine Tule Elk SHARE Hunt:~~
~~(A) Area: Within the boundaries identified in Section 364(d)(5)(A). Individual property boundaries will be identified in the SHARE application package.~~

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~~(14) Tinemaha Tule Elk SHARE Hunt:~~
~~(A) Area: Within the boundaries identified in Section 364(d)(6)(A). Individual property boundaries will be identified in the SHARE application package.~~
~~(15) West Tinemaha Tule Elk SHARE Hunt:~~
~~(A) Area: Within the boundaries identified in Section 364(d)(7)(A). Individual property boundaries will be identified in the SHARE application package.~~
~~(16) Tinemaha Mountain Tule Elk SHARE Hunt:~~
~~(A) Area: Within the boundaries identified in Section 364(d)(8)(A). Individual property boundaries will be identified in the SHARE application package.~~
~~(17) Whitney Tule Elk SHARE Hunt:~~
~~(A) Area: Within the boundaries identified in Section 364(d)(9)(A). Individual property boundaries will be identified in the SHARE application package.~~
~~(18) Grizzly Island Tule Elk SHARE Hunt:~~
~~(A) Area: Within the boundaries identified in Section 364(d)(10)(A). Individual property boundaries will be identified in the SHARE application package.~~
~~(19) Fort Hunter Liggett General Public Tule Elk SHARE Hunt:~~
~~(A) Area: Within the boundaries identified in Section 364(d)(11)(A). Individual property boundaries will be identified in the SHARE application package.~~
~~(20) East Park Reservoir Tule Elk SHARE Hunt:~~
~~(A) Area: Within the boundaries identified in Section 364(d)(12)(A). Individual property boundaries will be identified in the SHARE application package.~~
~~(21) San Luis Reservoir Tule Elk SHARE Hunt:~~
~~(A) Area: Within the boundaries identified in Section 364(d)(13)(A). Individual property boundaries will be identified in the SHARE application package.~~
~~(22) Bear Valley Tule Elk SHARE Hunt:~~
~~(A) Area: Within the boundaries identified in Section 364(d)(14)(A). Individual property boundaries will be identified in the SHARE application package.~~
~~(23) Lake Pillsbury Tule Elk SHARE Hunt:~~
~~(A) Area: Within the boundaries identified in Section 364(d)(15)(A). Individual property boundaries will be identified in the SHARE application package.~~
~~(24) Santa Clara Tule Elk SHARE Hunt:~~
~~(A) Area: Within the boundaries identified in Section 364(d)(16)(A). Individual property boundaries will be identified in the SHARE application package.~~
~~(25) Alameda Tule Elk SHARE Hunt:~~
~~(A) Area: Within the boundaries identified in Section 364(d)(17)(A). Individual property boundaries will be identified in the SHARE application package.~~
~~(b)~~ (a) Season: The overall season shall open on the August 15 through January 31. Individual SHARE properties will be assigned seasons corresponding with management goals.
~~(c) Number of SHARE Elk License Tags~~

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	~~2015 Final SHARE Elk Tag Allocation~~				
	~~Hunt Name~~	~~Bull~~	~~Antlerless~~	~~Either-sex~~	~~Spike~~
~~(1)~~	~~Siskiyou~~	~~10~~	~~10~~	-	-
~~(2)~~	~~Big Lagoon~~	~~0~~	~~0~~	-	-
~~(3)~~	~~Northwestern California~~	~~0~~	~~0~~	~~0~~	-
~~(4)~~	~~Klamath~~	~~0~~	~~0~~	-	-
~~(5)~~	~~Del Norte~~	~~0~~	~~0~~	-	-
~~(6)~~	~~Marble Mountains~~	~~5~~	~~10~~	-	-
~~(7)~~	~~Northeastern California~~	~~0~~	~~0~~	-	-
~~(8)~~	~~Mendocino~~	~~2~~	~~2~~	-	-
~~(9)~~	~~Cache Creek~~	~~1~~	~~1~~	-	-
~~(10)~~	~~La Panza~~	~~12~~	~~11~~	-	-
~~(11)~~	~~Bishop~~	~~0~~	~~0~~	-	-
~~(12)~~	~~Independence~~	~~0~~	~~0~~	-	-
~~(13)~~	~~Lone Pine~~	~~0~~	~~0~~	-	-
~~(14)~~	~~Tinemaha~~	~~0~~	~~0~~	-	-
~~(15)~~	~~West Tinemaha~~	~~0~~	~~0~~	-	-
~~(16)~~	~~Tinemaha Mountain~~	~~0~~	-	-	-
~~(17)~~	~~Whitney~~	~~0~~	~~0~~	-	-
~~(18)~~	~~Grizzly Island~~	~~0~~	~~0~~	-	~~0~~
~~(19)~~	~~Fort Hunter Liggett~~	~~0~~	~~0~~	~~0~~	-
~~(20)~~	~~East Park Reservoir~~	~~2~~	~~4~~	-	-
~~(21)~~	~~San Luis Reservoir~~	~~0~~	~~0~~	~~5~~	-
~~(22)~~	~~Bear Valley~~	~~1~~	~~0~~	-	-
~~(23)~~	~~Lake Pillsbury~~	~~0~~	~~0~~	-	-
~~(24)~~	~~Santa Clara~~	~~0~~	-	-	-
~~(25)~~	~~Alameda~~	~~0~~	-	-	-

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~~(d)~~ (b) Bag and Possession Limit: Each elk tag is valid only for one elk per season and only in the SHARE hunt area drawn, and persons shall only be eligible for one elk tag per season through 364 or 364.1.

~~(e) Definitions:~~

~~(1) Bull elk: Any elk having an antler or antlers at least four inches in length as measured from the top of the skull.~~

~~(2) Spike bull: A bull elk having no more than one point on each antler. An antler point is a projection of the antler at least one inch long and longer than the width of its base.~~

~~(3) Antlerless elk: Any elk, with the exception of spotted calves, with antlers less than four inches in length as measured from the top of the skull.~~

~~(4) Either-sex elk: For the purposes of these regulations, either-sex is defined as bull elk or antlerless elk.~~

(c) Individual property boundaries will be identified in the SHARE application package.
~~(f)~~ (d) Method of Take: Only methods for taking elk as defined in Sections 353 and 354 may be used.
~~(g)~~ (e) Tagholder Responsibilities: See subsection 364(z).
~~(1) No tagholder shall take or possess any elk or parts thereof governed by the regulations except as provided herein.~~
~~(3) Any person taking an elk that has a collar or other marking device attached to it shall~~
~~(2) The department reserves the right to use any part of the tagholder's elk for biological analysis as long as the amount of edible meat is not appreciably decreased.~~
~~provide the department with such marking device within 10 days of taking the elk.~~
~~(h)~~ (f) The use of dogs to take or attempt to take elk is prohibited.
~~(i)~~ (g) Applicants shall apply for a SHARE Access Permit, and pay a nonrefundable application fee as specified in Section 602, through the department's Automated License Data System terminals at any department license agent, department license sales office, or online.
~~(j)~~ (h) Upon receipt of winner notification, successful applicants shall submit the appropriate tag fee as specified in Section 702 through any department license sales office or online through the department's Automated License Data System.

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§	(A) Hunts	1. Bull Tags	2. Antlerless Tags	3. Either-Sex Tags	4. Spike Tags
		(B) Area			
(i) Department Administered SHARE Roosevelt Elk Hunts					
(1)	Siskiyou	[0-55]	[0-100]		
		(B) Area: The tag shall be valid in the area described in subsection 364(a)(1)(A).			
(2)	Del Norte	[0-25]	[0-100]	[0-50]	
		(A) Area: The tag shall be valid in the area described in subsection 364(a)(2)(A).			
(3)	Humboldt	[0-25]	[0-100]	[0-50]	
		(B) Area: The tag shall be valid in the area described in subsection 364(a)(3)(A).			
(4)	Marble Mountain North	[0-20]	[0-25]		
		(B) Area: The tag shall be valid in the area described in subsection 364(a)(4)(A).			
(5)	Marble Mountain South	[0-20]	[0-25]		
		(B) Area: The tag shall be valid in the area described in subsection 364(a)(5)(A).			
(*j*) Department Administered General Methods SHARE Rocky Mountain Elk Hunts					
(1)	Northeast California	[0-20]	[0-20]		
		(B) Area: The tag shall be valid in the area described in subsection 364(b)(1)(A).			
(k) Department Administered SHARE Roosevelt/Tule Elk Hunts					
(1)	Mendocino North Coast	[0-10]	[0-40]		
		(B) Area: The tag shall be valid in the area described in subsection 364(c)(1)(A).			
(2)	Mendocino Middle Fork	[0-10]	[0-40]		
		(B) Area: The tag shall be valid in the area described in subsection 364(c)(2)(A).			
(3)	Mendocino Upper Russian River	[0-10]	[0-40]		
		(B) Area: The tag shall be valid in the area described in subsection 364(c)(3)(A).			

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(4)	Mendocino Little Lake	[0-1]	[0-5]		
		(B) Area: The tag shall be valid in the area described in subsection 364(c)(4)(A).			
(5)	Mendocino South Coast	[0-5]	[0-10]		
		(B) Area: The tag shall be valid in the area described in subsection 364(c)(5)(A).			
(l) Department Administered SHARE Tule Elk Hunts					
(1)	Cache Creek	[0-10]	[0-10]		
		(B) Area: The tag shall be valid in the area described in subsection 364(d)(1)(A).			
(2)	La Panza	[0-40]	[0-60]		
		(B) Area: The tag shall be valid in the area described in subsection 364(d)(2)(A).			
(3)	Bishop	[0-10]	[0-30]		
		(B) Area: The tag shall be valid in the area described in subsection 364(d)(3)(A).			
(4)	Independence	[0-10]	[0-30]		
		(B) Area: The tag shall be valid in the area described in subsection 364(d)(4)(A).			
(5)	Goodale	[0-10]	[0-10]		
		B) Area: The tag shall be valid in the area described in subsection 364(d)(5)(A).			
(6)	Lone Pine Period 2	[0-40]	[0-30]		
		(B) Area: The tag shall be valid in the area described in subsection 364(d)(6)(A).			
(7)	Tinemaha	[0-10]	[0-30]		
		(B) Area: The tag shall be valid in the area described in subsection 364(d)(7)(A).			
(8)	West Tinemaha	[0-10]	[0-30]		
		(B) Area: The tag shall be valid in the area described in subsection 364(d)(8)(A).			
(9)	Tinemaha Mountain	[0-8]			
		(B) Area: The tag shall be valid in the area described in subsection 364(d)(9)(A).			
(10)	Whitney	[0-4]	[0-10]		
		(B) Area: The tag shall be valid in the area described in subsection 364(d)(10)(A).			

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(11)	Grizzly Island	[0-2]	[0-50]		[0-50]
		(B) Area: The tag shall be valid in the area described in subsection 364(d)(11)(A).			
(12)	Fort Hunter Liggett Central Coast	[0-42]	[0-44]		
		(B) Area: The tag shall be valid in the area described in subsection 364(d)(12)(A).			
(13)	East Park Reservoir	[0-6]	[0-20]		
		(B) Area: The tag shall be valid in the area described in subsection 364(d)(13)(A).			
(14)	San Luis Reservoir	[0-30]	[0-30]		
		(B) Area: The tag shall be valid in the area described in subsection 364(d)(14)(A).			
(15)	Bear Valley	[0-10]	[0-10]		
		(B) Area: The tag shall be valid in the area described in subsection 364(d)(15)(A).			
(16)	Lake Pillsbury	[0-10]	[0-10]		
		(B) Area: The tag shall be valid in the area described in subsection 364(d)(16)(A).			
(17)	Santa Clara	[0-15]	[0-20]		
		(B) Area: The tag shall be valid in the area described in subsection 364(d)(17)(A).			
(18)	Alameda	[0-4]	[0-10]		
		(B) Area: The tag shall be valid in the area described in subsection 364(d)(18)(A).			
(19)	San Emigdio Mountain	[0-15]	[0-40]		
		(B) Area: The tag shall be valid in the area described in subsection 364(d)(19)(A).			
(20)	Camp Roberts NO SHARE				

Note: Authority Cited: Sections 332 and 1050, Fish and Game Code. Reference: Sections 332, 1050 and 1574, Fish and Game Code.

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STATE OF CALIFORNIA
FISH AND GAME COMMISSION
INITIAL STATEMENT OF REASONS FOR REGULATORY ACTION
(Pre-Publication of Notice Statement)

Amend Subsection 472
Title 14, California Code of Regulations (CCR)
Re: Nongame Animals, General Provisions

I. Date of Initial Statement of Reasons: November 2, 2015

II. Dates and Locations of Scheduled Hearings:

(a) Notice Hearing: Date: December 10, 2015
Location: San Diego, CA

(b) Discussion Hearings: Date: February 11, 2016
Location: Sacramento, CA

(c) Adoption Hearing: Date: April 14, 2016
Location: Santa Rosa, CA

III. Description of Regulatory Action:

(a) Statement of Specific Purpose of Regulation Change and Factual Basis for Determining that Regulation Change is Reasonably Necessary:

1. It is necessary to amend subsection 472(a), Title 14, California Code of Regulations (CCR), in order to specify rock doves (*Columba livia*) as a nongame bird in conformance with Fish and Game Code (FGC), Section 3680 regarding take.

The hunting status of rock doves (*Columba livia*), commonly referred to as domestic pigeons, is unclear under existing law. FGC Section 3680 presumes that the shooting or taking of rock doves is lawful. However, since their status (e.g. as a nongame bird) in the Code is unclear, the actual conditions under which they can be shot or taken is also unclear. FGC Section 3800 makes it unlawful to take nongame birds except as authorized by code or regulation. Nongame birds are defined in that section as all birds "…occurring naturally in California…" that are not otherwise classified. While rock doves are not native to California, at this time they are naturally occurring meaning they live and raise their young here. Adding rock doves to subsection 472(a) will make clear their status as nongame birds and the conditions under which they can be taken.

The prohibition on the intentional take of racing pigeons as provided under FGC 3680 will be maintained.

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2. It is necessary to extend the season for take of nonnative deer as set forth in subsection 472(b).

   The purpose of this amendment is to create new hunting opportunities in order to reduce the populations of nonnative deer species to the benefit of all species that are native to California. This regulation change will extend the hunting season beyond the general deer season by allowing the take of nonnative deer during any deer, elk or pronghorn antelope season and on private properties with authorized hunts.

   Current regulation, subsection 472(b), permits the take of nonnative deer [including: fallow (*Dama dama*), sambar (*Rusa unicolor*), sika (*Cervus nippon*), and axis (*Axis axis*) deer] during the general deer season in the deer zone where they are found. However, increased populations of these nonnative species have developed in many areas of California to the detriment of our native wildlife. Nonnative deer species compete with native species for the limited resources, forage, and habitat, necessary for survival. They may also transmit diseases or parasites for which native species have no natural immunity or defenses. (For example, hairless deer syndrome in native deer is associated with lice found naturally on fallow deer.)

   The amendment of subsection 472(b) further clarifies that hunters taking nonnative deer must possess a valid hunting license in accordance with Fish and Game Code 3007. However, no tag, stamp, or additional endorsement of any kind is required.

   While the take and reduction of nonnative deer populations is considered beneficial by the Department, Fish and Game Code, Section 4304 provides that it is unlawful to allow "flesh normally eaten by humans to go to waste." For the purpose of clarification, the regulatory text is amended stating that the flesh of nonnative deer should not go to waste.

   The proposed amendments to subsection 472(b) specifically:

   - Require the possession of a valid CA hunting license, however, no tag, stamp, or additional endorsement of any kind is required;
   - Establish an extended season concurrent with the general seasons for deer, elk, or pronghorn antelope and during authorized seasons on private property;
   - Clarify that It is unlawful to needlessly waste the edible flesh of nonnative deer; and,
   - Establish that there is no bag or possession limit for hunting of nonnative deer.

(b) Authority and Reference Sections from Fish and Game Code for Regulation:

Authority: Sections 3800 and 4150 Fish and Game Code.

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Reference: Sections 2003, 3007, 3680, 3800, 3801, 3801.5, 4150, and 4304, Fish and Game Code.

(c) Specific Technology or Equipment Required by Regulatory Change: None.

(d) Identification of Reports or Documents Supporting Regulation Change: None.

(e) Public Discussions of Proposed Regulations Prior to Notice Publication:

A public discussion was held at the Fish and Game Commission's Wildlife Resources Committee meeting held on September 9, 2015 in Fresno, California.

IV. Description of Reasonable Alternatives to Regulatory Action:

(a) Alternatives to Regulation Change:

No alternatives were identified.

(b) No Change Alternative:

Regarding the take of rock doves, the no change alternative was considered and rejected because the regulation would continue to be confusing and applied inconsistently on a state-wide basis.

The no change alternative was considered and rejected for the extended seasons for take of nonnative deer because it would not allow for the management of these nonnative species; the negative impacts to native species populations and their habitats would continue to occur.

(c) Consideration of Alternatives:

In view of information currently possessed, no reasonable alternative considered would be more effective in carrying out the purpose for which the regulation is proposed, would be as effective and less burdensome to affected private persons than the proposed regulation, or would be more cost effective to affected private persons and equally effective in implementing the statutory policy or other provision of law.

V. Mitigation Measures Required by Regulatory Action:

The proposed regulatory action will have no negative impact on the environment; therefore, no mitigation measures are needed.

VI. Impact of Regulatory Action:

The potential for significant statewide adverse economic impacts that might result from the proposed regulatory action has been assessed, and the following initial determinations relative to the required statutory categories have been made.

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(a) Significant Statewide Adverse Economic Impact Directly Affecting Businesses, Including the Ability of California Businesses to Compete with Businesses in Other States:

The proposed action will not have a significant statewide adverse economic impact directly affecting business, including the ability of California businesses to compete with businesses in other states. The proposed regulations are unlikely to increase or decrease current levels of hunting effort in California.

(b) Impact on the Creation or Elimination of Jobs Within the State, the Creation of New Businesses or the Elimination of Existing Businesses, or the Expansion of Businesses in California; Benefits of the Regulation to the Health and Welfare of California Residents, Worker Safety, and the State's Environment:

The Commission anticipates benefits to the health and welfare of California residents. Hunting provides opportunities for multi-generational family activities and promotes respect for California's environment by the future stewards of the State's resources. The Commission anticipates benefits to the State's environment in the sustainable management of natural resources.

The proposed action will not have significant impacts on jobs or business within California and does not provide benefits to worker safety.

(c) Cost Impacts on Representative Private Persons/Business:

The Commission is not aware of any cost impacts that a representative private person or business would necessarily incur in reasonable compliance with the proposed action.

(d) Costs or Savings to State Agencies or Costs/Savings in Federal Funding to the State:
None.

(e) Other Nondiscretionary Costs/Savings to Local Agencies: None.

(f) Programs Mandated on Local Agencies or School Districts: None.

(g) Costs Imposed on Any Local Agency or School District that is Required to be Reimbursed under Part 7 (commencing with Section 17500) of Division 4: None.

(h) Effect on Housing Costs: None.

VII. Economic Impact Assessment.

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The proposed amendments will clarify the regulation regarding the take of rock doves, and extend the season for the take of nonnative deer. There are no costs to businesses or persons.

(a) Effects of the regulation on the creation or elimination of jobs within the State:

The regulation will not affect the creation or elimination of jobs because it is unlikely to increase or decrease current levels of hunting effort in California.

(b) Effects of the regulation on the creation of new businesses or the elimination of existing businesses within the State:

The regulation will not impact the creation of new businesses or the elimination of businesses because it is unlikely to increase or decrease current levels of hunting effort in California.

(c) Effects of the regulation on the expansion of businesses currently doing business within the State

The regulation will not affect the expansion of businesses currently doing business within the State because it is unlikely to increase or decrease current levels of hunting effort in California.

(d) Benefits of the regulation to the health and welfare of California residents:

The Commission anticipates benefits to the health and welfare of California residents. Hunting provides opportunities for multi-generational family activities and promotes respect for California's environment by the future stewards of the State's resources.

(e) Benefits of the regulation to worker safety.

The proposed regulation will not affect worker safety.

(f) Benefits of the regulation to the State's environment

It is the policy of the State to encourage the conservation, maintenance, and utilization of the living resources. The proposed action will further this core objective.

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INFORMATIVE DIGEST
(Policy Statement Overview)

The current regulations in subsections 472(a) and (b), T14, CCR do not address the take of rock doves and limits the take of nonnative deer species (including fallow, sambar, sika, and axis deer) to the general deer season. The proposed amendments will clarify the regulation regarding the take of rock doves, and extend the season for the take of nonnative deer.

Subsection 472(a) will specify rock doves as a nongame species that can be taken by any means at any time.

Subsection 472(b) will extend the season for take of nonnative deer and:

- Require the possession of a valid CA hunting license, however, no tag, stamp, or additional endorsement of any kind is required;
- Permit hunts on properties where an authorized deer, elk or pronghorn antelope season is open;
- Clarify that it is unlawful to needlessly waste the edible flesh of nonnative deer; and,
- Establish that there is no bag or possession for hunting of nonnative deer.

Benefits of the regulations

The regulation will clarify the conditions of take for rock doves to provide consistency in application on a state-wide basis. Establishing specific regulations regarding the take of nonnative deer species will create new hunting opportunities and help reduce negative impacts on native species populations and habitats by reducing the population of the competing nonnative species.

Non-monetary benefits to the public

The Commission does not anticipate non-monetary benefits to the protection of public health and safety, worker safety, the prevention of discrimination, the promotion of fairness or social equity and the increase in openness and transparency in business and government.

Consistency with State or Federal Regulations

The Fish and Game Commission, pursuant to Fish and Game Code Sections 200, 202 and 203, has the sole authority to regulate hunting in California and the take of species in general in California. Commission staff has searched the California Code of Regulations and has found the proposed changes pertaining to the general provisions of the nongame section consistent with the provisions of Title 14. Therefore the Commission has determined that the proposed amendments are neither inconsistent nor incompatible with existing State regulations. There are no related federal regulations.

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REGULATORY TEXT

Section 472, Title 14, CCR, is amended to read:

§ 472. General Provisions.
Except as otherwise provided in Sections 478 and 485 and subsections (a) through (d) below, nongame birds and mammals may not be taken.
(a) The following nongame birds and mammals may be taken at any time of the year and in any number except as prohibited in Chapter 6: English sparrow, starling, rock dove (*Columba livia*) (except as prohibited in Fish and Game Code section 3680), coyote, weasels, skunks, opossum, moles and rodents (excluding tree and flying squirrels, and those listed as furbearers, endangered or threatened species).
(b) Fallow, sambar, sika, and axis deer may be taken only ~~concurrently with the general deer season.~~ as follows:
(1) Possession of a valid hunting license is required. No tag, stamp, or additional endorsement of any kind is required.
(2) On properties where an authorized deer, elk or pronghorn antelope season is open.
(3) It shall be unlawful to detach or remove only the head, hide or antlers of any deer taken under this section, or to leave through carelessness or neglect any portion of the flesh normally eaten by humans to go to waste.
(4) Bag and Possession Limit: None.

... [No changes to subsections (c) through (e)]

Note: Authority cited: Sections ~~355,~~ 3800 and 4150, Fish and Game Code. Reference: Sections ~~355,~~ 2003, 3800, 3007, 3680, 3801, 3801.5, ~~and~~ 4150, and 4304, Fish and Game Code.

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STATE OF CALIFORNIA
FISH AND GAME COMMISSION
INITIAL STATEMENT OF REASONS FOR REGULATORY ACTION
(Pre-Publication of Notice Statement)

Add Section 708.18
Title 14, California Code of Regulations (CCR)
Re: Fund Raising Big Game License Tags, Return for Refund

I. Date of Initial Statement of Reasons: November 2, 2015

II. Dates and Locations of Scheduled Hearings:

(a)	Notice Hearing:	Date:	December 10, 2015
		Location:	San Diego, CA
(b)	Discussion Hearings:	Date:	February 11, 2016
		Location:	Sacramento, CA
(c)	Adoption Hearing:	Date:	April 14, 2016
		Location:	Santa Rosa, CA

III. Description of Regulatory Action:

(a) Statement of Specific Purpose of Regulation Change and Factual Basis for Determining that Regulation Change is Reasonably Necessary:

It is necessary for the Commission to provide a method for the return of Fund Raising Big Game License Tags (FRT) and a refund of the purchase price. The purpose of the addition of the new section is to address unforeseen circumstances that affect the ability of the successful tag purchaser to use the FRT.

FRT are provided by statute for sale by qualifying non-governmental organizations at auction. The proceeds of the sale of the fund raising tags are deposited to the Big Game Management Account established by the Legislature in Fish and Game Code Section 3953 for the sustainable management of the state's big game resources. There is a great deal of interest by hunters in acquiring these unique tags and often the price exceeds several thousand dollars. In rare cases, the FRT has gone unused because of circumstances beyond the control of the successful bidder. Under current regulations, the money spent cannot be refunded.

However, tags awarded through the normal allocation process, and for far less cost, can under current regulations (Section 708.14) be returned or exchanged by hunters. The proposed regulation sets forth a procedure to allow the return of the FRT and to provide a refund under certain conditions. The new provisions set forth a few possible circumstances beyond the control of the holder under which, by example, the tag holder may not be able to use

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the FRT. These include, but are not limited to, illness, military deployment, and hunt area closure (e.g. fire, etc.). However, the decision to return the tag must be made at least ten business days before the start of the season. If possible, the returned FRT will be made available for purchase by the next highest bidder(s).

Proposed Regulations

Add a new Section 708.18 setting forth a procedure to allow the refund of the price of Fund Raising Tags provided that a written request citing the circumstances beyond the control of the holder that prevent the use of the tag, and the tag are received by the Department at least ten business days before the start of the season.

(b) Authority and Reference:

Note: Authority cited: Sections 200, 202, 331, 332, 1050, 4334, and 4902 Fish and Game Code. Reference: Sections 331, 332, 1050, 4334, and 4902 Fish and Game Code.

(c) Specific Technology or Equipment Required by Regulatory Change: None.

(d) Identification of Reports or Documents Supporting Regulation Change: None

(e) Public Discussions of Proposed Regulations Prior to Notice Publication:

Fish and Game Commission's Wildlife Resources Committee meeting held on September 9, 2015 in Fresno, California.

IV. Description of Reasonable Alternatives to Regulatory Action:

(a) Alternatives to Regulation Change:

No alternatives were identified.

(b) No Change Alternative:

The no change alternative was considered and rejected because it does not provide a method by which purchasers of fund-raising tags, who cannot use the tag, may seek a refund.

(c) Consideration of Alternatives:

In view of information currently possessed, no reasonable alternative considered would be more effective in carrying out the purpose for which the regulation is proposed, would be as effective and less burdensome to affected private persons than the proposed regulation, or would be more cost

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effective to affected private persons and equally effective in implementing the statutory policy or other provision of law.

V. Mitigation Measures Required by Regulatory Action:

The proposed regulatory action will have no negative impact on the environment; therefore, no mitigation measures are needed.

VI. Impact of Regulatory Action.

(a) Significant Statewide Adverse Economic Impact Directly Affecting Businesses, Including the Ability of California Businessmen to Compete with Businesses in Other States.

The proposed action will not have a significant statewide adverse economic impact directly affecting businesses, including the ability of California businesses to compete with businesses in other states. The proposed changes merely specify the process for refunding the cost of a FRT that cannot be used by the purchaser due to circumstances beyond their control.

(b) Impact on the Creation or Elimination of Jobs Within the State, the Creation of New Businesses or the Elimination of Existing Businesses, or the Expansion of Businesses in California; Benefits of the Regulation to the Health and Welfare of California Residents, Worker Safety, and the State's Environment:

The Commission does not anticipate any impact on jobs or businesses in California; the regulation does not provide benefits to California residents or to worker safety.

The Commission does a expect a small benefit to the State's environment because the proceeds of the sale of the fund raising tags are deposited to the Big Game Management Account established by the Legislature in Fish and Game Code Section 3953 for the sustainable management of the state's big game resources. The refund process, and subsequent re-sale of the tag, assures hunters that the money spent is worthwhile and without risk.

(c) Cost Impacts on Representative Private Persons/Business.

The Commission is not aware of any cost impacts that a representative private person or business would necessarily incur in reasonable compliance with this proposed action.

(d) Costs or Savings to State Agencies or Costs/Savings in Federal Funding to the State: None.

(e) Other Nondiscretionary Costs/Savings to Local Agencies: None.

(f) Programs Mandated on Local Agencies or School Districts: None.

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(g) Costs Imposed on Any Local Agency or School District that is Required to be Reimbursed under Part 7 (commencing with Section 17500) of Division 4. None.

(h) Effect on Housing Costs: None.

VII. Economic Impact Assessment

The purpose of the proposed amendments is to establish a process for refunding the price of fund raising license tags purchased at auction. Although the hunter may successfully bid on these highly desirable tags, there are rare instances when the hunter cannot use or is prevented from using the tag. The refund is an equitable method of providing relief under circumstances beyond the control of the hunter. There are no costs to businesses or persons.

(a) Effects of the regulation on the creation or elimination of jobs within the State:

The regulation will not affect the creation or elimination of jobs. The proposed changes merely specify the process for refunding the cost of a FRT that cannot be used by the purchaser due to circumstances beyond their control.

(b) Effects of the regulation on the creation of new businesses or the elimination of existing businesses within the State:

The regulation will not create new businesses or eliminate businesses within the State. The proposed changes merely specify the process for refunding the cost of a FRT that cannot be used by the purchaser due to circumstances beyond their control.

(c) Effects of the regulation on the expansion of businesses currently doing business within the State:

The regulation will not affect the expansion of businesses currently doing business in the State. The proposed changes merely specify the process for refunding the cost of a FRT that cannot be used by the purchaser due to circumstances beyond their control.

(d) Benefits of the regulation to the health and welfare of California residents:

The proposed regulation will not have a direct benefit on the health and welfare of California residents.

(e) Benefits of the regulation to worker safety.

The proposed regulation will not affect worker safety.

(f) Benefits of the regulation to the State's environment:

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The Commission expects a small benefit to the State's environment because the proceeds of the sale of the fund raising tags are deposited to the Big Game Management Account established by the Legislature in Fish and Game Code Section 3953 for the sustainable management of the state's big game resources.

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INFORMATIVE DIGEST
(Policy Statement Overview)

Existing regulations in Section 708, T14, CCR specify procedures and conditions for returning or exchanging big game tags and refunding tag fees but do not identify similar procedures to allow the return of big game fund raising tags sold by qualifying non-governmental organizations at auction.

This proposal would add Subsection 708.18 to establish regulations which allow the return of the purchase price for fund raising tags. The new provisions set forth a few possible circumstances beyond the control of the holder under which, by example, the tag holder may not be able to use the FRT. These include, but are not limited to, illness, military deployment, and hunt area closure (i.e., fire, etc.). However, the request to return the tag must be made in writing to the Department, at least ten business days before the start of the season. If possible, the returned FRT will be made available for purchase by the next highest bidder(s).

Benefits of the Regulation

The Commission anticipates benefits to the health and welfare of California residents and benefits to the State's environment because the proposed regulations assist the Department in the sustainable management of California's natural resources.

Consistency with State or Federal Regulations

The Fish and Game Commission, pursuant to Fish and Game Code Sections 200, 202 and 203, has the sole authority to regulate big game hunting in California. Commission staff has searched the California Code of Regulations and has found the proposed changes pertaining to the refund of the price of unused fund raising tags to be consistent with the provisions of Title 14. Therefore the Commission has determined that the proposed amendments are neither inconsistent nor incompatible with existing State regulations.

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REGULATORY TEXT

Section 708.18 is added to read as follows:

§ 708.18. Fund Raising Big Game License Tags, Return for Refund

(a) Any tagholder who was awarded a big game fund raising tag through an auction and cannot hunt may submit a written request to the department for a refund of the amount paid for the tag provided that:

(1) The request is due to circumstances beyond the control of the tag holder that prevent the use of the tag during the length of the season and in any zone open for hunting, including, but not limited to:

(A) Serious medical condition, or death, of the tag holder;

(B) Military deployment of the tag holder; or

(C) An area closure that prohibits or limits the tag holder's ability to hunt.

(2) The tag holder shall return the tag with the written request and supporting documentation to the department's License and Revenue Branch at least ten business days before the start of the season for which the tag is valid.

(3) The department will consider the request and may refund the amount paid for the tag.

(4) The department may offer the tag to the next highest bidder(s) at the auction event in the amount of their final bid.

Note: Authority cited: Sections 200, 202, 331, 332, 1050, 4334, and 4902, Fish and Game Code. Reference: Sections 331, 332, 1050, 4334, and 4902, Fish and Game Code.

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FINAL
ENVIRONMENTAL DOCUMENT

Sections 360, 361, 554, and 601
Title 14, California Code of Regulations

Regarding

Deer Hunting

April 10, 2007

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF FISH AND GAME

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CHAPTER 1 – SUMMARY

PROPOSED PROJECT AND ALTERNATIVES

The project under consideration consists of adjustments to tag quotas for each deer hunting zone and additional hunts, modifications to existing seasons, creation of new seasons, and modifications of regulation for clarity. The Department is recommending that the Commission adopt regulations that will provide for limited public hunting of buck, antlerless and either-sex deer in a total of 44 hunting zones, 28 area-specific archery hunts, 43 additional hunts, 75 Private Lands Wildlife Habitat Enhancement and Management (PLM) Area Program hunts (PLM areas are licensed in May through September), and 10 fund-raising license tags. Hunter quotas are determined using annual deer herd survey data and deer population modeling techniques. Primary input to these models includes the results of annual deer herd surveys, herd objectives contained in approved deer herd management plans, and both hunting and non-hunting mortality. Because final hunter quotas cannot be established until late March when over-winter fawn survival is determined, the Commission is provided with a range of proposed hunting tag quotas. Upon completion of spring herd composition surveys, consultation with the Interstate Deer Committee and final population modeling, the Department will determine and recommend to the Commission final hunting tag quotas.

The Proposed Project represents management options (elements) within a particular hunt zone that will achieve a desired kill (DK) from the herd(s). DK refers to a harvest strategy that provides for a harvest of animals with a safety margin to protect against over harvesting the herd(s). This safety margin is usually in the form of reduced tag quotas and/or seasons. Alternative 2 represents management options (elements) within a particular hunt zone that will achieve a high kill (HK) from the herd(s). Alternative 3 represents management options (elements) within a particular hunt zone that will produce a relatively small harvest.

The Commission may select a combination of elements within the Proposed Project and Alternatives 2 and 3 for any particular zone because the effects of a combined project will fall within the analysis of the High kill project (Alternative 2) and the Low kill project (Alternative 3). The Commission may also select a reduced (in terms of kill) project or no-change (no project) option for any element within the Proposed Project and Alternatives 2 and 3 because the effects of such an action would fall somewhere within the analysis provided.

SUMMARY OF IMPACTS AND MITIGATION

Table 1. Impact Summary

Alternative	Significant Impact	Nature of Impact	Mitigation Available	Nature of Mitigation
Proposed Project	No	None	N/A	N/A
1. No Change	No	None	N/A	N/A
2. High Kill	No	None	N/A	N/A
3. Low Kill	No	None	N/A	N/A

The removal of individual animals through hunting, together with other natural mortality, from any of the deer herds, should not significantly reduce herd size over the annual cycle. The proposed action is expected to result in maintaining the herd ratio objectives around the approved management plan objectives. The production and survival of young animals within each herd should replace the animals removed by hunting. Therefore, the proposed action of harvesting deer by hunting should not have a significant adverse impact on either local populations or the statewide population of deer beyond the annual cycle.

Mitigation

The project has been designed to limit pain and suffering by the specification of prescribed methods of take. These method restrictions are designed to make the hunting equipment highly lethal to the target animal. Methods for taking deer are regulated during the general season under the provisions of Sections 353 and 354, Title 14, California Code of Regulations.

AREAS OF CONTROVERSY

A public scoping session regarding the preparation of environmental documents for hunting big game species was held on October 11, 2006 at the Wildlife Branch office located at 1812 Ninth Street, Sacramento. At that meeting, the use of lead ammunition to take big game animals in California (primarily within the range of the California condor) and the impact of mountain lion predation on the deer population were identified as areas of controversy.

ISSUES TO BE RESOLVED

Issues to be resolved relate to the decisions regarding how to provide public hunting of deer as an element of deer management. Specific issues to be resolved include the establishment of specific hunt areas, season dates, bag and possession limits, hunter quotas, special conditions and methods of take. Additionally, the issue of whether to adopt the proposed project or an alternative needs to be resolved.

FUNCTIONAL EQUIVALENCY

CEQA review of the proposed project will be conducted in accordance with the Commission's certified regulatory program (CRP) approved by the Secretary for the California Resources Agency pursuant to Public Resources Code section 21080.5 (See generally Cal. Code Regs., tit. 14, §§ 781.5, and 15251, subd. (b).). The California Environmental Quality Act (CEQA) requires all public agencies in the State to evaluate the environmental impacts of projects they approve, including regulations, which may have a potential to significantly affect the environment. The Department has prepared this Environmental Document (ED), which is the functional equivalent of an Environmental Impact Report, on behalf of the Commission in compliance with this requirement. The ED provides the Commission, other agencies, and the general public with an objective assessment of the potential effects.

CHAPTER 2 – THE PROPOSED ACTION

Each alternative and the Proposed Project was analyzed using KILLVARY, a computer simulation model developed to estimate deer population size and analyze the effects of various harvest strategies on deer populations. Inputs to run the model include herd composition data (Appendix 4) and prior year harvest (Appendix 5). The results for the Proposed Project and Alternatives 2 and 3 are described for each hunting zone (Appendix 3) and are accompanied by a table (Appendix 4) to aid the reader in understanding the possible effects of the hunting alternatives. Specifically, the effects of the alternative on total kill, the proportion of bucks in the herd (buck ratio) and the population size are presented. Thus, each alternative receives an equal level of consideration and analysis.

The specific process for developing the elements of the Proposed Project and Alternatives 2 and 3 for each of the zones is depicted in Figures 1 and 2. The KILLVARY Model produces a number of bucks and does that can be harvested to meet the goal/criteria for each element of the Proposed Project and Alternatives 2 and 3. In addition, a harvest buffer is developed and evaluated for each alternative by hunt zone. The harvest buffer is an additional number of deer (unallocated) that could be harvested within the hunt zone that would not have a significant adverse effect on the deer population. Additionally, the number of bucks and does expected to be killed on PLMs and by archery only hunters are subtracted from the harvest allocation (Figure 2). The remaining number of bucks and does are then allocated to the hunts listed under each alternative based on the desired harvest and on past and expected hunter caused mortality rates for each hunt. New hunt tag quotas are based on estimated hunter caused mortality rates of similar existing hunts either in the same or similar zone.

Figure 1. Alternative Evaluation Process

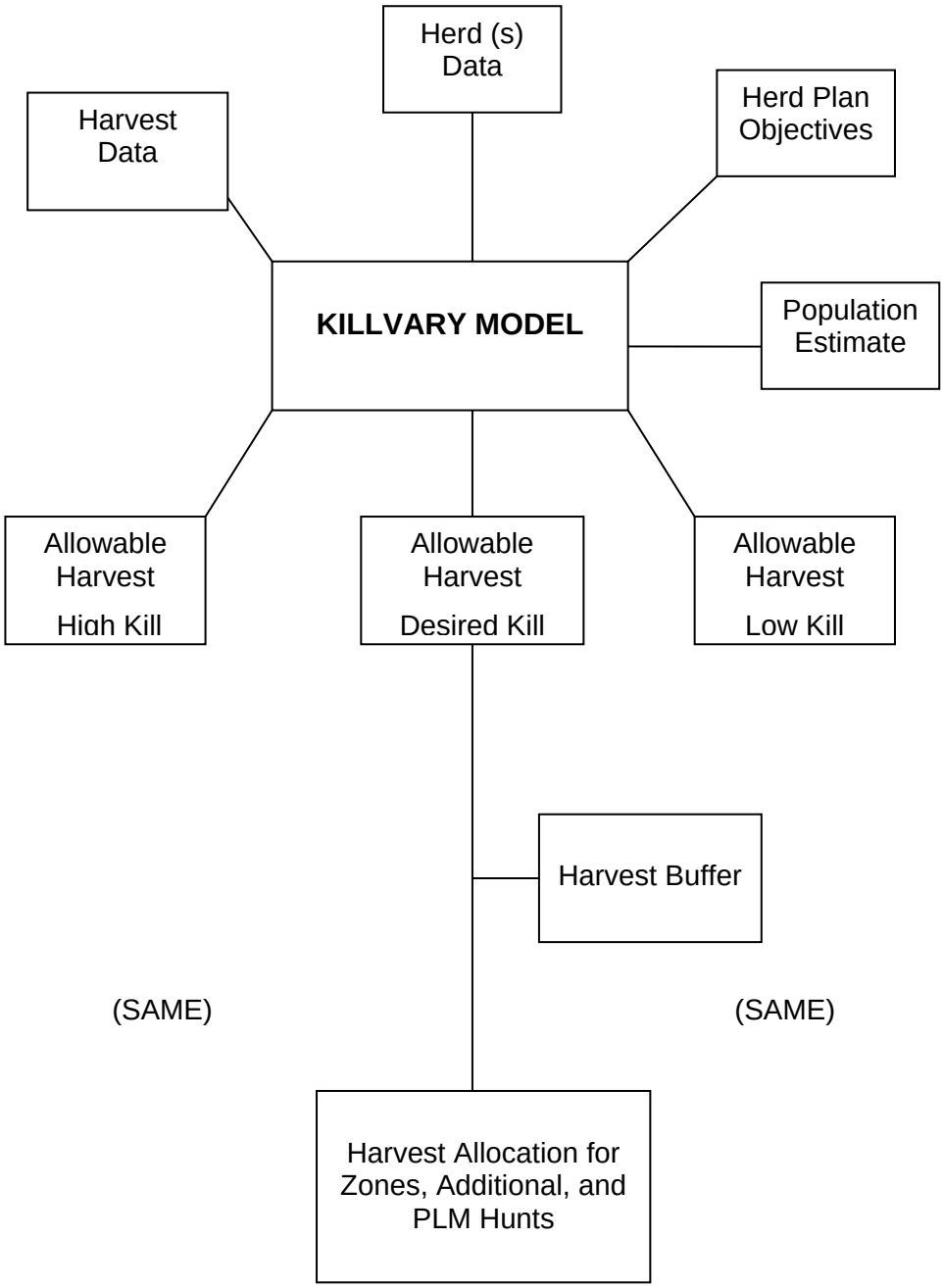
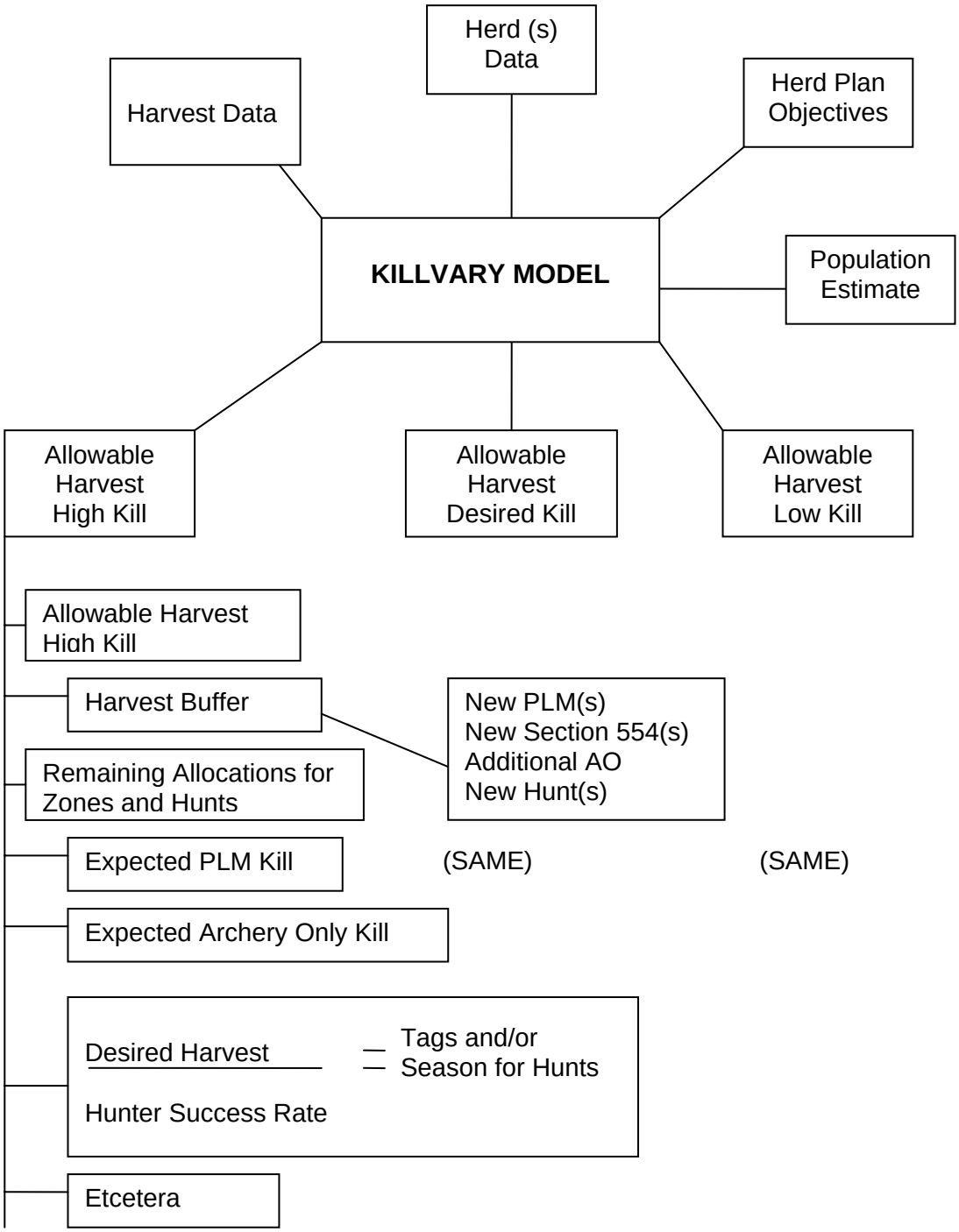


Figure 2. Tag and Season Allocation Process



This process results in the tag range and/or hunt season listed for each of the hunts under the Proposed Project and Alternatives 2 and 3.

The harvest buffer allocation is to allow for small adjustments in tag quotas or hunts, new PLMs, new Section 554 areas, and new hunts that might be proposed by the public during the Commission meetings. The buffers have been developed such that whether or not any part of the buffers are eventually allocated, the hunts will have no significant adverse effect on the deer resource or the ability of the project to achieve its goals.

Section 360(a) – A, B, C, and D Zone Hunts

1. Number of Tags

Existing regulations provide for the number of hunting tags for the A, B, C, and D zones. The proposal changes the number of tags for all existing zones to a series of ranges (See Appendix 1).

The proposal provides a range of tag numbers for each zone from which a final number will be determined, based on the post-winter status of each deer herd. These ranges are necessary, as the final number of tags cannot be determined until spring herd data are collected in March/April.

In early spring, surveys of deer herds are conducted to determine the proportion of fawns that have survived the winter. This information is used in conjunction with the prior year harvest and fall herd composition data to estimate overall herd size, sex and age ratios, and the predicted number of bucks available next season. The number of bucks and does needs to be estimated prior to the hunting season to determine how many surplus bucks will exist over and above the number required to maintain the desired buck ratio objectives stated in the approved deer herd management plans.

The actual tag numbers for each affected zone will be selected and authorized by the Fish and Game Commission from the range of values provided by this proposal. The number of tags is intended to allow the appropriate level of hunting opportunity and harvest of bucks in the population, while achieving or maintaining the buck ratios at, or near, objective levels set forth in the approved deer herd management plans. These final values for the license tag numbers will be based upon findings from the annual harvest and herd composition counts. However, under circumstances where severe winter conditions adversely effect herd recruitment and over-winter adult survival, final tag quotas may fall below the proposed tag range

Section 360(b) – X Zone Hunts

1. Number of Tags

Existing regulations provide for the number of hunting tags for the X zones. The proposal changes the number of tags for all existing zones to a series of ranges (See Appendix 1).

The proposal provides a range of tag numbers for each zone from which a final number will be determined, based on the post-winter status of each deer herd. These ranges are necessary, as the final number of tags cannot be determined until spring herd data are collected in March/April.

In early spring, surveys of deer herds are conducted to determine the proportion of fawns that have survived the winter. This information is used in conjunction with the prior year harvest and fall herd composition data to estimate overall herd size, sex and age ratios, and the predicted number of bucks available next season. The number of bucks and does needs to be estimated prior to the hunting season to determine how many surplus bucks will exist over and above the number required to maintain the desired buck ratio objectives stated in the approved deer herd management plans.

The actual tag numbers for each affected zone will be selected and authorized by the Fish and Game Commission from the range of values provided by this proposal. The number of tags is intended to allow the appropriate level of hunting opportunity and harvest of bucks in the population, while achieving or maintaining the buck ratios at, or near, objective levels set forth in the approved deer herd management plans. These final values for the license tag numbers will be based upon findings from the annual harvest and herd composition counts. However, under circumstances where severe winter conditions adversely effect herd recruitment and over-winter adult survival, final tag quotas may fall below the proposed tag range.

<u>Section 360(c and d) – Additional Hunts</u>

1. Number of Tags

Existing regulations provide for the number of hunting tags in the Additional Hunts. The proposal changes the number of tags for all existing hunts to a series of ranges (See Appendix 1).

The proposal provides a range of tag numbers for each hunt from which a final number will be determined, based on the post-winter status of each deer herd. These ranges are necessary, as the final number of tags cannot be determined until spring herd data are collected in March/April.

In early spring, surveys of deer herds are conducted to determine the proportion of fawns that have survived the winter. This information is used in conjunction with the prior year harvest and fall herd composition data to estimate overall herd size, sex and age ratios,

and the predicted number of bucks available next season. The number of bucks and does needs to be estimated prior to the hunting season to determine how many surplus bucks will exist over and above the number required to maintain the desired buck ratio objectives stated in the approved deer herd management plans.

The actual tag numbers for each affected hunt will be selected and authorized by the Fish and Game Commission from the range of values provided by this proposal. The number of tags is intended to allow the appropriate level of hunting opportunity and harvest of bucks in the population, while achieving or maintaining the buck ratios at, or near, objective levels set forth in the approved deer herd management plans. These final values for the license tag numbers will be based upon findings from the annual harvest and herd composition counts. However, under circumstances where severe winter conditions adversely effect herd recruitment and over-winter adult survival, final tag quotas may fall below the proposed tag range.

2. Modify Season for Additional Hunt G-8

Existing regulations for Additional Hunt G-8 (Fort Hunter Liggett Antlerless Deer Hunt) provide for hunting on Saturdays, Sundays, and the Columbus Day holiday only beginning the first Saturday in October and extending for two consecutive weekends. The Base has specifically requested the season be modified to begin on the Thursday preceding the Columbus Day weekend and run for five consecutive days to accommodate Base operations and other hunt opportunities.

The proposal would modify the season by consolidating a hunt season consisting of two weekends and a holiday into a five consecutive day season in order to accommodate other hunts and Base operations. No loss of hunter opportunity would result from this action and the proposal is consistent with existing deer herd management plan recommendations.

3. Modify Season and Special Conditions for Additional Hunt G-10

Existing regulations for Additional Hunt G-10 (Camp Pendleton Either-Sex Deer Hunt) provide for hunting on Saturdays, Sundays, Columbus and Veteran's Day, and the day after Thanksgiving, beginning the third Saturday in September and continuing through the Thanksgiving Day weekend. Certain federal holidays occur on weekdays when the Base is normally closed and additional hunter opportunity has been lost. The Base has specifically requested: the season be lengthened by adding two weeks to the beginning of the season; one week to the end of the season; include all holidays and the day after Thanksgiving, in order to provide additional hunter opportunity. In addition, the Base has requested that additional weekdays be included at the discretion of the Commanding Officer for those days when military operations have been suspended or reduced.

The proposal would modify the season to begin on the first Saturday in September and extend through the first Sunday in December; specifically include all holidays; and allow the Commanding Officer discretion, with Department concurrence, to provide additional hunt days on weekdays during the season should military operations be suspended. Special conditions are also adjusted to account for the additional three weeks added to the season. These actions would provide an increase in hunter opportunity as requested by the Base, while maintaining consistency with existing deer herd management plan recommendations.

4. Modify Season for Additional Hunt J-10

Existing regulations for Additional Hunt J-10 (Fort Hunter Liggett Junior Either-Sex Deer Hunt) provide for hunting on Saturdays, Sundays, and the Columbus Day holiday only beginning the first Saturday in October and extending for two consecutive weekends. The Base has specifically requested the season be modified by adding two days to the beginning of the season in order to provide additional junior hunting opportunity.

The proposal would modify the season by adding two days to the beginning of the season (Thursday and Friday). These actions would result in increased hunter opportunity, and are consistent with existing deer herd management plan recommendations.

<u>Section 361 – Archery Deer Hunting</u>

1. Number of Tags

Existing regulations provide for the number of hunting tags in the Additional Hunts. The proposal changes the number of tags for all existing hunts to a series of ranges (See Appendix 1).

The proposal provides a range of tag numbers for each hunt from which a final number will be determined, based on the post-winter status of each deer herd. These ranges are necessary, as the final number of tags cannot be determined until spring herd data are collected in March/April.

In early spring, surveys of deer herds are conducted to determine the proportion of fawns that have survived the winter. This information is used in conjunction with the prior year harvest and fall herd composition data to estimate overall herd size, sex and age ratios, and the predicted number of bucks available next season. The number of bucks and does needs to be estimated prior to the hunting season to determine how many surplus bucks will exist over and above the number required to maintain the desired buck ratio objectives stated in the approved deer herd management plans.

The actual tag numbers for each affected hunt will be selected and authorized by the Fish and Game Commission from the range of values provided by this proposal. The number of tags is intended to allow the appropriate level of hunting opportunity and harvest of bucks in the population, while achieving or maintaining the buck ratios at, or near, objective levels set forth in the approved deer herd management plans. These final values for the license tag numbers will be based upon findings from the annual harvest and herd composition counts. However, under circumstances where severe winter conditions adversely effect herd recruitment and over-winter adult survival, final tag quotas may fall below the proposed tag range.

2. Establish New Area-Specific Archery Hunt A-33

Existing regulations provide deer hunting area descriptions, seasons, bag and possession limits, and number of tags for Zone A. The zone currently provides limited late season archery deer hunting opportunities in the zone, Hunt A-32 (Ventura/Los Angeles Late Season Archery Either-Sex Deer Hunt). In an effort to increase opportunity for archery method hunters, provide a higher expectation of success, and meet public demand for increased hunter opportunity while meeting approved deer herd plan objectives, the proposal would establish a new late season archery hunt opportunity in Zone A on the Fort Hunter Liggett Military Base.

The proposal creates a new Area-Specific Archery Hunt, A-33 (Fort Hunter Liggett Late Season Archery Either-Sex Deer Hunt). The area would include that portion of Monterey County lying within the exterior boundaries of the Hunter Liggett Military Reservation, except as restricted by the Commanding Officer. The season would be open on Saturdays, Sundays and holidays only beginning the first Saturday in October and continuing through the Veteran's Day holiday in November, except if rescheduled by the Base Commander between the season opener and December 31 with Department concurrence. The bag and possession limit would be one, either-sex deer with a recommended tag quota range of 20-100 tags to be split between military only personnel, distributed by the Base; and the general public, distributed through Department drawing. Special conditions would include a tag refund exchange policy in case of hunt cancellation by the Commanding Officer. This proposal would meet an expressed public demand for increased late season and archery hunting opportunity, maintain appropriate harvest levels within the Hunter Liggett Military Reservation and Zone A deer herds, and be consistent with existing deer herd management plan recommendations.

The actual tag numbers for each affected hunt will be selected and authorized by the Fish and Game Commission from the range of values provided by this proposal. The number of tags is intended to allow the appropriate level of hunting opportunity and harvest of bucks in the population, while achieving or maintaining the buck ratios at, or near, objective levels set forth in the approved deer herd management plans. These

final values for the license tag numbers will be based upon findings from the annual harvest and herd composition counts. However, under circumstances where severe winter conditions adversely effect herd recruitment and over-winter adult survival, final tag quotas may fall below the proposed tag range.

BACKGROUND AND EXISTING CONDITION

Background

Deer management in California is guided by State law and policies of the Commission and the Department. The goals of deer management are to encourage the conservation, restoration, maintenance and utilization of California's wild deer populations. Deer herd management plans were developed to: (1) assure that conservation of deer is in accordance with maintaining sufficient deer populations and habitat to provide for the beneficial use and enjoyment of wildlife by all citizens of the State; (2) perpetuate deer for their intrinsic and ecological values, as well as for their direct benefits to man; and (3) provide for aesthetic, educational and nonappropriative uses of deer. The objectives of the plans are to restore and maintain healthy deer herds in the wild state and to provide for high-quality and diversified use of deer in California.

As specified in the Fish and Game Code (sections 450-460), deer are managed on a unit basis, where a unit consists of an individual deer herd or group of similar herds. Individual deer herd management objectives are contained in 80 plans, which were prepared by the Department in conjunction with land management agencies, private landowners and the general public. The actions recommended in the herd plans include programs to: obtain information needed about deer; maintain and increase the quality of deer habitat statewide, including the identification, maintenance and management of critical deer habitat; reduce natural mortalities; decrease the illegal taking of deer through modern law enforcement; and provide for both hunting and nonhunting uses of deer, consistent with the inherent productivity of individual deer herds.

The project discussed in this document is deer hunting, a portion of the utilization element of each deer herd management plan. Deer hunting is conducted via a "management by objectives" approach. As such, the deer population in each management unit is monitored, and the status is compared to objectives for each unit. When the status of the deer in each unit changes from the objective, recommendations are made to the Commission to modify the deer hunting regulations for that unit. Deer hunting strategies in individual units are commonly changed by modifying the timing or length of the hunting season, modifying the number of hunters, changing the method of take, changing the type of deer (buck, antlerless or both) to be harvested or by adding or removing an additional hunt to a portion of the unit. The best management strategy for hunting in a given unit is dictated by the current status of the deer in the unit, the deer

herd management plan objectives, Department field biologist recommendations, local conditions and public input.

In 1977, legislation (Assembly Bill 1521, Chapter 839) was introduced by Assemblyman Perino which became the backbone of modern deer management in California. The laws, sections 450 through 460, Fish and Game Code, specify the policy of the Legislature, define general deer hunting, provide direction to the Department about managing deer, specify the content of the annual report to the Legislature and direct the Department regarding hunting regulations.

Section 450 declares that it is the policy of the Legislature to encourage the conservation, restoration, maintenance and utilization of California's wild deer populations. Such conservation shall be in accordance with the principles of wildlife resources conservation set forth in Section 1801, Fish and Game Code, and in accordance with the objectives and elements stated in *A Plan for California Deer* (California Department of Fish and Game, 1976). The objectives stated in *A Plan for California Deer* are to restore and maintain healthy deer herds in the wild state and to provide for high-quality and diversified use of deer in California. The objective of the proposed project, therefore, is to implement the Plan's direction to provide high quality and diversified use of deer through public deer hunting.

Section 451 defines the "general deer hunting season" as the annual season for the area in question, as set by the Commission under its general regulatory powers, or as set by statute, for the taking of male deer.

Section 452 directs the Department to designate deer herd management units and a manager for each unit. The units are to be single deer herds or groups of deer herds having similar management and habitat requirements and characteristics. Boundaries of such units need not follow county boundary lines.

Sections 453 through 455 direct the Department to develop plans for deer herd management units. The objectives of such plans shall be the restoration and maintenance of healthy deer herds in the wild state and to provide for high-quality and diversified use of deer in California. The management plans are to contain programs to: obtain information needed about deer; maintain and increase the quality of deer habitat statewide, including the identification, maintenance and management of critical deer habitat; reduce natural mortalities; decrease the illegal taking of deer through modern law enforcement; and provide for both hunting and non-hunting uses of deer, consistent with the basic individual deer herd management unit capabilities. Specifically, the plans discuss the past history of each deer herd and document existing information for each herd. Current problems are listed, and solutions are identified as recommended actions in each of seven elements of deer management: (1) inventory and investigation; (2) habitat; (3) mortality; (4) utilization; (5) law enforcement; (6) communication of

information; and (7) review and update. The plans are to be reviewed annually and shall be the basis for Department's recommendations to the Commission.

Section 456 directs the Department to produce a biennial report to the Legislature and to the Commission on the progress that is being made toward the restoration and maintenance of California's deer herds. Details of the content of the report are discussed in this Chapter under "Reports to the Legislature and Fish and Game Commission". Additionally, the Department shall not recommend to the Commission any deer management program or any modification of the Commission's deer hunting regulations unless they are consistent with deer herd management plans.

Sections 457 through 459 direct the Department to notify the Commission and specified county boards of supervisors of its intent to recommend the taking of antlerless and either-sex deer prior to the Commission's regulation-setting process. Boards of supervisors of 37 of the 58 counties have the authority to modify or veto any Department recommendations for harvesting antlerless and/or either-sex deer, based upon testimony presented at a hearing of the board and the submission of a resolution by the board to the Commission.

Section 460 requires the Department to notify the Commission prior to its regulation-setting process of deer herd units to be placed under a general season and whether any antlerless deer should be taken. If the Department believes that current hunter numbers would adversely affect the deer herd, impair the hunting experience or endanger the public safety, the Department shall also recommend restrictions on hunter numbers. The Department shall inform the Commission of the condition of each deer herd unit, and the Commission shall make the information known to the public.

In addition to sections 450 through 460, other State laws provide for management of wildlife, including deer, on private and military lands for control of depredation due to deer, increased access to the public, and protection and enhancement of habitats.

Sections 3400 through 3408 of the Fish and Game Code provide for the management of fish and wildlife on private lands, and Section 3409 of the Fish and Game Code requires the Department to report every three years to the Speaker of the Assembly, the Chairman of the Senate Committee on Rules, and the chairmen of the policy committees of each house on the participants of the PLM Program, the wildlife management activities undertaken, the wildlife species managed and the harvest data.

Statutes similar to those for management of fish and wildlife on private lands are in sections 3450 through 3453 of the Fish and Game Code for management on military lands.

Section 4181.5 of the Fish and Game Code provides for the taking of deer by a landowner with property which is damaged or in immediate danger of being damaged. This Section directs the Department to issue a permit for taking depredating deer when evidence indicates that damage or the threat of damage has occurred. In lieu of these permits, with the consent of the landowner, the Commission may issue permits to licensed hunters to take deer to stop the damage or threatened damage to private property (Section 4188, Fish and Game Code).

Section 4334 of the Fish and Game Code provides authority for the Fish and Game Commission to direct the Department to authorize the sale of not more than ten fund-raising deer license tags. Since the 1996 deer hunting season, the Fish and Game Commission has directed the Department to authorize the sale of ten fund-raising deer license tags annually. These tags were offered for sale by nonprofit organizations selected by the Department through the Invitation For Bid process. Pursuant to Section 4334, all funds derived from the sale of these tags are continuously appropriated for use by the Deer Herd Management Plan Implementation Program. These funds will augment, not supplement, any other funds appropriated by the Department to implement this program.

Section 4370 of the Fish and Game code requires that an archery season be authorized in each zone with a general open season. The season for each area shall be as the Commission prescribes, except that a minimum interposing interval of three days immediately preceding the general open season must occur.

Existing Conditions

1. Zone A

A. General Season: The season in Zone A-South Unit 110 and Zone A-North Unit 160 shall open on the second Saturday in August and extend for 44 consecutive days.
B. Archery Season: The archery deer season in Zone A-South Unit 110 and Zone A-North Unit 160 shall open on the second Saturday in July and extend for 23 consecutive days.
C. Bag and Possession Limit: One buck, forked horn (see subsection 351(a), Title 14, CCR) or better, per tag.
D. Number of Tags: 65,000. Zone A tags are valid in Zone A-South Unit 110 and Zone A-North Unit 160.
E. Legal boundary description of the project area:

Shall include all of Zone A-South Unit 110 and Zone A-North Unit 160 (see subsections 360(a)(1)(A)1. through 2.).

1. South Unit 110. In those portions of Alameda, Contra Costa, Fresno, Kern, Kings,

Los Angeles, Monterey, San Benito, San Joaquin, San Luis Obispo, San Mateo, Santa Barbara, Santa Clara, Santa Cruz, Stanislaus and Ventura counties within a line beginning at the intersection of Highway 99 and the San Joaquin-Sacramento county line at Dry Creek; south on Highway 99 to Highway 166 in Kern County; west on Highway 166 to Highway 33; south on Highway 33 to Sespe Creek; east and south along Sespe Creek to Highway 126; east on Highway 126 to Interstate 5; south on Interstate 5 and 405 to Interstate 10; west on Interstate 10 to the Pacific Ocean; north on the Pacific Ocean coastline to the San Mateo-San Francisco county line; east on the San Mateo-San Francisco county line to the Alameda county line; north on the Alameda-San Francisco county line to the Contra Costa-San Francisco county line: northwest on Contra Costa-San Francisco county line to the Contra Costa-Marin county line; northeast on the Contra Costa-Marin county line to the Contra Costa-Solano county line in San Pablo Bay; east on the Contra Costa-Solano county line and the Sacramento River to the confluence of the San Joaquin River and Sacramento-Contra Costa county line; east on the Sacramento-Contra Costa county line and San Joaquin River to the confluence of the Mokelumne River and San Joaquin-Sacramento county line; northeast on the San Joaquin-Sacramento county line and Mokelumne River to the confluence of Dry Creek; east on the San Joaquin-Sacramento county line and Dry Creek to the point of beginning at Highway 99.

2. North Unit 160. In those portions of Colusa, Glenn, Lake, Marin, Mendocino, Napa, Sacramento, Solano, Sonoma and Yolo within a line beginning at the junction of the mouth of Hardy Creek (Mendocino County) and the Pacific Ocean; east along Hardy Creek to Highway 1; north along Highway 1 to Highway 101; south along Highway 101 to Commercial Avenue in the town of Willits; east on Commercial Avenue to the Hearst-Willits Road (County Road 306); north and east on the Hearst-Willits Road to the Main Eel River; southeast on the Main Eel River to Lake Pillsbury at Scott Dam; southeast along the west shore of Lake Pillsbury and the Rice Fork of the Eel River to Forest Service Road M-10; east on Forest Service Road M-10 to Forest Service Road 17N16; east on Forest Service Road 17N16 to Forest Service Road M-10; east on Forest Service Road M-10 to Letts Valley-Fouts Spring Road; east on the Letts Valley-Fouts Spring Road to the Elk Creek-Stonyford Road (County Road 306); north on the Elk Creek-Stonyford Road to the Glenn-Colusa county line; east along the Glenn-Colusa County line to Interstate 5; Interstate 5 south to Highway 99 in the City of Sacramento; Highway 99 south to the Sacramento/San Joaquin County line at Dry Creek, west along the Sacramento/San Joaquin County line and Dry Creek to the confluence with the Mokelumne River, southwest on the Sacramento/San Joaquin County line and Mokelumne River to the confluence with the San Joaquin River and Sacramento/Contra Costa County line, west on the Sacramento/Contra Costa County line and San Joaquin River to the confluence of the Sacramento River and Solano/Contra Costa County line, west on the Sacramento River and Solano/Contra Costa County line to the Marin County line in San Pablo Bay, southwest on the Marin/Contra Costa and Marin/San Francisco county lines to the North Peninsula shoreline near the Golden Gate Bridge,

west on the shoreline to the Pacific Ocean coastline, northwest on the Pacific Ocean coastline to the point of beginning.

Deer Herds: Adelaida, Avenal, Clear Lake, Mendocino, Monticello, Mount Diablo, Mount Hamilton, Pacheco-Merced, Pacheco-Stanislaus, Pozo, San Benito, Santa Barbara, Santa Cruz, Santa Lucia, Santa Rosa, Shandon.

2. B Zones (includes zones B-1, B-2, B-3, B-4, B-5, and B-6)

a. Bag and Possession Limit: One buck, forked horn (see subsection 351(a), Title 14, CCR) or better, per tag.
b. Number of Tags: 55,000

A. Zone B-1

a. General Season: The season shall open on the third Saturday in September and extend for 37 consecutive days.
b. Archery Season: The season shall open on the third Saturday in August and extend for 23 consecutive days.
c. Legal boundary description of the project area:

In the County of Del Norte and those portions of Glenn, Humboldt, Lake, Mendocino, Siskiyou and Trinity counties within a line: Beginning at the California-Oregon state line and the Pacific Ocean; east along the state line to the point where Cook-Green Pass Road (Forest Service Road 48N20) intersects the California-Oregon state line; south on the Cook-Green Pass Road to Highway 96 near Seiad Valley; west and south along Highway 96 to Highway 299 at Willow Creek; southeast along Highway 299 to the South Fork of the Trinity River; southeast along the South Fork of the Trinity River to the boundary of the Yolla Bolly-Middle Eel Wilderness Area; southwest along the boundary of the Yolla Bolly-Middle Eel Wilderness Area to the Four Corners Rock-Washington Rock Trail; south and east on the Four Corners Rock-Washington Rock Trail to the North Fork of Middle Fork Eel River; south on the North Fork of Middle Fork Eel River to Middle Fork Eel River; east on Middle Fork Eel River to confluence with Balm of Gilead Creek; north and east on Balm of Gilead Creek to confluence with Minnie Creek; east and south on Minnie Creek to Soldier Ridge Trail; north on Soldier Ridge Trail to Summit Trail; south on Summit Trail to Green Springs Trail head at Pacific Crest Road (U.S. Forest Service Road M-2); south on the Mendocino Pass Road to the intersection of Forest Highway 7; west on Forest Highway 7 to the Middle Fork of the Eel River near Eel River Work Center; southwest on the Middle Fork of the Eel River to the Black Butte River; southeast along the Black Butte River to the Glenn-Mendocino County line; south along the Glenn-Mendocino and Lake-Mendocino county lines to the northern boundary of State Game Refuge 2-A; east and south along the northern and eastern boundaries of State Game Refuge 2-A to the Glenn-Lake County line near Sheetiron Mountain; south along the Glenn-Lake and Colusa-Lake county lines to Forest Service Road

17N16; west on Forest Service Road 17N16 to Forest Service Road M-10; west on Forest Service Road M-10 to the Rice Fork of the Eel River; northwest along the Rice Fork of the Eel River and the shore of Lake Pillsbury to the Main Eel River at Scott Dam; west and north along the Main Eel River to the Hearst-Willits Road; southwest on the Hearst-Willits Road to Commercial Avenue; west on Commercial Avenue to Highway 101; north on Highway 101 to Highway 1 at Leggett; west on Highway 1 to its intersection with the South Fork of the Eel River; north and west along the South Fork of the Eel River to the main Eel River; west and north along the main Eel River to mouth of the Eel River and north along the Pacific coastline to the point of beginning.

Deer Herds: Clear Lake, Mad River, Mendocino, Redwood Creek, Ruth, Smith River

B. Zone B-2

a. General Season: The season shall open on the third Saturday in September and extend for 37 consecutive days.
b. Archery Season: The season shall open on the third Saturday in August and extend for 23 consecutive days.
c. Legal boundary description of the project area:

In those portions of Humboldt, Shasta, Siskiyou, Tehama, and Trinity counties within a line beginning at the intersection of Interstate 5 and Highway 299 in Redding; west on Highway 299 to the Bully Choop Mountain Road at the Shasta-Trinity County line and Buckhorn Summit; south on the Bully Choop Mountain Road to a point where this road leaves the Shasta-Trinity County line at Mud Springs; southwest along the Shasta-Trinity County line to the Browns Creek-Harrison Gulch Road; south on the Browns Creek-Harrison Gulch Road to Highway 36; east on Highway 36 (200 yards) to Forest Service Arterial Road 41; south on Forest Service Arterial Road 41 to Stuart Gap at the Tehama-Trinity County line; south on the Tehama-Trinity County line to the north boundary of the Yolla Bolly-Middle Eel Wilderness Area; west and south on the Yolla Bolly-Middle Eel Wilderness boundary to the South Fork of the Trinity River; north and west along the South Fork of the Trinity River to Highway 299; west and north on Highway 299 to Highway 96 at Willow Creek; north on Highway 96 to the Cecilville-Salmon River Road (Forest Service Road 93) at Somes Bar; east along the Cecilville-Salmon River Road to Highway 3 at Callahan; east along Highway 3 to the Gazelle-Callahan Road (Forest Service Road 1219); east along the Gazelle-Callahan Road to Highway 99; north along Highway 99 to Louie Road; east along Louie Road to Interstate 5; south along Interstate 5 to the point of beginning.

Deer Herds: Happy Camp, Hayfork, Klamath, Redwood Creek, Weaverville

C. Zone B-3

a. General Season: The season shall open on the third Saturday in September and extend for 37 consecutive days.
b. Archery Season: The season shall open on the third Saturday in August and extend for 23 consecutive days.
c. Legal boundary description of the project area:

In those portions of Colusa, Glenn, Lake, Mendocino, and Tehama counties within a line beginning at the intersection of Interstate 5 and Black Butte Reservoir Road; south on Interstate 5 to the Glenn-Colusa County line; west along the Glenn-Colusa County line to the Elk Creek-Stonyford Road (County Road 306); south on the Elk Creek-Stonyford Road to the Letts Valley-Fouts Spring Road; west on the Letts Valley-Fouts Spring Road through Fouts Spring to Forest Service Road M-10; west on Forest Service Road M-10 to the Colusa-Lake County line; north along the Colusa-Lake and Glenn-Lake county lines to the eastern boundary of State Game Refuge 2-A, near Sheetiron Mountain; north and west along the eastern and northern boundaries of State Game Refuge 2-A to the Lake-Mendocino County line; north on the Lake-Mendocino and Glenn-Mendocino County lines to the Black Butte River; northwest along the Black Butte River to the Middle Fork of the Eel River; east and north along the Middle Fork of the Eel River to Forest Highway 7 near the Eel River Work Center; east on Forest Highway 7 to the Low Gap-Government Flat Road; north on the Low Gap-Government Flat Road to the Round Valley-Paskenta Road at Government Flat; east on the Round Valley-Paskenta Road to the Black Butte Lake-Newville Road; south and east on the Black Butte Lake-Newville Road to Interstate 5 at the point of beginning.

Deer Herds: Alder Springs, Capay/East Park, Clear Lake, Mendocino, Yolla Bolly

D. Zone B-4

a. General Season: The season shall open on the fourth Saturday in August and extend for 37 consecutive days.
b. Archery Season: The season shall open on the fourth Saturday in July and extend for 23 consecutive days.
c. Legal boundary description of the project area:

In those portions of Mendocino and Humboldt counties within a line beginning at the mouth of Hardy Creek and the Pacific Ocean; north along the Pacific coastline to the mouth of the Eel River; east and south along the main Eel River to the South Fork of the Eel River; south along the South Fork of the Eel River to State Highway 1 at Leggett; west on State Highway 1 to Hardy Creek; west along Hardy Creek to the point of beginning.

Deer Herd: Mattole River

E. Zone B-5

a. General Season: The season shall open on the third Saturday in September and extend for 37 consecutive days.
b. Archery Season: The season shall open on the third Saturday in August and extend for 23 consecutive days.
c. Legal boundary description of the project area follows:

In those portions of Glenn, Mendocino, Shasta, Tehama, and Trinity counties within a line beginning at the intersection of Highway 299 and Interstate 5 in Redding; south along Interstate 5 to the Black Butte Lake-Newville Road near Orland; west and north on the Black Butte Lake-Newville Road to the Round Valley-Paskenta Road; west on the Round Valley-Paskenta Road to the Pacific Crest Road (U.S. Forest Service Road M-2) near Government Flat; north on the Pacific Crest Road to the Summit Trailhead at Green Springs; north along Summit Trail to Soldier Ridge Trail; south and west along Soldier Ridge Trail to Minnie Creek; north and west on Minnie Creek to Balm of Gilead Creek; west on Balm of Gilead Creek to the Middle Fork of the Eel River; west on the Middle Fork of the Eel River to the North Fork of the Middle Fork of the Eel River; north on the North Fork of the Middle Fork of the Eel River to the Four Corners Rock-Washington Rock Trail; north and west on the Four Corners Rock-Washington Rock Trail to the boundary of the Yolla Bolly-Middle Eel Wilderness Area; north along the boundary of the Yolla Bolly-Middle Eel Wilderness Area to the Tehama-Trinity County line; north on the Tehama-Trinity County line to Forest Service Arterial Road 41 at Stuart Gap; north on Forest Service Arterial Road 41 to Highway 36; west on Highway 36 (200 yards) to the Browns Creek-Harrison Gulch Road; north on the Browns Creek-Harrison Gulch Road to the Shasta-Trinity County line; northeast along the Shasta-Trinity County line to Mud Springs, where the Bully Choop Mountain Road joins the Shasta-Trinity County line; north on the Bully Choop Mountain Road to Highway 299 at Buckhorn Summit and the Shasta-Trinity County line; east on Highway 299 to Interstate 5 in Redding.

Deer Herds: Capay/East Park, Mendocino, Ruth, Yolla Bolly

F. Zone B-6

a. General Season: The season shall open on the third Saturday in September and extend for 30 consecutive days.
b. Archery Season: The season shall open on the third Saturday in August and extend for 23 consecutive days.
c. Legal boundary description of the project area:

In that portion of Siskiyou County within a line beginning at the California-Oregon state line and its intersection with Interstate 5; south on Interstate 5 to Louie Road near

Gazelle; west on Louie Road to Highway 99; south on Highway 99 to the Gazelle-Callahan Road at Gazelle; west on the Gazelle-Callahan Road to Highway 3; west on Highway 3 to the Cecilville-Salmon River Road (Forest Service Road 93) at Callahan; west on the Cecilville-Salmon River Road to Highway 96 at Somes Bar; north on Highway 96 to the Cook-Green Pass Road at Seiad Valley; north on the Cook-Green Pass Road to the California-Oregon state line; east along the California-Oregon state line to Interstate 5.

Deer Herds: Happy Camp, Klamath

3. C Zones (includes zones C-1, C-2, C-3, and C-4)

a. Bag and Possession Limit: One buck, forked horn (see subsection 351(a), Title 14, CCR) or better, per tag.
b. Number of Tags: 9,025

A. Zone C-1

a. General Season: The season in Zone C-1 shall open on the third Saturday in September and extend for 30 consecutive days.
b. Legal boundary description of the project area:

In that portion of Siskiyou County within a line beginning at the California-Oregon state line and its intersection with Interstate 5; south on Interstate 5 to Highway 97 at Weed; north and east on Highway 97 to the intersection with the California-Oregon state line; west on the California-Oregon state line to the point of beginning.

Deer Herds: McCloud Flats, Klamath

B. Zone C-2

a. General Season: The season in Zone C-2 shall open on the third Saturday in September and extend for 37 consecutive days.
b. Legal boundary description of the project area::

In those portions of Shasta and Siskiyou counties within a line beginning at the junction of Interstate 5 and Highway 89 south of the town of Mt. Shasta; east and south on Highway 89 to the Pit River at Lake Britton; west and south along the Pit River to Interstate 5 at Shasta Lake; north on Interstate 5 to the point of beginning.

Deer Herd: McCloud Flats

C. Zone C-3

a. General Season: The season in Zone C-3 shall open on the third Saturday in September and extend for 37 consecutive days.
b. Legal boundary description of the project area:

In that portion of Shasta County within a line beginning at the intersection of Cottonwood Creek and Interstate 5 at Cottonwood; north on Interstate 5 to the Pit River at Shasta Lake; east and north on the Pit River to Highway 89 at Lake Britton; south on Highway 89 to Highway 44 at Old Station; south and west on Highway 44 to the North Fork of Battle Creek; southwest on the North Fork of Battle Creek to Battle Creek; west on Battle Creek to the Sacramento River; north on the Sacramento River to the mouth of Cottonwood Creek; west on Cottonwood Creek to the point of beginning.

Deer Herd: Cow Creek

D. Zone C-4

a. General Season: The season in Zone C-4 shall open on the third Saturday in September and extend for 16 consecutive days.
b. Legal boundary description of the project area:

In those portions of Butte, Glenn, Lassen, Plumas, Shasta, and Tehama counties within a line beginning at the junction of Interstate 5 and Cottonwood Creek at Cottonwood; east on Cottonwood Creek to the Sacramento River; south on the Sacramento River to Battle Creek; east on Battle Creek to the North Fork of Battle Creek; northeast on the North Fork of Battle Creek to Highway 44; east on Highway 44 to Highway 89 at the north entrance of Lassen Volcanic National Park; north and east on Highway 89 and 44 to the junction of Highway 44 at Old Station; south and east on Highway 44 to Highway 36 west of Susanville; west on Highway 36 to Highway 147 near Westwood; south on Highway 147 to Highway 89; south on Highway 89 to Highway 70; southwest on Highway 70 to Highway 162 at Oroville; west on Highway 162 to Interstate 5; north on Interstate 5 to Cottonwood Creek to the point of beginning.

Deer Herds: East Tehama, Mother Lode

4. D-3-5 Zone

a. General Season: The season in Zones D-3, D-4, and D-5 shall open on the fourth Saturday in September and extend for 37 consecutive days.
b. Archery Season: The archery season shall open on the third Saturday in August and extend for 23 consecutive days.
c. Bag and Possession Limit: One buck, forked horn (see subsection 351(a), Title 14, CCR) or better, per tag.

d. Number of Tags: 33,000
e. Legal boundary description of the project area is as follows:

Zone D-3

In those portions of Butte, Colusa, Glenn, Nevada, Placer, Plumas, Sierra, Sutter, and Yuba counties within a line beginning at the junction of Interstate 5 and Highway 162 at Willows; east on Highway 162 to Highway 70 at Oroville; northeast on Highway 70 to Highway 89; south on Highway 89 to the new Gold Lake Road (near Graeagle); south on the new Gold Lake Road to Highway 49 at Bassetts; east on Highway 49 to Yuba Pass; south on the Yuba Pass-Webber Lake Road (main haul road) through Bonta Saddle to the Jackson Meadows Highway (Fiberboard Road); west on the Jackson Meadows Highway for two miles to the White Rock Lake Road; south on the White Rock Lake Road to the new road to White Rock Lake (below Bear Valley); south and east on the new White Rock Lake Road to the Pacific Crest Trail (one mile west of White Rock Lake in Section 21, T18N, R14E, M.D.B.M.); south and east on the Pacific Crest Trail to Interstate 80 near the Castle Peak-Boreal Ridge Summit; west on Interstate 80 to Highway 20; west on Highway 20 to the Bear River in Bear Valley; west along the Bear River to Highway 65 near Wheatland; north on Highway 65 to Highway 70; north on Highway 70 to Highway 20 in Marysville; west on Highway 20 to Interstate 5 at Williams; north on Interstate 5 to the point of beginning.

Deer Herds: Blue Canyon, Bucks Mountain/Mooretown, Downieville/Nevada City, Mother Lode

Zone D-4

In those portions of Colusa, Nevada, Placer, Sacramento, Sutter, Yolo and Yuba counties within a line beginning at the junction of Interstate 5 and Highway 20 at Williams; east on Highway 20 to Highway 70 in Marysville; south on Highway 70 to Highway 65; south on Highway 65 to the Bear River (south of Wheatland); east along the Bear River to Highway 20; east on Highway 20 to Interstate 80; east on Interstate 80 to the Pacific Crest Trail near the Castle Peak-Boreal Ridge Summit; south on the Pacific Crest Trail to Forest Route 03 at Barker Pass; east and north along Forest Route 03 to Blackwood Canyon Road; east along Blackwood Canyon Road to Highway 89 at Lake Tahoe near Idlewild; south on Highway 89 to Blackwood Creek; east on Blackwood Creek to the Lake Tahoe shoreline; south along the shore of Lake Tahoe to the mouth of Miller Creek and the common boundary between the Eldorado and Tahoe National Forests; west along Miller Creek to the Rubicon River; west along the Rubicon River through Hell Hole Reservoir to the Middle Fork of the American River; west along the Middle Fork of the American River to the American River; west along the American River to Interstate 5; north on Interstate 5 to the point of beginning.

Deer Herds: Blue Canyon, Mother Lode, Nevada City

Zone D-5

In the counties of Amador and Calaveras and those portions of Alpine, El Dorado, Placer, Sacramento, San Joaquin, Stanislaus and Tuolumne counties within a line beginning at the junction of Interstate 5 and the American River in Sacramento; east along the American River to the Middle Fork of the American River; northeast along the Middle Fork of the American River to the Rubicon River; east along the Rubicon River through Hell Hole Reservoir to its confluence with Miller Creek; east along Miller Creek to its junction with the new (marked) USFS Pacific Crest Trail; north on the Pacific Crest Trail one-quarter mile to a junction with the McKinney-Rubicon Springs Road (Miller Lake Road); east along the McKinney-Rubicon Springs Road to McKinney Creek (NE 1/4, section 23, T14N, R16E, M.D.B.M.); east along McKinney Creek to the west shoreline of Lake Tahoe near Chambers Lodge; south along the shore of Lake Tahoe to the California-Nevada state line; southeast along the California-Nevada state line to Highway 50; southwest on Highway 50 to the Pacific Crest Trail at Echo Summit; south along the Pacific Crest Trail to the township line between Townships 7 and 8 North near Wolf Creek Pass; due west on that township line to the road connecting Lower and Upper Highland Lakes at Lower Highland Lake; west along that road to Highland Creek; southwest along Highland Creek to the North Fork of the Stanislaus River; west along the North Fork of the Stanislaus River to the Stanislaus River; west along the Stanislaus River to Highway 99; north along Highway 99 to Interstate 80; west on Interstate 80 to Interstate 5; north on Interstate 5 to the point of beginning.

Deer Herds: Carson River, Grizzly Flat, Mother Lode, Pacific, Railroad Flat, Salt Springs

5. Zone D-6

a. General Season: The season in Zone D-6 shall open on the third Saturday in September and extend for 44 consecutive days.
b. Archery Season: The archery season shall open on the third Saturday in August and extend for 23 consecutive days.
c. Bag and Possession Limit: One buck, forked horn (see subsection 351(a), Title 14, CCR) or better, per tag.
d. Number of Tags: 10,000
e. Legal boundary description of the project area:

In those portions of Alpine, Madera, Mariposa, Merced, Stanislaus and Tuolumne counties within a line beginning at the intersection of Highway 99 and the Stanislaus River at Ripon; east along the Stanislaus River and following the North Fork of the Stanislaus River to Highland Creek; east up Highland Creek to the road connecting

Lower and Upper Highland Lakes at Upper Highland Lake; east along that road to the township line between Townships 7 and 8 North; east on that township line to the Sierra crest near Wolf Creek Pass; south along the Sierra crest to the Yosemite National Park boundary near Rodger Peak; along the eastern Yosemite National Park boundary to Highway 41; south along Highway 41 to the Madera-Mariposa County line south of Westfall Station; along the Madera-Mariposa and the Madera-Merced county lines to Highway 99; north along Highway 99 to the point of beginning.

Deer Herds: Mother Lode, Stanislaus, Tuolumne, Yosemite

6. Zone D-7

a. General Season: The season in Zone D-7 shall open on the third Saturday in September and extend for 44 consecutive days.
b. Archery Season: The archery season shall open on the third Saturday in August and extend for 23 consecutive days.
c. Bag and Possession Limit: One buck, forked horn (see subsection 351(a), Title 14, CCR) or better, per tag.
d. Number of Tags: 9,000
e. Legal boundary description of the project area:

In those portions of Fresno, Madera, Mariposa and Tulare counties within a line beginning at the intersection of Highway 99 and the Madera-Merced County line; northeast along the Madera-Merced and Madera-Mariposa county lines to Highway 41 south of Westfall Station; north along Highway 41 to Yosemite National Park boundary; east along the park boundary to the Mono-Madera County line near Rodger Peak; south along the Inyo National Forest boundary (crest of the Ritter Range) to the junction of the Inyo National Forest boundary and Ashley Creek; east to Ashley Lake; northeast along Ashley Creek to the junction of King Creek; southeast along King Creek to its junction with the middle fork of the San Joaquin River; south and west along the middle fork of the San Joaquin River to the junction of the Inyo National Forest boundary; east along Fish Creek to its confluence with Deer Creek; north and east along Deer Creek to the upper crossing of the Deer Creek trail; north and east along the Deer Creek trail to the Inyo National Forest Boundary (the Sierra Crest); south along the Sierra crest and the Inyo National Forest boundary to Bishop Pass; west along the Dusy Basin Trail to the Middle Fork of the Kings River; southwest and downstream along the Middle Fork of the Kings River to the junction of the Middle Fork and South Fork of the Kings River; southwest along the Kings River through Pine Flat Reservoir, Piedra and Reedley to Highway 99; north along Highway 99 to the point of beginning.

Deer Herds: Huntington, North Kings, Oakhurst, San Joaquin, South Sierra Foothill

7. Zone D-8

a. General Season: The season in Zone D-8 shall open on the fourth Saturday in September and extend for 30 consecutive days.
b. Archery Season: The archery season shall open on the third Saturday in August and extend for 23 consecutive days.
c. Bag and Possession Limit: One buck, forked horn (see subsection 351(a), Title 14, CCR) or better, per tag.
d. Number of Tags: 8,000
e. Legal boundary description of the project area:

In those portions of Fresno, Kern and Tulare counties within a line beginning at the intersection of Highway 99 and the Kings River; upstream and northeast along the Kings River through Reedley, Piedra and Pine Flat Reservoir to the junction of the Middle and South Forks of the Kings River; northeast along the Middle Fork Kings River to the Dusy Basin Trail; east along this trail to the Kings Canyon National Park boundary at Bishop Pass; south along the Kings Canyon and Sequoia National Park boundaries to the Main Kern River; southeast along the Main Kern River and the common boundary between the Inyo and Sequoia National Forests to the end of the Chimney Meadow-Blackrock Station Road (Forest Road 21S03) near Blackrock Mountain; southeast along the Chimney Meadow-Blackrock Station Road through Troy Meadows to the South Fork of the Kern River; south along the South Fork of the Kern River to the Doyle Ranch Road; south along the Doyle Ranch Road to Highway 178 in the town of Onyx; southwest along Highway 178 to Highway 99 at Bakersfield; north along Highway 99 to the point of beginning.

Deer Herds: Greenhorn, Hume, Kaweah, Kern River, South Sierra Foothill and Tule River.

8. Zone D-9

a. General Season: The season in Zone D-9 shall open on the fourth Saturday in September and extend for 30 consecutive days.
b. Archery Season: The archery season shall open on the third Saturday in August and extend for 23 consecutive days.
c. Bag and Possession Limit: One buck, forked horn (see subsection 351(a), Title 14, CCR) or better, per tag.
d. Number of Tags: 2,000
e. The legal boundary description of the project area is as follows:

In that portion of Kern County within a line beginning at the intersection of Highways 99 and 178; northeast along Highway 178 along Lake Isabella and through Walker Pass to Highway 14; southwest along Highway 14 to Highway 58; northwest along Highway 58 to Highway 99; north along Highway 99 to the point of beginning.

Deer Herd: Piute Deer Herd

9. Zone D-10

a. General Season: The season in Zone D-10 shall open on the fourth Saturday in September and extend for 30 consecutive days.
b. Archery Season: The archery season shall open on the third Saturday in August and extend for 23 consecutive days.
c. Bag and Possession Limit: One buck, forked horn (see subsection 351(a), Title 14, CCR) or better, per tag.
d. Number of Tags: 700
e. Legal boundary description of the project area:

In those portions of Kern and Los Angeles counties within a line beginning at the intersection of Highways 99 and 58; southeast along Highway 58 to Highway 14; south along Highway 14 to Highway 138; west along Highway 138 to Interstate 5; north on Interstate 5 to Highway 99; north on Highway 99 to the point of beginning.

Deer Herd: Tejon

10. Zone D-11

a. General Season: The season in Zone D-11 shall open on the second Saturday in October and extend for 30 consecutive days.
b. Archery Season: The archery season shall open on the first Saturday in September and extend for 23 consecutive days.
c. Bag and Possession Limit: One buck, forked horn (see subsection 351(a), Title 14, CCR) or better, per tag.
d. Number of Tags: 5,500
e. Special Conditions: Hunters that possess a D-11 deer tag may also hunt in zones D-13 and D-15 as described in subsections 360(a)(12)(A)(B)(C) and 360(a)(14)(A)(B)(C), respectively.
f. Legal boundary description of the project area is as follows:

Those portions of Los Angeles and San Bernardino counties, within a line beginning at the intersection of Interstate 5 and Highway 138, south of Gorman; east on Highway 138 to Highway 14; south on Highway 14 to Palmdale and Highway 138; east on Highways 138 and 18 to Interstate 15; south on interstates 15 and 15E to Interstate 10; west on Interstate 10 to Interstate 405; north on Interstates 405 and 5 to the point of beginning.

Deer Herd: Los Angeles

11. Zone D-12

a. General Season: The season in Zone D-12 shall open on the first Saturday in November and extend for 23 consecutive days.
b. Archery Season: The archery season shall open on the first Saturday in October and extend for 23 consecutive days.
c. Bag and Possession Limit: One buck, forked horn (see subsection 351(a), Title 14, CCR) or better, per tag.
d. Number of Tags: 950
e. The legal boundary description of the project area is as follows:

Those portions of Imperial, Riverside and San Bernardino counties within a line beginning at Highway 62 and the Twentynine Palms-Amboy Road in Twentynine Palms; east along Highway 62 to Highway 95 at Vidal Junction; north on Highway 95 to Interstate 40; east on Interstate 40 to the California-Arizona state line; south along this state line to the U.S.-Mexican border; west along the U.S.-Mexican border to Highway 111 in Calexico; north on Highway 111 to Interstate 10; north and west on Interstate 10 to Highway 62; north and east on Highway 62 to the point of beginning.

Deer Herd: Burro

12. Zone D-13

a. General Season: The season in Zone D-13 shall open on the second Saturday in October and extend for 30 consecutive days.
b. Archery Season: The archery season shall open on the first Saturday in September and extend for 23 consecutive days.
c. Bag and Possession Limit: One buck, forked horn (see subsection 351(a), Title 14, CCR) or better, per tag.
d. Number of Tags: 4,000
e. Special Conditions: Hunters that possess a D-13 deer tag may also hunt in zones D-11 and D-15 as described in subsections 360(a)(10)(A)(B)(C) and 360(a)(14)(A)(B)(C), respectively.
f. Legal boundary description of the project area:

In those portions of Kern, Los Angeles, San Luis Obispo, Santa Barbara, and Ventura counties within a line beginning at the intersection of Highways 99 and 166 at Mettler; south on Highway 99 and Interstate 5 to Highway 126; west on Highway 126 to the crossing of Sespe Creek; north and then west along Sespe Creek to Highway 33; north on Highway 33 to Highway 166; north and east on Highway 166 to the point of beginning.

Deer Herds: Mount Pinos, Santa Barbara/Ventura

13. Zone D-14

a. General Season: The season in Zone D-14 shall open on the second Saturday in October and extend for 30 consecutive days.
b. Archery Season: The archery season shall open on the first Saturday in September and extend for 23 consecutive days.
c. Bag and Possession Limit: One buck, forked horn (see subsection 351(a), Title 14, CCR) or better, per tag.
d. Number of Tags: 3,000
e. Legal boundary description of the project area:

In those portions of Riverside and San Bernardino counties within a line beginning at the junction of Interstates 10 and 15E; northwest on Interstates 15E and 15 through Cajon Pass to Bear Valley Cutoff Road; east on Bear Valley Cutoff Road to Highway 18; east along Highway 18 to Highway 247; southeast on Highway 247 to Highway 62; southwest on Highway 62 to Interstate 10; west on Interstate 10 to the point of beginning.

Deer Herd: San Bernardino Mountains

14. Zone D-15

a. General Season: The season in Zone D-15 shall open on the second Saturday in October and extend for 30 consecutive days.
b. Archery Season: The archery season shall open on the first Saturday in September and extend for 23 consecutive days.
c. Bag and Possession Limit: One buck, forked horn (see subsection 351(a), Title 14, CCR) or better, per tag.
d. Number of Tags: 1,500
e. Special Conditions: Hunters that possess a D-15 deer tag may also hunt in zones D-11 and D-13 as described in subsections 360(a)(10)(A)(B)(C) and 360(a)(12)(A)(B)(C), respectively.
f. The legal boundary description of the project area is as follows:

Including Santa Catalina Island, those portions of Los Angeles, Orange, Riverside, San Bernardino and San Diego counties within a line beginning at the Pacific Ocean and Interstate 10 in Santa Monica; east on Interstate 10 to Highway 79 at Beaumont; south on Highway 79 to Hemet; south on County Road R-3 through Sage to Highway 79; west on Highway 79 to Interstate 15; south on Interstate 15 to Highway 76; west on Highway 76 to the Pacific Ocean; north along the shoreline to the point of beginning.

Deer Herd: Santa Ana Mountains

15. Zone D-16

a. General Season: The season in Zone D-16 shall open on the fourth Saturday in October and extend for 30 consecutive days.
b. Archery Season: The archery season shall open on the first Saturday in September and extend for 23 consecutive days.
c. Bag and Possession Limit: One buck, forked horn (see subsection 351(a), Title 14, CCR) or better, per tag.
d. Number of Tags: 3,000
e. Legal boundary description of the project area:

Those portions of Riverside, Imperial and San Diego counties within the line beginning at the Pacific Ocean and Highway 76; east on Highway 76 to Interstate 15; north on Interstate 15 to Highway 79; east on Highway 79 to the San Diego-Riverside County line; east along the San Diego-Riverside County line to the Anza-Borrego State Park boundary; south along the Anza-Borrego State Park boundary to Highway 78; east on Highway 78 to Highway 111; south on Highway 111 to the U.S.-Mexican border; west along the U.S.-Mexican border to the Pacific Ocean; north along the shoreline to the point of beginning.

Deer Herds: San Diego, San Jacinto/Santa Rosa Mountains

16. Zone D-17

a. General Season: The season in Zone D-17 shall open on the second Saturday in October and extend for 23 consecutive days.
b. Archery Season: The archery season shall open on the first Saturday in September and extend for 23 consecutive days.
c. Bag and Possession Limit: One buck, forked horn (see subsection 351(a), Title 14, CCR) or better, per tag.
d. Number of Tags: 500
e. Legal boundary description of the project area:

Those portions of Inyo, Kern, Los Angeles and San Bernardino counties within a line beginning at Highway 395 and the Kern-Inyo County line; east along the Kern-Inyo County line to the San Bernardino-Inyo County line; east along the San Bernardino-Inyo County line to Highway 127; north along Highway 127 to the California-Nevada state line; south along the California-Nevada state line to the California-Arizona state line; south along the California-Arizona state line to Interstate 40; Interstate 40 north to Needles; Highway 95 south to Highway 62; west on Highway 62 to Highway 247; northwest on Highway 247 to Highway 18; west on Highway 18 to Bear Valley Cutoff Road; west on Bear Valley Cutoff Road to Interstate 15; north on Interstate 15 to

Highway 18; west on Highways 18 and 138 to Highway 14; north on Highways 14 and 395 to the point of beginning.

Deer Herd: Eastern Mojave Desert

17. Zone D-19

a. General Season: The season in Zone D-19 shall open on the first Saturday in October and extend for 30 consecutive days.
b. Archery Season: The archery season shall open on the first Saturday in September and extend for 23 consecutive days.
c. Bag and Possession Limit: One buck, forked horn (see subsection 351(a), Title 14, CCR) or better, per tag.
d. Number of Tags: 1,500
e. Legal boundary description of the project area:

Those portions of Imperial, Riverside and San Diego counties within a line beginning at the junction of Interstate 10 and Highway 79; south on Highway 79 to Hemet; south on County Road R-3 to Highway 79; south on Highway 79 to the Riverside-San Diego County line; east on the Riverside-San Diego County line to the Anza-Borrego State Park boundary; south on the Anza-Borrego State Park boundary to Highway 78; east on Highway 78 to Highway 111; north on Highway 111 to the junction of Interstate 10 in Indio; west on Interstate 10 to the point of beginning.

Deer Herd: San Jacinto/Santa Rosa Mountains

18. Zone X-1

a. General Season: The season in Zone X-1 shall open on the first Saturday in October and extend for 16 consecutive days.
b. Bag and Possession Limit: One buck, forked horn (see subsection 351(a), Title 14, CCR) or better, per tag.
c. Number of Tags: 2,325
d. Legal boundary description of the project area:

In those portions of Lassen, Modoc, Shasta and Siskiyou counties within a line beginning at the California-Oregon state line and its intersection with Highway 139; south on Highway 139 to the Lookout-Hackamore Road; south on the Lookout-Hackamore Road to Highway 299; west on Highway 299 to the Pit River near Bieber; south and west on the Pit River to Highway 89 at Lake Britton; northwest on Highway 89 to Interstate 5 at Mt. Shasta; north on Interstate 5 to the junction of Highway 97 at Weed; north and east on Highway 97 to the California-Oregon state line; east on the California-Oregon state line to the point of beginning.

Deer Herd: McCloud Flats

19. Zone X-2

a. General Season: The season in Zone X-2 shall open on the first Saturday in October and extend for 16 consecutive days.
b. Bag and Possession Limit: One buck, forked horn (see subsection 351(a), Title 14, CCR) or better, per tag.
c. Number of Tags: 180
d. Legal boundary description of the project area:

In those portions of Modoc and Siskiyou counties within a line beginning at the intersection of Highway 139 and the California-Oregon state line near Tulelake; east along the California-Oregon state line to the eastern shoreline of Goose Lake; southwest along the eastern shoreline of Goose Lake to Westside Road (Modoc County 48); southeast along the Westside Road to Highway 395 in Davis Creek; south along Highway 395 to Highway 299 in Alturas; west along Highway 299 to Highway 139 near Canby; northwest along Highway 139 to the Oregon-California state line and the point of beginning.

Deer Herd: Devil's Garden/Interstate

20. Zone X-3a

a. General Season: The season in Zone X-3a shall open on the first Saturday in October and extend for 16 consecutive days.
b. Bag and Possession Limit: One buck, forked horn (see subsection 351(a), Title 14, CCR) or better, per tag.
c. Number of Tags: 295
d. Legal boundary description of the project area:

In those portions of Lassen and Modoc counties within a line beginning at the intersection of the Lookout-Hackamore Road and Highway 139; southeast on Highway 139 to Highway 299; east on Highway 299 to Highway 395 in Alturas; south on Highway 395 to the Termo-Grasshopper Road (Lassen County 513); west on the Termo-Grasshopper Road to Highway 139; south on Highway 139 to the Cleghorn Road (Lassen County 521); west and north on the Cleghorn Road to Lassen County Road 519 near Coulthurst Flat; west on Lassen County Road 519 to U.S. Forest Service Designated Through Route 22 near Gooch Mountain; west and north on U.S. Forest Service Designated Through Route 22 to the Little Valley Road (Lassen County 404); north on the Little Valley Road to the Western Pacific Railroad; northeast on the Western Pacific Railroad to Horse Creek; northwest on Horse Creek to the Pit River;

north on the Pit River to Highway 299 at Bieber; northeast on Highway 299 to the Bieber-Lookout-Hackamore Road; north along the Bieber-Lookout-Hackamore Road to the point of beginning.

Deer Herds: Adin, West Lassen

21. Zone X-3b

a. General Season: The season in Zone X-3b shall open on the first Saturday in October and extend for 16 consecutive days.
b. Bag and Possession Limit: One buck, forked horn (see subsection 351(a), Title 14, CCR) or better, per tag.
c. Number of Tags: 840
d. Legal boundary description of the project area:

In those portions of Lassen and Modoc counties within a line beginning at the east shoreline of Goose Lake and the California-Oregon state line; east along this state line to the California-Nevada state line; south along the California-Nevada state line to the Clarks Valley-Red Rock-Tuledad Road (Lassen County Roads 512, 510 and 506); west along the Tuledad Red Rock-Clarks Valley Road to Highway 395 at Madeline; north on Highway 395 to Westside Road (Modoc County 48) in Davis Creek; west and north along Westside Road to the south shoreline of Goose Lake; east and north along the south and east shoreline of Goose Lake to the point of beginning.

Deer Herd: Warner Mountains

22. Zone X-4

a. General Season: The season in Zone X-4 shall open on the first Saturday in October and extend for 16 consecutive days.
b. Bag and Possession Limit: One buck, forked horn (see subsection 351(a), Title 14, CCR) or better, per tag.
c. Number of Tags: 435
d. Legal boundary description of the project area:

In those portions of Lassen and Shasta counties within a line beginning at the junction of highways 89 and 44 at Old Station; north on Highway 89 to the intersection with the Pit River at Lake Britton; east and south on the Pit River to Horse Creek; southeast on Horse Creek to the Burlington Northern Railroad; southwest on the Burlington Northern Railroad to the Little Valley Road (Lassen County 404); south on the Little Valley Road to U.S. Forest Service Designated Through Route 22; south and east on U.S. Forest Service Designated Through Route 22 to Lassen County 519 near Gooch Mountain; east on Lassen County 519 to Cleghorn Road (Lassen County 521) near Coulthurst

Flat; east on Cleghorn Road to Highway 139; south on Highway 139 to its crossing of Willow Creek in the Willow Creek Valley; south (downstream) on Willow Creek to its crossing of Conservation Center Road (Lassen County A-27); west on Conservation Center Road to Highway 36; northwest on Highway 36 to the intersection with Highway 44; north and west on Highway 44 to the point of beginning.

Deer Herds: Cow Creek, West Lassen, East Lassen

23. Zone X-5a

a. General Season: The season shall open on the first Saturday in October and extend for 16 consecutive days.
b. Bag and Possession Limit: One buck, forked horn (see subsection 351(a), Title 14, CCR) or better, per tag.
c. Number of Tags: 70
d. Legal boundary description of the project area:

In that portion of Lassen County within a line beginning at the junction of Highway 395 and Conservation Center Road (Lassen County A-27) in the town of Litchfield; west on Conservation Center Road to its crossing of Willow Creek; northwest (upstream) on Willow Creek to its crossing of Highway 139 in the Willow Creek Valley; north along Highway 139 to the Termo-Grasshopper Road; east on the Termo-Grasshopper Road to Highway 395; south along Highway 395 to the point of beginning.

Deer Herd: East Lassen

24. Zone X-5b

a. General Season: The season shall open on the first Saturday in October and extend for 16 consecutive days.
b. Bag and Possession Limit: One buck, forked horn (see subsection 351(a), Title 14, CCR) or better, per tag.
c. Number of Tags: 155
d. Legal boundary description of the project area:

That portion of Lassen County lying within the following line: Beginning at the junction of Highway 395 and the Clarks Valley-Red Rock-Tuledad Road (Lassen County Roads 506, 510 and 512); east on the Clarks Valley-Red Rock-Tuledad Road to the California-Nevada state line; south on the California-Nevada state line to the Pyramid Lake Road (Lassen County 320); west on the Pyramid Lake Road to Highway 395; north on Highway 395 to the point of beginning.

Deer Herd: East Lassen

25. Zone X-6a

a. General Season: The season in Zone X-6a shall open on the first Saturday in October and extend for 16 consecutive days.
b. Bag and Possession Limit: One buck, forked horn (see subsection 351(a), Title 14, CCR) or better, per tag.
c. Number of Tags: 325
d. Legal boundary description of the project area:

In those portions of Lassen and Plumas counties within a line beginning at the junction of Highway 147 and Highway 36 near Westwood; east on Highway 36 to Conservation Center Road at Susanville (County Road A-27); east on Conservation Center Road to Highway 395 at the town of Litchfield; east on Highway 395 to the Wendel-Pyramid Lake Road (County Road 320); east on the Wendel-Pyramid Lake Road to the Nevada-California state line; south on the Nevada-California state line to the UP-WP railroad line near Herlong; west on the UP-WP railroad line to the Herlong Access Road (County Road A-25) at Herlong; west on the Herlong Access Road to Highway 395; north on Highway 395 to County Road 336 at Milford; southwest on County Road 336 to U.S. Forest Service Road 26N16 near the Plumas-Lassen County line; west on Forest Service Road 26N16 to Forest Service Road 28N03 at Doyle Crossing; west on Forest Service Road 28N03 to Forest Service Road 29N43 near Antelope Lake; south on Forest Service Road 29N43 to County Road 111 at Flournoy Bridge; south on County Road 111 to Forest Service Road 24N08; south on Forest Service Road 24N08 to County Road 112 at Lake Davis; south on County Road 112 to Highway 70; west on Highway 70 to the Highway 89 junction at Blairsden; west on Highway 89/70 to the Greenville “Y” west of Quincy; northwest on Highway 89 to Highway 147 at Canyon Dam; north on Highway 147 to the point of beginning.

Deer Herds: Doyle, Sloat

26. Zone X-6b

a. General Season: The season in Zone X-6b shall open on the first Saturday in October and extend for 16 consecutive days.
b. Bag and Possession Limit: One buck, forked horn (see subsection 351(a), Title 14, CCR) or better, per tag.
c. Number of Tags: 415
d. Legal boundary description of the project area:

In those portions of Lassen and Plumas counties within a line beginning at the junction of County Road 336 and Highway 395 at Milford; south on Highway 395 to the junction of Highway 395 and the Herlong Access Road (County Road A-25); east on the Herlong

Access Road to its junction with the UP-WP railroad line at Herlong; east on the UP-WP railroad line to the Nevada-California state line; south on the Nevada-California state line to the junction of the Nevada-California state line and Highway 395 at Bordertown; northwest on Highway 395 to its junction with Highway 70; west on Highway 70 to its junction with County Road 112; north on County Road 112 to its junction with U.S. Forest Service Road 24N08 at Lake Davis; north on Forest Service Road 24N08 to its junction with County Road 111; northwest on County Road 111 to its junction with Forest Service Road 29N43 at Flournoy Bridge; north on Forest Service Road 29N43 to Forest Service Road 28N03 near Antelope Lake; southeast on Forest Service Road 28N03 to Forest Service Road 26N16 at Doyle Crossing; east on Forest Service Road 26N16 to County Road 336 near the Plumas-Lassen county line; north on County Road 336 to the point of beginning.

Deer Herd: Doyle

27. Zone X-7a

a. General Season: The season in Zone X-7a shall open on the first Saturday in October and extend for 16 consecutive days.
b. Bag and Possession Limit: One buck, forked horn (see subsection 351(a), Title 14, CCR) or better, per tag.
c. Number of Tags: 220
d. Legal boundary description of the project area:

In those portions of Lassen, Nevada, Plumas and Sierra counties lying within a line beginning at the junction of Highway 395 and the California-Nevada state line at Bordertown; south along the Long Valley Road (County Road S570) to its intersection with the Henness Pass Road (County Road S860); west on Henness Pass Road over Summit 2 to the intersection with County Road S450 (near the Davies Creek Campground at Stampede Reservoir); west on County Road S450 (the Henness Pass Road) through Kyburz Flat to its intersection with Highway 89; south on Highway 89 to its intersection with Interstate 80 at Truckee; west on Interstate 80 to the Pacific Crest Trail near the Castle Peak-Boreal Ridge Summit; north on the Pacific Crest Trail to the new road to White Rock Lake (one mile west of White Rock Lake in Section 21, T18N, R14E, M.D.B.M.); north on the new White Rock Lake Road below Bear Valley to the White Rock Lake Road; north on the White Rock Lake Road to the Jackson Meadows Highway (Fiberboard Road); east two miles on the Jackson Meadows Highway to the Yuba Pass Road at Webber Lake; north on the Yuba Pass Road (main haul road) through Bonta Saddle to Highway 49 at Yuba Pass; west on Highway 49 to the new Gold Lake Road at Bassetts; north on the new Gold Lake Road to Highway 89 near Graeagle; north on Highway 89 to Highway 70; east on Highway 70 to Highway 395 at Hallelujah Junction; south on Highway 395 to the point of beginning.

Deer Herd: Loyalton/Truckee

28. Zone X-7b

a. General Season: The season in Zone X-7b shall open on the first Saturday in October and extend for 16 consecutive days.
b. Bag and Possession Limit: One buck, forked horn (see subsection 351(a), Title 14, CCR) or better, per tag.
c. Number of Tags: 100
d. Legal boundary description of the project area:

In those portions of Nevada, Placer and Sierra counties lying within a line beginning at the junction of Highway 395 and the California-Nevada state line at Bordertown; south along the California-Nevada state line to the shore of Lake Tahoe; west and south along the shore of Lake Tahoe to the mouth of Blackwood Creek near Idlewild; west on Blackwood Creek to Highway 89; north on Highway 89 to Blackwood Canyon Road; Blackwood Canyon Road near Idlewild; west along Blackwood Canyon Road to Forest Route 03; west and south along Forest Route 03 to the Pacific Crest Trail at Barker Pass; north on the Pacific Crest Trail to its intersection with Interstate 80 near the Castle Peak-Boreal Ridge Summit; east on Interstate 80 to its intersection with Highway 89 at Truckee; north on Highway 89 to County Road S450 (the Henness Pass Road, a.k.a. the Kyburz Flat Road); east on County Road S450 to its intersection with County Road S860 (continuation of Henness Pass Road) near the Davies Creek Campground at Stampede Reservoir; east on County Road S860, over Summit 2 to the junction with County Road S570 (the Long Valley Road); north on County Road S570 to Bordertown at the point of beginning.

Deer Herd: Loyalton/Truckee

29. Zone X-8

a. General Season: The season in Zone X-8 shall open on the fourth Saturday in September and extend for 16 consecutive days.
b. Bag and Possession Limit: One buck, forked horn (see subsection 351(a), Title 14, CCR) or better, per tag.
c. Number of Tags: 300
d. Legal boundary description of the project area:

In those portions of Alpine and El Dorado counties within a line beginning at the junction of the California-Nevada state line and Highway 50; southeast along the California-Nevada state line to the Indian Springs Road, south to the Alpine-Mono County line; south along the Alpine-Mono county line to the Sierra crest; northwest along the Sierra crest to the intersection with the Pacific Crest Trail near Wolf Creek Pass; northwest

along the Pacific Crest Trail to Highway 50 at Echo Summit; northeast on Highway 50 to the point of beginning.

Deer Herd: Carson River

30. Zone X-9a

a. General Season: The season in Zone X-9a shall open on the third Saturday in September and extend for 24 consecutive days.
b. Bag and Possession Limit: One buck, forked horn (see subsection 351 (a), Title 14, CCR) or better, per tag.
c. Number of Tags: 750
d. Legal boundary description of the project area:

In those portions of Fresno, Inyo, Madera and Mono counties within a line beginning at the intersection of Highway 6 and the California-Nevada state line; south along Highway 6 to its junction with Highway 395; south along Highway 395 to its junction with Highway 168; west and south along Highway 168 to the North Lake Road turnoff; west along the North Lake Road and the Piute Pass Trail to the Sierra Crest (Inyo National Forest Boundary); north along the Inyo National Forest Boundary to the Deer Creek Trail; south and west along the Deer Creek Trail to the upper crossing of Deer Creek; west and south along Deer Creek to its confluence with Fish Creek; west along Fish Creek to its confluence with the middle fork of the San Joaquin River; north along the middle fork of the San Joaquin River to the junction of King Creek; west along King Creek to the junction of Ashley Creek; west along Ashley Creek to Ashley Lake; continue west along Ashley Creek to the junction of the Inyo National Forest boundary; north along the Inyo National Forest Boundary (the crest of the Ritter Range) to the Mono-Tuolumne county line; north on the Mono-Tuolumne County line to the Virginia Lakes Trail (Entry Trail D-11); east along Virginia Lakes Trail to Virginia Lakes Road; east along Virginia Lakes Road to Highway 395; south along Highway 395 to Highway 167; east on Highway 167 to the California-Nevada state line; southeast on the California-Nevada state line to the point of beginning.

Deer Herds: Casa Diablo, Sherwin Grade, Buttermilk

31. Zone X-9b

a. General Season: The season in Zone X-9b shall open on the third Saturday in September and extend for 24 consecutive days.
b. Bag and Possession Limit: One buck, forked horn (see subsection 351(a), Title 14, CCR) or better, per tag.
c. Number of Tags: 325
d. Legal boundary description of the project area:

That portion of Inyo County within a line beginning at the intersection of Highway 395 and Cottonwood Creek; northwest along Cottonwood Creek to the Horseshoe Meadow Road; south along the Horseshoe Meadow Road to the Cottonwood Pass Trail; west along the Cottonwood Pass Trail through Horseshoe Meadow to the Inyo-Tulare County line at Cottonwood Pass; north on the Inyo-Tulare and the Inyo-Fresno county lines to the Piute Pass Trail; east along the Piute Pass Trail to the North Lake Road; east and south on the North Lake Road to Highway 168; north and east on Highway 168 to Highway 395; south on Highway 395 to the point of beginning.

Deer Herds: Goodale

32. Zone X-9c

a. General Season: The season in Zone X-9c shall open on the third Saturday in October and extend for 23 consecutive days.
b. Bag and Possession Limit: One buck, forked horn (see subsection 351(a), Title 14, CCR) or better, per tag.
c. Number of Tags: 325
d. Legal boundary description of the project area is as follows:

In those portions of Inyo and Mono counties within a line beginning at Highway 395 and the Kern-Inyo County line; north along Highway 395 to Highway 6; north on Highway 6 to the California-Nevada state line; southeast along the California-Nevada state line to Highway 127; south along Highway 127 to the Inyo-San Bernardino County line; west along the Inyo-San Bernardino County line to the Kern-Inyo County line; west along the Kern-Inyo County line to the point of beginning.

Deer Herd: Inyo/White Mountains

33. Zone X-10

a. General Season: The season in Zone X-10 shall open on the last Saturday in September and extend for 16 consecutive days.
b. Bag and Possession Limit: One buck, forked horn (see subsection 351(a), Title 14, CCR) or better, per tag.
c. Number of Tags: 400
d. Legal boundary description of the project area:

In those portions of Kern, Tulare and Inyo counties within a line beginning at the intersection of Highway 178 and the Doyle Ranch Road in the town of Onyx; north along the Doyle Ranch Road to the South Fork of the Kern River; north along the South Fork of the Kern River to the Chimney Meadow-Blackrock Station Road (Forest Road

21S03); northwest along the Chimney Meadow-Blackrock Station Road through Troy Meadows to the road's end at the Inyo and Sequoia National Forest boundary near Blackrock Mountain; northwest along the Inyo and Sequoia National Forest boundary to the main Kern River; northwest along the main Kern River to the Sequoia National Park boundary; northeast along the Sequoia National Park boundary to the Inyo-Tulare County line; southeast along the Inyo-Tulare County line to the Cottonwood Pass Trail at Cottonwood Pass; east along the Cottonwood Pass Trail through Horseshoe Meadow to the Horseshoe Meadow Road; north along the Horseshoe Meadow Road to Cottonwood Creek; southeast along Cottonwood Creek to Highway 395; south along Highway 395 to Highway 14; south along Highway 14 to Highway 178; north and west along Highway 178 to the point of beginning.

Deer Herd: Monache

34. Zone X-12

a. General Season: The season in Zone X-12 shall open on the third Saturday in September and extend for 24 consecutive days.
b. Bag and Possession Limit: One buck, forked horn (see subsection 351(a), Title 14, CCR) or better, per tag.
c. Number of Tags: 805
d. Legal boundary description of the project area:

That portion of Mono County within a line beginning at the junction of the California-Nevada state line and Highway 167 (Pole Line Road); west on Highway 167 to Highway 395; north on Highway 395 to Virginia Lakes Road; west on Virginia Lakes Road to the Virginia Lakes Trail (Entry Trail D11); northwest on the Virginia Lakes Trail to the Mono-Tuolumne County line; north along the Mono-Tuolumne County line to the Mono-Alpine County line; northeast along the Mono-Alpine County line to the Indian Springs Road; northeast on Indian Springs Road to the California-Nevada state line; southeast on the California-Nevada state line to the point of beginning.

Deer Herds: East Walker, West Walker, Mono Lake

AREA-SPECIFIC ARCHERY HUNTS

Archery Hunting With Area-specific Archery Tags. Deer may be taken only with archery equipment specified in Section 354, only during the archery seasons as follows:

35. A-1 (C Zones Archery Only Hunt)

a. Season:

1. Zone C-1. The archery season for Zone C-1 shall open on the third Saturday in August and extend for 16 consecutive days.
2. Zone C-2. The archery season for Zone C-2 shall open on the third Saturday in August and extend for 23 consecutive days.
3. Zone C-3. The archery season for Zone C-3 shall open on the third Saturday in August and extend for 23 consecutive days.
4. Zone C-4. The archery season for Zone C-4 shall open on the third Saturday in August and extend for 16 consecutive days.
b. Bag and Possession Limit: One buck, forked horn (see subsection 351(a), Title 14, CCR) or better, per tag.
c. Number of Tags: 2,045. A-1 (C Zones Archery Only Hunt) tags are valid in Zones C-1, C-2, C-3, and C-4 only during the archery season as specified above in subsections 361(b)(1)(B)1 through 4.
d. Legal boundary description of the project area:

Shall include all of Zones C-1, C-2, C-3, and C-4 as described in subsections 360(a)(3)(A)1. through 4.

Deer Herds: See Zones C-1 through C-4.

36. A-3 Hunt (Zone X-1 Archery Hunt)

a. Season: The archery season for hunt A-3 (Zone X-1 Archery Hunt) shall open on the third Saturday in August and extend for 23 consecutive days.
b. Bag and Possession Limit: One buck, forked horn (see subsection 351(a), Title 14, CCR) or better, per tag.
c. Number of Tags: 265
d. Legal boundary description of the project area:

See Zone X-1.

Deer Herds: See Zone X-1.

37. A-4 Hunt (Zone X-2 Archery Hunt)

a. Season: The archery season for hunt A-4 (Zone X-2 Archery Hunt) shall open on the third Saturday in August and extend for 23 consecutive days.
b. Bag and Possession Limit: One buck, forked horn (see subsection 351(a), Title 14, CCR) or better, per tag.
c. Number of Tags: 10
d. Legal boundary description of the project area:

See Zone X-2.

Deer Herds: See Zone X-2.

38. A-5 Hunt (Zone X-3a Archery Hunt)

a. Season: The archery season for hunt A-5 (Zone X-3a Archery Hunt) shall open on the third Saturday in August and extend for 23 consecutive days.
b. Bag and Possession Limit: One buck, forked horn (see subsection 351(a), Title 14, CCR) or better, per tag.
c. Number of Tags: 35
d. Legal boundary description of the project area:

See Zone X-3a.

Deer Herds: See Zone X-3a.

39. A-6 Hunt (Zone X-3b Archery Hunt)

a. Season: The archery season for hunt A-6 (Zone X-3b Archery Hunt) shall open on the third Saturday in August and extend for 23 consecutive days.
b. Bag and Possession Limit: One buck, forked horn (see subsection 351(a), Title 14, CCR) or better, per tag.
c. Number of Tags: 90
d. Legal boundary description of the project area:

See Zone X-3b.

Deer Herds: See Zone X-3b.

40. A-7 Hunt (Zone X-4 Archery Hunt)

a. Season: The archery season for hunt A-7 (Zone X-4 Archery Hunt) shall open on the third Saturday in August and extend for 23 consecutive days.
b. Bag and Possession Limit: One buck, forked horn (see subsection 351(a), Title 14, CCR) or better, per tag.
c. Number of Tags: 105
d. Legal boundary description of the project area:

See Zone X-4.

Deer Herds: See Zone X-4.

41. A-8 Hunt (Zone X-5a Archery Hunt)

a. Season: The archery season for hunt A-8 (Zone X-5a Archery Hunt) shall open on the third Saturday in August and extend for 23 consecutive days.
b. Bag and Possession Limit: One buck, forked horn (see subsection 351(a), Title 14, CCR) or better, per tag.
c. Number of Tags: 20
d. Legal boundary description of the project area:

See Zone X-5a.

Deer Herds: See Zone X-5a.

42. A-9 Hunt (Zone X-5b Archery Hunt)

a. Season: The archery season for hunt A-9 (Zone X-5b Archery Hunt) shall open on the third Saturday in August and extend for 23 consecutive days.
b. Bag and Possession Limit: One buck, forked horn (see subsection 351(a), Title 14, CCR) or better, per tag.
c. Number of Tags: 5
d. Legal boundary description of the project area:

See Zone X-5b.

Deer Herds: See Zone X-5b.

43. A-11 Hunt (Zone X-6a Archery Hunt)

a. Season: The archery season for hunt A-11 (Zone X-6a Archery Hunt) shall open on the third Saturday in August and extend for 23 consecutive days.
b. Bag and Possession Limit: One buck, forked horn (see subsection 351(a), Title 14, CCR) or better, per tag.
c. Number of Tags: 55
d. Legal boundary description of the project area:

See Zone X-6a.

Deer Herds: See Zone X-6a.

44. A-12 Hunt (Zone X-6b Archery Hunt)

a. Season: The archery season for hunt A-12 (Zone X-6b Archery Hunt) shall open on the third Saturday in August and extend for 23 consecutive days.

b. Bag and Possession Limit: One buck, forked horn (see subsection 351(a), Title 14, CCR) or better, per tag.
c. Number of Tags: 175
d. Legal boundary description of the project area:

See Zone X-6b.

Deer Herds: See Zone X-6b.

45. A-13 Hunt (Zone X-7a Archery Hunt)

a. Season: The archery season for hunt A-13 (Zone X-7a Archery Hunt) shall open on the third Saturday in August and extend for 23 consecutive days.
b. Bag and Possession Limit: One buck, forked horn (see subsection 351(a), Title 14, CCR) or better, per tag.
c. Number of Tags: 30
d. Legal boundary description of the project area:

See Zone X-7a.

Deer Herds: See Zone X-7a.

46. A-14 Hunt (Zone X-7b Archery Hunt)

a. Season: The archery season for hunt A-14 (Zone X-7b Archery Hunt) shall open on the third Saturday in August and extend for 23 consecutive days.
b. Bag and Possession Limit: One buck, forked horn (see subsection 351(a), Title 14, CCR) or better, per tag.
c. Number of Tags: 20
d. Legal boundary description of the project area:

See Zone X-7b.

Deer Herds: See Zone X-7b.

47. A-15 Hunt (Zone X-8 Archery Hunt)

a. Season: The archery season for hunt A-15 (Zone X-8 Archery Hunt) shall open on the third Saturday in August and extend for 23 consecutive days.
b. Bag and Possession Limit: One buck, forked horn (see subsection 351(a), Title 14, CCR) or better, per tag.
c. Number of Tags: 25
d. Legal boundary description of the project area:

See Zone X-8.

Deer Herds: See Zone X-8.

48. A-16 Hunt (Zone X-9a Archery Hunt)

a. Season: The archery season for hunt A-16 (Zone X-9a Archery Hunt) shall open on the third Saturday in August and extend for 23 consecutive days.
b. Bag and Possession Limit: One buck, forked horn (see subsection 351(a), Title 14, CCR) or better, per tag.
c. Number of Tags: 130
d. Legal boundary description of the project area:

See Zone X9a.

Deer Herds: See Zone X-9a.

49. A-17 Hunt (Zone X-9b Archery Hunt)

a. Season: The archery season for hunt A-17 (Zone X-9b Archery Hunt) shall open on the third Saturday in August and extend for 23 consecutive days.
b. Bag and Possession Limit: One buck, forked horn (see subsection 351(a), Title 14, CCR) or better, per tag.
c. Number of Tags: 300
d. Legal boundary description of the project area:

See Zone X-9b.

Deer Herds: See Zone X-9b.

50. A-18 Hunt (Zone X-9c Archery Hunt)

a. Season: The archery season for hunt A-18 (Zone X-9c Archery Hunt) shall open on the third Saturday in August and extend for 23 consecutive days.
b. Bag and Possession Limit: One buck, forked horn (see subsection 351(a), Title 14, CCR) or better, per tag.
c. Number of Tags: 350
d. Legal boundary description of the project area:

See Zone X9c.

Deer Herds: See Zone X-9c.

51. A-19 Hunt (Zone X-10 Archery Hunt)

a. Season: The archery season for hunt A-19 (Zone X-10 Archery Hunt) shall open on the third Saturday in August and extend for 16 consecutive days.
b. Bag and Possession Limit: One buck, forked horn (see subsection 351(a), Title 14, CCR) or better, per tag.
c. Number of Tags: 120
d. Legal boundary description of the project area:

See Zone X-10.

Deer Herds: See Zone X-10.

52. A-20 Hunt (Zone X-12 Archery Hunt)

a. Season: The archery season for hunt A-20 (Zone X-12 Archery Hunt) shall open on the third Saturday in August and extend for 23 consecutive days.
b. Bag and Possession Limit: One buck, forked horn (see subsection 351(a), Title 14, CCR) or better, per tag.
c. Number of Tags: 115
d. Legal boundary description of the project area:

See Zone X-12.

Deer Herds: See Zone X-12.

53. A-21 Hunt

a. Season: The season for hunt A-21 (Anderson Flat Archery Buck Hunt) shall open on the second Saturday in November and extend for 14 consecutive days.
b. Bag and Possession Limit: One buck, forked horn (see subsection 351(a), Title 14, CCR) or better, per tag.
c. Number of Tags: 25
d. Legal boundary description of the project area:

In that portion of hunt Zone D-6 in Mariposa and Tuolumne counties lying within a line beginning at the intersection of Highway 140 and Bull Creek Road at Briceburg; north on Bull Creek Road (U.S. Forest Service Road 2S05) to Greeley Hill Road; west on Greeley Hill Road to Smith Station Road (County Route J20); north on Smith Station Road to Highway 120 (near Burch Meadow); east on Highway 120 to the Yosemite National Park Boundary (near Big Oak-Flat Ranger Station); southeast along the Yosemite National Park Boundary to Highway 140; west on Highway 140 to the

Yosemite National Park Boundary; northwest along the Yosemite National Park Boundary to Highway 140 (at Redbud Campground); west on Highway 140 to the point of beginning.

Deer Herd: Yosemite

54. A-22 Hunt

a. Season: The season for hunt A-22 (San Diego Archery Either-Sex Deer Hunt) shall open on the first Saturday in September and extend for 44 consecutive days, and reopen on the third Saturday in November and extend through December 31.
b. Bag and Possession Limit: One either-sex deer (see subsection 351(c), Title 14, CCR) per tag.
c. Number of Tags: 1,000
d. Legal boundary description of the project area:

That portion of San Diego County within Zone D-16 (see subsection 360(a)(15)(A)).

Deer Herd: San Diego

55. A-24 Hunt

a. Season: The season for hunt A-24 (Monterey Archery Either-Sex Deer Hunt) shall open on the second Saturday in October and extend for 30 consecutive days.
b. Bag and Possession Limit: One either-sex deer (see subsection 351(c), Title 14, CCR) per tag.
c. Number of Tags: 100
d. Legal boundary description of the project area:

All of Monterey County, except Fort Ord Military Reservation.

Deer Herd: Santa Lucia

56. A-25 Hunt

a. Season: The season for hunt A-25 (Lake Sonoma Either-Sex Deer Hunt) is for Saturdays, Sundays and Mondays only, beginning on the first Saturday in October and extending for 24 consecutive days.
b. Bag and Possession Limit: One either-sex deer (see subsection 351(c), Title 14, CCR) per tag.
c. Number of Tags: 35
d. Special Conditions:
1. The use of dogs is prohibited.

2. Boats are required for all areas west of Cherry Creek (some 2/3 0f the hunt area). Only cartop boats are allowed to launch from the Yorty Creek access.
e. Legal boundary description of the project area:

That portion of Sonoma County within the boundaries of the Lake Sonoma Area, U.S. Army Corps of Engineers (COE) property described as follows: Beginning at the intersection of Hot Springs Road and the COE boundary; east and south along the boundary line to the intersection with Brush Creek; west along the north bank of Brush Creek (shoreline) to the Dry Creek arm of Lake Sonoma; south along the shoreline of Dry Creek arm; to Smittle Creek; north along the COE property line to Dry Creek; east along the COE boundary across Cherry Creek, Skunk Creek, and Yorty Creek to the point of beginning.

Deer Herd: Santa Rosa

57. A-26 Hunt

a. Season: The season for hunt A-26 (Bass Hill Archery Buck Deer Hunt) shall open on the third Saturday in November and extend for 23 consecutive days.
b. Bag and Possession Limit: One buck, forked horn (see subsection 351(a), Title 14, CCR) or better, per tag.
c. Number of Tags: 30
d. Legal boundary description of the project area:

That portion of Lassen County within the area described as Zone X-6a (see subsection 360(b)(8)(A)).

Deer Herd: Doyle

58. A-27 Hunt

a. Season: The season for hunt A-27 (Devil's Garden Archery Buck Hunt) shall open on the fourth Saturday in October and extend for 16 consecutive days.
b. Bag and Possession Limit: One buck, forked horn (see subsection 351(a), Title 14, CCR) or better, per tag.
c. Number of Tags: 10
d. Legal boundary description of the project area:

That portion of Modoc County within a line beginning at the intersection of the Malin Road (Modoc County 114) and the California/Oregon state line; east along the state line to the Crowder Flat Road; south along the Crowder Flat Road to the Blue Mountain Road (Modoc County 136); west on the Blue Mountain Road to the Blue Mountain-Mowitz Butte-Ambrose Road; south on the Blue Mountain-Mowitz Butte-Ambrose Road

to Highway 139; north on Highway 139 to the Malin Road; north on the Malin Road to the point of beginning.

Deer Herds: Devil's Garden/Interstate

59. A-30 Hunt

a. Season: The season for hunt A-30 (Covelo Archery Buck Hunt) shall open on the second Saturday of November and extend for 16 consecutive days.
b. Bag and Possession Limit: One buck, forked horn (see subsection 351(a), Title 14, CCR) or better, per tag.
c. Number of Tags: 40
d. Legal boundary description of the project area:

That portion of Mendocino County within a line beginning at the intersection of Highway 101 and the Humboldt-Mendocino county line; east along the Humboldt-Mendocino county line to the Trinity-Mendocino county line; east along the Trinity-Mendocino county line to the Mendocino-Tehama county line; south on the Mendocino-Tehama county line to the Mendocino-Glenn county line; south on the Mendocino-Glenn county line to the Mendocino-Lake county line; west and south on the Mendocino-Lake county line to the Main Eel River; west and north on the Main Eel River to the Hearst-Willits Road; southwest on the Hearst-Willits Road to Commercial Avenue; west on Commercial Avenue to Highway 101; north on Highway 101 to the point of beginning.

Deer Herd: Mendocino

60. A-31 Hunt

a. Season: The season for hunt A-31 (Los Angeles Archery Either-Sex Deer Hunt) shall open on the fourth Saturday in September and extend through December 31.
b. Bag and Possession Limit: One either-sex deer (see subsection 351(c), Title 14, CCR) per tag.
c. Number of Tags: 1,500
d. Legal boundary description of the project area:

That portion of Los Angeles County within Zone D-11 (see subsection 360(a)(10)(A)).

Deer Herd: Los Angeles

61. A-32 Hunt

a. Season: The season for hunt A-32 (Ventura/Los Angeles Late Season Archery Either-Sex Deer Hunt) shall open on the second Saturday in November and extend for 23 consecutive days.
b. Bag and Possession Limit: One either-sex deer (see subsection 351(c), Title 14, CCR) per tag.
c. Number of Tags: 250
d. Legal boundary description of the project area:

In those portions of Los Angeles and Ventura counties within the area described as the A Zone (see subsection 360(a)(1)(A)).

Deer Herd: Santa Barbara

GENERAL ARCHERY ONLY TAG HUNTS

62. Archery Hunting with Archery Only Tags

a. Season: The archery season and general seasons are provided in subsection 361(a) above and in subsections 360(a) and (c).
b. Bag and Possession Limit: All bag and possession limits per zone are the same as those described in subsections 360(a) and (c).
c. Number of Tags: Number of Archery Only Tags Permitted. A person may obtain an archery only tag using a one-deer tag application and a second archery only tag using a second deer tag application.
d. Special Conditions: Deer may be taken only with archery equipment specified in Section 354, during the archery seasons and general seasons. Archers not in possession of an archery only tag may hunt only in the zone, zones, or areas for which they have a general tag or an area-specific archery tag. (Refer to subsection 361(c)(2) for zones in which archery only tags are valid).
e. Legal boundary description of the project area:

Zones in Which Archery Only Tags are Valid. An archery only tag is valid for hunt G-10, and during the archery season and general season in all zones except C-1 through C-4 and X-1 through X-12.

Deer Herds: See Zones A, B-1 through B-6, D-3 through D-19

ADDITIONAL HUNTS

63. G-1 Hunt

a. Season: The season for additional hunt G-1 (Late Season Buck Hunt for Zone C-4) shall open on the fourth Saturday in October and extend for 9 consecutive days.
b. Bag and Possession Limit: One buck, forked horn (see subsection 351(a), Title 14, CCR) or better, per tag.
c. Number of Tags: 2,850
d. Legal boundary description of the project area:

Those portions of Butte, Glenn, Lassen, Plumas, Shasta, and Tehama counties within the area described as Zone C-4 (see subsection 360(a)(3)(A)4.).

Deer Herds: East Tehama, Mother Lode

64. G-3 Hunt

a. Season: The season for additional hunt G-3 (Goodale Buck Hunt) shall open on the first Saturday in December and extend for 16 consecutive days.
b. Bag and Possession Limit: One buck, forked horn (see subsection 351(a), Title 14, CCR) or better, per tag.
c. Number of Tags: 35
d. Legal boundary description of the project area is as follows:

In that portion of Inyo County within a line beginning at the intersection of Highway 395 and Lone Pine Creek; west along Lone Pine Creek to the Inyo-Tulare County line; northwest along the Inyo-Tulare and Inyo-Fresno county lines to Taboose Creek; east along Taboose Creek to Highway 395; south along Highway 395 to the point of beginning.

Deer Herd: Goodale

65. G-6 Hunt

a. Season: The season for additional hunt G-6 (Kern River Deer Herd Buck Hunt) shall open on the first Saturday in December and extend for nine consecutive days.
b. Bag and Possession Limit: One buck, forked horn (see subsection 351(a), Title 14, CCR) or better, per tag.
c. Number of Tags: 50
d. Legal boundary description of the project area:

In those portions of Kern and Tulare counties lying within a line beginning at the intersection of County Road 521 and County Road 495 at Kernville; south on County Road 495 to the intersection of Highway 155 at Wofford Heights; west on Highway 155 to the intersection of U.S. Forest Service Road 24S15 at Greenhorn Summit; north on U.S. Forest Service Road 24S15 to the intersection of U.S. Forest Service Road 23S16

(near Portuguese Pass); northeast on U.S. Forest Service Road 23S16 to County Road SM50; west on County Road SM50 to the intersection of the Western Divide Highway (County Road SM107); north on County Road SM107 to the junction of U.S. Forest Service Road 21S50 (near Quaking Aspen Campground); north on U.S. Forest Service Road 21S50 to the junction of U.S. Forest Service Road 20S79; northeast on U.S. Forest Service Road 20S79 to the junction of U.S. Forest Service Road 20S53; northeast on U.S. Forest Service Road 20S53 to the Golden Trout Wilderness boundary (at Lewis Camp Trail Head); east on the Golden Trout Wilderness Boundary to Rattlesnake Creek; southeast on Rattlesnake Creek to U.S. Forest Service Road 22S05; south on U.S. Forest Service Road 22S05 to the Dome Land Wilderness Boundary; southwest on the Dome Land Wilderness Boundary to the intersection of the South Fork of the Kern River; south along the South Fork of the Kern River to the intersection of County Road 521; west on County Road 521 to the point of beginning.

Deer Herd: Kern River

66. G-7 Hunt

a. Season: The season for additional hunt G-7 (Beale Either-Sex Deer Hunt) shall open on the third Saturday in August and extend for 79 consecutive days, except if rescheduled by the Commanding Officer with Department concurrence between the season opener and December 31.
b. Bag and Possession Limit: One either-sex deer (see subsection 351(c), Title 14, CCR) per tag.
c. Number of Tags: 20 (military only)
d. Special Conditions:
1. Only shotguns with single slugs or muzzleloading rifles, crossbows, and archery equipment as specified in sections 353 and 354 may be used.
2. In the event the Commanding Officer cancels the hunt, G-7 tagholders will only have the option of exchanging the unused tag for any remaining deer tag or receiving a refund.
e. Legal boundary description of the project area:

That portion of Yuba County lying within the exterior boundaries of Beale Air Force Base.

Deer Herd: Mother Lode

67. G-8 Hunt

a. Season: The season for additional hunt G-8 (Fort Hunter Liggett Antlerless Deer Hunt) shall be open Saturdays, Sundays, and the Columbus Day holiday only beginning the first Saturday in October and extend for two consecutive weekends, except if

rescheduled by the Commanding Officer with Department concurrence between the season opener and December 31.
b. Bag and Possession Limit: One antlerless deer (see subsection 351(b), Title 14, CCR) per tag.
c. Number of Tags: 20 (10 military and 10 general public)
d. Special Conditions: In the event the Commanding Officer cancels the hunt, G-8 tagholders will only have the option of exchanging the unused tag for any remaining deer tag or receiving a refund.
e. Legal boundary description of the project area:

That portion of Monterey County lying within the exterior boundaries of the Hunter Liggett Military Reservation, except as restricted by the Commanding Officer.

Deer Herd: Santa Lucia

68. G-9 Hunt

a. Season: The season for additional hunt G-9 (Camp Roberts Antlerless Deer Hunt) shall open the last Monday in August and extend for 8 consecutive days, except if
b. rescheduled by the Commanding Officer with Department concurrence between the season opener and December 31.
c. Bag and Possession Limit: One antlerless deer (see subsection 351(b), Title 14, CCR) per tag.
d. Number of Tags: 30 (15 military and 15 general public)
e. Special Conditions: In the event the Commanding Officer cancels the hunt, G-9 tagholders will only have the option of exchanging the unused tag for any remaining deer tag or receiving a refund.
f. Legal boundary description of the project area:

That portion of San Luis Obispo County lying within the exterior boundaries of Camp Roberts, except as restricted by the Commanding Officer.

Deer Herd: Adelaida

69. G-10 Hunt

a. Season: The season for additional hunt G-10 (Camp Pendleton Either-Sex Deer Hunt) shall be open on Saturdays, Sundays, the Columbus and Veterans Day Holidays and the day after Thanksgiving only beginning the third Saturday in September and extend through the Sunday following the Thanksgiving Day holiday, except if rescheduled by the Commanding Officer with Department concurrence between the season opener and December 31.

b. Bag and Possession Limit: One either-sex deer (see subsection 351(c), Title 14, CCR) per tag.
c. Number of Tags: 300 (military only)
d. Special Conditions:
1. Only archery equipment is permitted during the first four weekends of the season.
2. Hunting with firearms is permitted beginning on the fifth weekend through the end of season.
3. A permit fee and method of take registration with the Base are required.
4. In the event the Commanding Officer cancels the hunt, G-10 tagholders will only have the option of exchanging the unused tag for any remaining deer tag or receiving a refund.
e, Legal boundary description of the project area:

That portion of San Diego County lying within the exterior boundaries of the U.S. Marine Corps Base, Camp Joseph Pendleton.

Deer Herd: Santa Ana Mountains

70. G-11 Hunt

a. Season: The season for additional hunt G-11 (Vandenberg Either-Sex Deer Hunt) shall open on the last Monday in August and extend through December 31.
b. Bag and Possession Limit: One either-sex deer (see subsection 351(c), Title 14, CCR) per tag.
c. Number of Tags: 500 (military and Department of Defense employees only)
d. Special Conditions: In the event the Commanding Officer cancels the hunt, G-11 tagholders will only have the option of exchanging the unused tag for any remaining deer tag or receiving a refund.
e. Legal boundary description of the project area:

That portion of Santa Barbara County lying within the exterior boundaries of Vandenberg Air Force Base.

Deer Herd: Santa Barbara

71. G-12 Hunt

a. Season: The season for additional hunt G-12 (Gray Lodge Shotgun Either-Sex Deer Hunt) shall open on the third Saturday in September and extend for nine consecutive days.
b. Bag and Possession Limit: One either-sex deer (see subsection 351(c), Title 14, CCR) per tag.

c. Number of Tags: 30
d. Special Conditions: Only shotguns and ammunition, as specified in Section 353, Title 14, CCR, may be used.
e. Legal boundary description of the project area:

Those portions of Butte and Sutter counties within the exterior boundaries of the Gray Lodge State Wildlife Area.

Deer Herd: Mother Lode

72. G-13 Hunt

a. Season: The season for additional hunt G-13 (San Diego Antlerless Deer Hunt) shall open on the fourth Saturday in October and extend for 23 consecutive days.
b. Bag and Possession Limit: One antlerless deer (see subsection 351(b), Title 14, CCR) per tag.
c. Number of Tags: 300
d. Legal boundary description of the project area:

That portion of San Diego County within Zone D-16 (see subsection 360(a)(15)(A)).

Deer Herd: San Diego

73. G-19 Hunt

a. Season: The season for additional hunt G-19 (Sutter-Yuba Wildlife Areas Either-Sex Deer Hunt) shall open on the fourth Saturday in September and extend through December 31.
b. Bag and Possession Limit: One either-sex deer (see subsection 351(c), Title 14, CCR) per tag.
c. Number of Tags: 25
d. Special Conditions: Only archery equipment and crossbows (as specified in Section 354) and shotguns and ammunition (as specified in Section 353) may be used.
e. Legal boundary description of the project area:

Those portions of Yuba and Sutter counties within the exterior boundaries of: (1) the Feather River Wildlife Area, and (2) the Sutter Bypass Wildlife Area (as defined in Section 550, Title 14, CCR).

Deer Herd: Mother Lode

74. G-21 Hunt

a. Season: The season for additional hunt G-21 (Ventana Wilderness Buck Hunt) shall open on the second Saturday in November and extend for 23 consecutive days.
b. Bag and Possession Limit: One buck, forked horn (see subsection 351(a), Title 14 CCR) or better, per tag.
c. Number of Tags: 25
d. Legal boundary description of the project area:

That portion of Monterey County and the Los Padres National Forest within the exterior boundaries of the Ventana Wilderness Area.

Deer Herd: Santa Lucia

75. G-37 Hunt

a. Season: The season for additional hunt G-37 (Anderson Flat Buck Hunt) shall open on the fourth Saturday in November and extend for nine consecutive days.
b. Bag and Possession Limit: One buck, forked horn (see subsection 351(a), Title 14, CCR) or better, per tag.
c. Number of Tags: 25
d. Legal boundary description of the project area:

In that portion of hunt Zone D-6 in Mariposa and Tuolumne counties lying within a line beginning at the intersection of Highway 140 and Bull Creek Road at Briceburg; north on Bull Creek Road (U.S. Forest Service Road 2S05) to Greeley Hill Road; west on Greeley Hill Road to Smith Station Road (County Route J20); north on Smith Station Road to Highway 120 (near Burch Meadow); east on Highway 120 to the Yosemite National Park Boundary (near Big Oak-Flat Ranger Station); southeast along the Yosemite National Park Boundary to Highway 140; west on Highway 140 to the Yosemite National Park Boundary; northwest along the Yosemite National Park Boundary to Highway 140 (at Redbud Campground); west on Highway 140 to the point of beginning.

Deer Herd: Yosemite

76. G-38 Hunt

a. Season: The season for additional hunt G-38 (X-10 Late Season Buck Hunt) shall open on the third Saturday in October and extend for 16 consecutive days.
b. Bag and Possession Limit: One buck, forked horn (see subsection 351(a), Title 14, CCR) or better, per tag.
c. Number of Tags: 300
d. Legal boundary description of the project area:

In those portions of Kern, Tulare and Inyo counties within a line beginning at the intersection of Highway 178 and the Doyle Ranch Road in the town of Onyx; north along the Doyle Ranch Road to the South Fork of the Kern River; north along the South Fork of the Kern River to the Chimney Meadow-Blackrock Station Road (Forest Road 21S03); northwest along the Chimney Meadow-Blackrock Station Road through Troy Meadows to the road's end at the Inyo and Sequoia National Forest boundary near Blackrock Mountain; northwest along the Inyo and Sequoia National Forest boundary to the main Kern River; northwest along the main Kern River to the Sequoia National Park boundary; northeast along the Sequoia National Park boundary to the Inyo-Tulare County line; southeast along the Inyo-Tulare County line to the Cottonwood Pass Trail at Cottonwood Pass; east along the Cottonwood Pass Trail through Horseshoe Meadow to the Horseshoe Meadow Road; north along the Horseshoe Meadow Road to Cottonwood Creek; southeast along Cottonwood Creek to Highway 395; south along Highway 395 to Highway 14; south along Highway 14 to Highway 178; north and west along Highway 178 to the point of beginning.

Deer Herd: Monache

77. G-39 Hunt

a. Season: The season for additional hunt G-39 (Round Valley Late Season Buck Hunt) shall open on the fourth Saturday in October and extend for 16 consecutive days.
b. Bag and Possession Limit: One buck, forked horn (see subsection 351(a), Title 14, CCR) or better, per tag.
c. Number of Tags: 5
d. Legal boundary description of the project area:

In that portion of Inyo and Mono counties within a line beginning at the intersection of U.S. Highway 395 and California Highway 168; west and south along Highway 168 to the North Lake Road turnoff; west along the North Lake Road and the Piute Pass Trail to the Inyo-Fresno county line; north along the Inyo-Fresno county line to the Mono-Fresno county line; north along the Mono-Fresno and Mono-Madera county lines to the junction of the Mono-Madera county line and California Highway 203 at Minaret Summit; southeast along Highway 203 to its junction with Highway 395; south along Highway 395 to the point of beginning.

Deer Herd: Buttermilk, Sherwin Grade

78. M-3 Hunt

a. Season: The season for additional hunt M-3 (Doyle Muzzleloading Rifle Buck Hunt) shall open on the third Saturday in November and extend for nine consecutive days.

b. Bag and Possession Limit: One buck, forked horn (see subsection 351(a), Title 14, CCR) or better, per tag.
c. Number of Tags: 20
d. Special Conditions: Only muzzleloading rifles as specified in Section 353, Title 14, CCR, may be used.
e. Legal boundary description of the project area:

That portion of Lassen County within the area described as X-6b (see subsection 360(b)(9)(A)).

Deer Herd: Doyle

79. M-4 Hunt

a. Season: The season for additional hunt M-4 (Horse Lake Muzzleloading Rifle Buck Hunt) shall open on the fourth Saturday in October and extend for nine consecutive days.
b. Bag and Possession Limit: One buck, forked horn (see subsection 351(a), Title 14, CCR) or better, per tag.
c. Number of Tags: 5
d. Special Conditions: Only muzzleloading rifles as specified in Section 353, Title 14, CCR, may be used.
e. Legal boundary description of the project area:

That portion of Lassen County within the area described as X-5a (see subsection 360(b)(6)(A)).

Deer Herd: East Lassen

80. M-5 Hunt

a. Season: The season for additional hunt M-5 (East Lassen Muzzleloading Rifle Buck Hunt) shall open on the fourth Saturday in October and extend for nine consecutive days.
b. Bag and Possession Limit: One buck, forked horn (see subsection 351(a), Title 14, CCR) or better, per tag.
c. Number of Tags: 15
d. Special Conditions: Only muzzleloading rifles as specified in Section 353, Title 14, CCR, may be used.
e. Legal boundary description of the project area:

That portion of Lassen County within the area described as Zone X-5b (see subsection 360(b)(7)(A).

Deer Herd: East Lassen

81. M-6 Hunt

a. Season: The season for additional hunt M-6 (San Diego Muzzleloading Rifle Either-Sex Deer Hunt) shall open on the third Saturday in December and extend through December 31.
b. Bag and Possession Limit: One either-sex deer (see subsection 351(c), Title 14, CCR) per tag.
c. Number of Tags: 80
d. Special Conditions: Only muzzleloading rifles as specified in Section 353, Title 14, CCR, may be used.
e. Legal boundary description of the project area:

That portion of San Diego County within Zone D-16 (see subsection 360(a)(15)(A)).

Deer Herd: San Diego

82. M-7 Hunt

a. Season: The season for additional hunt M-7 (Ventura Muzzleloading Rifle Either-Sex Deer Hunt) shall open on the last Saturday in November and extend for 16 consecutive days.
b. Bag and Possession Limit: One either-sex deer (see subsection 351(c), Title 14, CCR) per tag.
c. Number of Tags: 150
d. Special Conditions: Only muzzleloading rifles as specified in Section 353, Title 14, CCR, may be used.
e. Legal boundary description of the project area:

All of Ventura County.

Deer Herd: Santa Barbara

83. M-8 Hunt

a. Season: The season for additional hunt M-8 (Bass Hill Muzzleloading Rifle Buck Deer Hunt) shall open on the fourth Saturday in October and extend for nine consecutive days.
b. Bag and Possession Limit: One buck, forked horn (see subsection 351(a), Title 14, CCR) or better, per tag.
c. Number of Tags: 20

d. Special Conditions: Only muzzleloading rifles as specified in Section 353, Title 14, CCR, may be used.
e. Legal boundary description of the project area:

That portion of Lassen County within the area described as Zone X-6a (see subsection 360(b)(8)(A)).

Deer Herd: Doyle

84. M-9 Hunt

a. Season: The season for additional hunt M-9 (Devil's Garden Muzzleloading Rifle Buck Hunt) shall open on the fourth Saturday in October and extend for 16 consecutive days.
b. Bag and Possession Limit: One buck, forked horn (see subsection 351(a), Title 14, CCR) or better, per tag.
c. Number of Tags: 15
d. Special Conditions: Only muzzleloading rifles as specified in Section 353 may be used.
e. Legal boundary description of the project area:

That portion of Modoc County within a line beginning at the intersection of the Malin Road (Modoc County 114) and the California/Oregon state line; east along the state line to the Crowder Flat Road; south along the Crowder Flat Road to the Blue Mountain Road (Modoc County 136); west on the Blue Mountain Road to the Blue Mountain-Moitz Butte-Ambrose Road; south on the Blue Mountain-Mowitz Butte-Ambrose Road to Highway 139; north on Highway 139 to the Malin Road; north on the Malin Road to the point of beginning.

Deer Herd: Devil's Garden/Interstate

85 M-11 Hunt

a. Season: The season for additional hunt M-11 (Northwestern California Muzzleloading Rifle Buck Hunt) shall open on the second Saturday in November and extend for 16 consecutive days.
b. Bag and Possession Limit: One buck, forked horn (see subsection 351(a), Title 14, CCR) or better, per tag.
c. Number of Tags: 20
d. Special Conditions: Only muzzleloading rifles as specified in Section 353 may be used.
e. Legal boundary description of the project area:

Those portions of Del Norte, Glenn, Humboldt, Lake, Mendocino, Siskiyou, and Trinity counties within the area described as Zone B-1 (see subsection 360(a)(2)(A)1).

Deer Herd: Mendocino, Clear Lake, Mad River, Redwood Creek, Ruth, Smith River

86. MA-1 Hunt

a. Season: The season for additional hunt MA-1 (San Luis Obispo Muzzleloading Rifle/Archery Either-Sex Deer Hunt) shall open the last Saturday in November and extend for 16 consecutive days.
b. Bag and Possession Limit: One either-sex deer (see subsection 351(c), Title 14, CCR) per tag.
c. Number of Tags: 150
d. Special Conditions: Only archery equipment as specified in Section 354 or muzzleloading rifles as specified in Section 353 may be used.
e. Legal boundary description of the project area:

That portion of San Luis Obispo County lying within the Los Padres National Forest.

Deer Herds: Adelaida, Pozo

87. MA-3 Hunt

a. Season: The season for additional hunt MA-3 (Santa Barbara Muzzleloading Rifle/Archery Buck Hunt) shall open on the last Saturday in November and extend for 16 consecutive days.
b. Bag and Possession Limit: One buck, forked horn (see subsection 351(a), Title 14, CCR) or better, per tag.
c. Number of Tags: 150
d. Special Conditions: Only muzzleloading rifles as specified in Section 353 and archery equipment as specified in Section354 may be used.
e. Legal boundary description of the project area:

All of Santa Barbara County.

Deer Herd: Santa Barbara

88. J-1 Hunt

a. Season: The season for additional hunt J-1 (Lake Sonoma Junior Either-sex Deer Hunt) shall open on the first Saturday in November and extend for two consecutive days.

b. Bag and Possession Limit: One either-sex deer (see subsection 351(c), Title 14, CCR) per tag.
c. Number of Tags: 25
d. Special Conditions:
1. Only junior license holders shall apply (see subsection 708(a)(2)).
2. Tagholders shall be accompanied by an adult chaperon 18 years of age or older while hunting.
3. Tagholders shall attend an orientation meeting the day before the opening day of the season.
4. The use of dogs is prohibited.
5. Boats are required for all areas west of Cherry Creek (some 2/3 of the hunt area). Only cartop boats are allowed to launch from the Yorty Creek access.
e. Legal boundary description of the project area:

That portion of Sonoma County within the boundaries of the Lake Sonoma Area, U.S. Army Corps of Engineers (COE) property described as follows: Beginning at the intersection of Hot Springs Road and the COE boundary; east and south along the boundary line to the intersection with Brush Creek; west along the north bank of Brush Creek (shoreline) to the Dry Creek arm of Lake Sonoma; south along the shoreline of the Dry Creek arm to Smittle Creek; north along the COE property line to Dry Creek; east along the COE boundary across Cherry Creek, Skunk Creek, and Yorty Creek to the point of beginning.

Deer Herd: Santa Rosa

89. J-3 Hunt

a. Season: The season for additional hunt J-3 (Tehama Wildlife Area Junior Buck Hunt) shall begin on the last Saturday in November and extend for two consecutive days.
b. Bag and Possession Limit: One buck, forked horn (see subsection 351(a), Title 14, CCR) or better, per tag.
c. Number of Tags: 15
d. Special Conditions:
1. Only junior license holders shall apply (see subsection 708(a)(2)).
2. Tagholders shall be accompanied by an adult chaperon 18 years of age or older while hunting.
3. Tagholders shall attend an orientation meeting the day before the opening day of the season.
e. Legal boundary description of the project area:

That portion of Tehama County within the boundaries of the Tehama Wildlife Area.

Deer Herd: Tehama

90. J-4 Hunt

a. Season: The season for additional hunt J-4 (Shasta-Trinity Junior Buck Hunt) shall open on the fourth Saturday in November and extend for nine consecutive days.
b. Bag and Possession Limit: One buck, forked horn (see subsection 351(a), Title 14, CCR) or better, per tag.
c. Number of Tags: 15
d. Special Conditions:
1. Only junior license holders shall apply (see subsection 708(a)(2)).
2. Tagholders shall be accompanied by an adult chaperon 18 years of age or older while hunting.
e. Legal boundary description of the project area:

In those portions of Shasta and Trinity counties beginning at the junction of Highway 3 and Highway 299 in Weaverville; north on Highway 3 to the East Side Road at the north end of Trinity Lake; east on the East Side Road to Dog Creek Road; east on Dog Creek Road to Interstate 5 at Vollmers; south on Interstate 5 to Shasta Lake; south along the west shore of Shasta Lake to Shasta Dam; south along Shasta Dam along the Sacramento River to Keswick Dam Road; west on Keswick Dam Road to Rock Creek Road; south on Rock Creek Road to Highway 299; west on Highway 299 to the point of beginning.

Deer Herd: Weaverville

91. J-7 Hunt

a. Season: The season for additional hunt J-7 (Carson River Junior Either-Sex Deer Hunt) shall open on the first Saturday following the closure of the X-8 general season (see subsection 360(b)(12)(B), Title 14, CCR) and extend for nine consecutive days.
b. Bag and Possession Limit: One either-sex deer (see subsection 351(c), Title 14, CCR) per tag.
c. Number of Tags: 15
d. Special Conditions:
1. Only junior license holders shall apply (see subsection 708(a)(2)).
2. Tagholders shall be accompanied by an adult chaperon 18 years of age or older while hunting.
e. Legal boundary description of the project area:

That portion of Alpine County within the area described as Zone X-8 (see subsection 360(b)(12)(A)).

Deer Herd: Carson River

92. J-8 Hunt

a. Season: The season for additional hunt J-8 (Daugherty Hill Wildlife Area Junior Either-Sex Deer Hunt) shall open on the first Saturday in December and extend through December 31.
b. Bag and Possession Limit: One either-sex deer (see subsection 351(c), Title 14, CCR) per tag.
c. Number of Tags: 15
d. Special Conditions:
1. Only junior license holders shall apply (see subsection 708(a)(2)).
2. Tagholders shall be accompanied by an adult chaperon 18 years of age or older while hunting.
3. Tag holders shall attend an orientation meeting the day before the opening day of the season.
e. Legal boundary description of the project area:

That portion of Yuba County within the exterior boundaries of the Daugherty Hill Wildlife Area (as defined in Section 550, Title 14, CCR).

Deer Herd: Mooretown

93. J-9 Hunt

a. Season: The season for additional hunt J-9 (Little Dry Creek Junior Shotgun Either-Sex Deer Hunt) shall open on the third Saturday in September and extending for 9 consecutive days.
b. Bag and Possession Limit: One either-sex deer (see subsection 351(c), Title 14, CCR) per tag.
c. Number of Tags: 5
d. Special Conditions:
1. Only junior license holders shall apply (see subsection 708(a)(2)).
2. Tagholders shall be accompanied by an adult chaperon 18 years of age or older while hunting.
3. Tag holders shall attend an orientation meeting the day before the opening day of the season.
4. Only shotguns and ammunition as specified in Section 353 may be used.
e. Legal boundary description of the project area:

That portion of Butte County within the exterior boundaries of the Little Dry Creek Unit Upper Butt Basin Wildlife Area (as defined in Section 550, Title 14, CCR).

Deer Herd: Mother Lode

94. J-10 Hunt

a. Season: The season for additional hunt J-10 (Fort Hunter Liggett Junior Either-Sex Deer Hunt) shall be open Saturdays, Sundays, and the Columbus Day holiday only beginning the first Saturday in October and extend for two consecutive weekends, except if rescheduled by the Commanding Officer with Department concurrence between the season opener and December 31.
b. Bag and Possession Limit: One either-sex deer (see subsection 351(c), Title 14, CCR) per tag.
c. Number of Tags: 60 (10 military and 50 general public)
d. Special Conditions:
1. Only junior license holders shall apply (see subsection 708(a)(2)).
2. Tagholders shall be accompanied by an adult chaperon 18 years of age or older while hunting.
3. Tagholders shall attend an orientation meeting the day before the opening day of the season.
4. In the event the Commanding Officer cancels the hunt, J-10 tagholders will only have the option of exchanging the unused tag for any remaining deer tag or receiving a refund.
e. Legal boundary description of the project area:

That portion of Monterey County lying within the exterior boundaries of the Fort Hunter Liggett Military Reservation, except as restricted by the Commanding Officer.

Deer Herd: Santa Lucia

95. J-11 Hunt

a. Season: The season for additional hunt J-11 (San Bernardino Junior Either-Sex Deer Hunt) shall open on the third Saturday in November and extend for 9 consecutive days.
b. Bag and Possession Limit: One either-sex deer (see subsection 351(c), Title 14, CCR) per tag.
c. Number of Tags: 40
d. Special Conditions:
1. Only junior license holders shall apply (see subsection 708(a)(2)).
2. Tagholders shall be accompanied by an adult chaperon 18 years of age or older while hunting.
e. Legal boundary description of the project area:

In those portions of D-14 (as described in subsection 360(a)(13)(A)) within San Bernardino County.

Deer Herd: San Bernardino Mountains

96. J-12 Hunt

a. Season: The season for additional hunt J-12 (Round Valley Junior Buck Hunt) shall open on the first Saturday in December and extend for 16 consecutive days.
b. Bag and Possession Limit: One buck, forked horn (see subsection 351(a), Title 14, CCR) or better, per tag.
c. Number of Tags: 10
d. Special Conditions:
1. Only junior license holders shall apply (see subsection 708(a)(2)).
2. Tagholders shall be accompanied by an adult chaperon 18 years of age or older while hunting.
e. Legal boundary description of the project area:

In that portion of Inyo and Mono counties within a line beginning at the intersection of U.S. Highway 395 and California Highway 168; west and south along Highway 168 to the North Lake Road turnoff; west along the North Lake Road and the Piute Pass Trail to the Inyo-Fresno county line; north along the Inyo-Fresno county line to the Mono-Fresno county line; north along the Mono-Fresno and Mono-Madera county lines to the junction of the Mono-Madera county line and California Highway 203 at Minaret Summit; southeast along Highway 203 to its junction with Highway 395; south along Highway 395 to the point of beginning.

Deer Herd: Buttermilk, Sherwin Grade

97. J-13 Hunt

a. Season: The season for additional hunt J-13 (Los Angeles Junior Either-Sex Deer Hunt) shall open on the third Saturday in November and extend for 9 consecutive days.
b. Bag and Possession Limit: One either-sex deer (see subsection 351(c), Title 14, CCR) per tag.
c. Number of Tags: 40
d. Special Conditions:
1. Only junior license holders shall apply (see subsection 708(a)(2)).
2. Tagholders shall be accompanied by an adult chaperon 18 years of age or older while hunting.
e. Legal boundary description of the project area:

In that portion of Los Angeles County within Zone D-11 (see subsection 360(a)(10)(A)).

Deer Herd: Los Angeles

98. J-14 Hunt

a. Season: The season for additional hunt J-14 (Riverside Junior Either-Sex Deer Hunt) shall open on the third Saturday in November and extend for 9 consecutive days.
b. Bag and Possession Limit: One either-sex deer (see subsection 351(c), Title 14, CCR) per tag.
c. Number of Tags: 30
d. Special Conditions:
1. Only junior license holders shall apply (see subsection 708(a)(2)).
2. Tagholders shall be accompanied by an adult chaperon 18 years of age or older while hunting.
e. Legal boundary description of the project area:

In that portion of Riverside County within Zone D-19 (see subsection 360(a)(17)(A)).

Deer Herd: San Jacinto/Santa Rosa Mountains

99. J-15 Hunt

a. Season: The season for additional hunt J-15 (Anderson Flat Junior Buck Hunt) shall open on the fourth Saturday in November and extend for 9 consecutive days.
b. Bag and Possession Limit: One buck, forked horn (see subsection 351(a), Title 14, CCR) or better, per tag.
c. Number of Tags: 10
d. Special Conditions:
1. Only junior license holders shall apply (see subsection 708(a)(2)).
2. Tagholders shall be accompanied by an adult chaperon 18 years of age or older while hunting.
e. Legal boundary description of the project area:

In that portion of hunt Zone D-6 in Mariposa and Tuolumne counties lying within a line beginning at the intersection of Highway 140 and Bull Creek Road at Briceburg; north on Bull Creek Road (U.S. Forest Service Road 2S05) to Greeley Hill Road; west on Greeley Hill Road to Smith Station Road (County Route J20); north on Smith Station Road to Highway 120 (near Burch Meadow); east on Highway 120 to the Yosemite National Park Boundary (near Big Oak-Flat Ranger Station); southeast along the Yosemite National Park Boundary to Highway 140; west on Highway 140 to the Yosemite National Park Boundary; northwest along the Yosemite National Park Boundary to Highway 140 (at Redbud Campground); west on Highway 140 to the point of beginning.

Deer Herds: Stanislaus, Tuolumne, Yosemite

100. J-16 Hunt

a. Season: The season for additional hunt J-16 (Bucks Mountain-Blue Canyon Junior Either-Sex Deer Hunt) shall be concurrent with the zone D-3 general season as defined in subsection 360(a)(4)(B).
b. Bag and Possession Limit: One either-sex deer (see subsection 351(c)) per tag.
c. Number of Tags: 75
d. Special Conditions:
1. Only junior license holders shall apply (see subsection 708(a)(2)).
2. Tagholders shall be accompanied by an adult chaperon 18 years of age or older while hunting.
e. Legal boundary description of the project area:

Excluding Glenn County, in those portions of Butte, Colusa, Nevada, Placer, Plumas, Sierra, Sutter and Yuba Counties within the area described as zone D-3 (see subsection 360(a)(4)(A)1).

Deer Herds: Blue Canyon, Bucks Mountain/Mooretown, Downieville/Nevada City, Mother Lode

101. J-17 Hunt

a. Season: The season for additional hunt J-17 (Zone D-4 Junior Either-Sex Deer Hunt) shall be concurrent with the zone D-4 general season as defined in subsection 360(a)(4)(B).
b. Bag and Possession Limit: One either-sex deer (see subsection 351(c)) per tag.
c. Number of Tags: 25.
d. Special Conditions:
1. Only junior license holders shall apply (see subsection 708(a)(2)).
2. Tagholders shall be accompanied by an adult chaperon 18 years of age or older while hunting.
e. Legal boundary description of the project area:

In those portions of Colusa, Nevada, Placer, Sacramento, Sutter, Yolo and Yuba Counties within the area described as zone D-4 (see subsection 360(a)(4)(A)2).

Deer Herds: Blue Canyon, Mother Lode, Nevada City

102. J-18 Hunt

a. Season: The season for additional hunt J-18 (Pacific-Railroad Flat Junior Either-Sex Deer Hunt) shall be concurrent with the zone D-5 general season as defined in subsection 360(a)(4)(B).
b. Bag and Possession Limit: One either-sex deer (see subsection 351(c)) per tag.
c. Number of Tags: 75.
d. Special Conditions:
1. Only junior license holders shall apply (see subsection 708(a)(2)).
2. Tagholders shall be accompanied by an adult chaperon 18 years of age or older while hunting.
e. Legal boundary description of the project area:

Excluding Tuolumne County, in those portions of Alpine, Amador, Calaveras, El Dorado, Placer, Sacramento, San Joaquin, and Stanislaus counties within the area described as zone D-5 (see subsection 360(a)(4)(A)3).

Deer Herds: Carson River, Grizzly Flat, Mother Lode, Pacific, Railroad Flat, Salt Springs

103. J-19 Hunt

a. Season: The season for additional hunt J-19 (Zone X-7a Junior Either-Sex Deer Hunt) shall be concurrent with the zone X-7a general season as defined in subsection 360(b)(10)(B).
b. Bag and Possession Limit: One either-sex deer (see subsection 351(c)) per tag.
c. Number of Tags: 25
d. Special Conditions:
1. Only junior license holders shall apply (see subsection 708(a)(2)).
2. Tagholders shall be accompanied by an adult chaperon 18 years of age or older while hunting.
e. Legal boundary description of the project area:

In those portions of Lassen, Nevada, Plumas and Sierra Counties within the area described as zone X-7a (see subsection 360(b)(10)(A)).

Deer Herds: Loyalton/Truckee

104. J-20 Hunt

a. Season: The season for additional hunt J-20 (Zone X-7b Junior Either-Sex Deer Hunt) shall be concurrent with the zone X-7b general season as described in subsection 360(b)(11)(B).
b. Bag and Possession Limit: One either-sex deer (see subsection 351(c)) per tag.
c. Number of Tags: 20.
d. Special Conditions:

1. Only junior license holders shall apply (see subsection 708(a)(2)).
2. Tagholders shall be accompanied by an adult chaperon 18 years of age or older while hunting.
e. Legal boundary description of the project area:

In those portions of Nevada, Placer and Sierra Counties within the area described as zone X-7b (see subsection 360(b)(11)(A)).

Deer Herds: Loyalton/Truckee

105. J-21 Hunt

a. Season: The season for additional hunt J-21 (East Tehama Junior Either-Sex Deer Hunt) shall open on the third Saturday in September and extend for 44 consecutive days.
b. Bag and Possession Limit: One either-sex deer (see subsection 351(c)) per tag.
c. Number of Tags: 50
d. Special Conditions:
1. Only junior license holders shall apply (see subsection 708(a)(2)).
2. Tagholders shall be accompanied by an adult chaperon 18 years of age or older while hunting.
e. Legal boundary description of the project area:

In that portion of Tehama County within the area described as zone C-4 (see subsection 360(a)(3)(A)4.).

Deer Herds: East Tehama

FUND-RAISING HUNTS

106. Golden Opportunity Fund-raising Tag

a. Season: Golden Opportunity tags shall be valid beginning on the second Saturday in July and extend through December 31.
b. Bag and Possession Limit: One buck, forked horn (see subsection 351(a), Title 14, CCR) or better, per tag.
c. Number of Tags: 5
d. Special Conditions:
1. The holder of a Golden Opportunity tag may take deer using all methods authorized as described in sections 353 and 354, Title 14, CCR.
2. Fund-raising license tagholders who receive a deer tag pursuant to Section 708(a)(2), Title 14, CCR, shall be allowed to exchange that tag under the provisions of subsection 708(a)(2)(F), Title 14, CCR. Tagholders shall not be entitled to obtain more than two (2) deer tags as described in subsection 708(a)(2), Title 14, CCR.

3. Tagholders shall report to the Regional Patrol Chief at the appropriate Department of Fish and Game Regional Headquarters prior to hunting to inform law enforcement officials of the time and area they intend to hunt.
e. Legal boundary description of the project area:

Golden Opportunity tags shall be valid statewide on lands legally open for deer hunting.

107. Open Zone Fund-raising Tag

a. Season: Open Zone tags shall be valid during the authorized seasons described for the general deer zones, additional deer hunts and area-specific archery hunts in subsections 360(a), (b), (c) and subsections 361(a) and (b), Title 14, CCR.
b. Bag and Possession Limit: One buck, forked horn (see subsection 351(a), Title 14, CCR) or better, per tag.
c. Number of Tags: 5
d. Special Conditions:
1. The holder of an Open Zone tag shall meet any special conditions and take deer using the method of take authorized for the general deer zone, additional deer hunt, or area-specific archery hunt as described in subsections 360(a), (b), (c) and subsections 361(a) and (b), Title 14, CCR.
2. Fund-raising license tagholders who receive a deer tag pursuant to Section 708(a)(2), Title 14, CCR, shall be allowed to exchange that tag under the provisions of Section 708(a)(2)(F), Title 14, CCR. Tagholders shall not be entitled to obtain more than two (2) deer tags as described in subsection 708(a)(2), Title 14, CCR.
3. Tagholders shall report to the Regional Patrol Chief at the appropriate Department of Fish and Game Regional Headquarters prior to hunting to inform law enforcement officials of the time and area they intend to hunt.
e. Legal boundary description of the project area:

Open Zone tags shall be valid in the general deer zones, additional deer hunts, and area-specific archery hunts as described in subsections 360(a), (b), (c) and subsections 361(a) and (b), Title 14, CCR.

108. Cooperative Deer Hunting Area hunts (Section 554, Title 14, CCR).

In 2006, a total of 182 tags were issued through the Section 554 - Cooperative Deer Hunting Area Program.

a. Season: Section 554 - Cooperative Deer Hunting Area seasons correspond to the general season for the X zone in which they are issued.
b. Bag and Possession Limit: One buck, forked horn (see subsection 351(a), Title 14, CCR) or better per tag.
c. Number of Tags: Buck Tags: 0-1,000
d. Special Conditions:
1. Section 554 - Cooperative Deer Hunting Area may consist of private land under the control of one or more owners, at least 640 acres in size, within, or adjacent to 5,000

acres of critical deer habitat in deer quota zones (see Section 360) which require public drawing for the distribution of deer tags (see Section 708).
2. Applicants for Section 554 - Cooperative Deer Hunting Area permits shall be the owner of said land.
3. No individual may submit more than one Section 554 - Cooperative Deer Hunting Area application or deer tag application per deer season, nor may there be more than two cooperative deer hunting area applicants for a given parcel of land.
4. To obtain a Section 554 - Cooperative Deer Hunting Area deer tag, applicants must submit a 2007 First Deer Tag Application for exchange with their area application.
5. Deer tags issued pursuant to a Section 554 - Cooperative Deer Hunting Area permit are valid only during the season for the deer zone specified and may only be used on private lands specified in the landowner's application.
e. Legal boundary description of the project area:

Private lands, properly posted, as identified within the approved Section 554 - Cooperative Deer Hunting Area application.

109. Private Lands Wildlife Habitat Enhancement and Management (PLM) Area Program hunts (Section 601, Title 14, CCR).

In 2006, 90 PLMs encompassing 895,640 acres statewide were licensed in the program. Seventy-five of these areas included deer hunting as part of their management program.

a. Season: PLM seasons vary depending upon the location of the area, the number of deer to be harvested, and the length of time the area has been in the program (no variation from the general season for the zone in which the PLM is located is permitted during a PLM's initial year).
b. Bag and Possession Limit: One buck, forked horn (see subsection 351(a), Title 14, CCR) or better, or one antlerless deer (see subsection 351(b), Title 14, CCR) per tag. Buck, antlerless, and either-sex deer tags are options for PLM areas.
c. Number of Tags: Buck Tags: 100-1,200
Antlerless Tags: 100-1,200
Either-Sex Tags: 100-1,200
d. Special Conditions:
1. In order to purchase a PLM tag, hunters must exchange a valid 2007 California deer tag application, or a valid, unfilled 2007 California deer tag with the PLM area they wish to hunt.
2. No person shall take more than one buck deer in the X zones, as defined in subsection 360(b).
e. Legal boundary description of the project areas:

Private lands, properly posted, as identified within the individual PLM management plans.

Policy Considerations

The Legislature formulates laws and policies regulating the management of fish and wildlife in California. The general wildlife conservation policy of the State is to encourage the conservation and maintenance of wildlife resources under the jurisdiction and influence of the State (Section 1801, Fish and Game Code). The policy includes several objectives, as follows:

1. To provide for the beneficial use and enjoyment of wildlife by all citizens of the State;
2. To perpetuate all species of wildlife for their intrinsic and ecological values, as well as for their direct benefits to man;
3. To provide for aesthetic, educational, and non-appropriative uses of the various wildlife species;
4. To maintain diversified recreational uses of wildlife, including hunting, as proper uses of certain designated species of wildlife, subject to regulations consistent with the maintenance of healthy, viable wildlife resources, the public safety, and a quality outdoor experience;
5. To provide for economic contributions to the citizens of the State through the recognition that wildlife is a renewable resource of the land by which economic return can accrue to the citizens of the State, individually and collectively, through regulated management. Such management shall be consistent with the maintenance of healthy and thriving wildlife resources and the public ownership status of the wildlife resource;
6. To alleviate economic losses or public health and safety problems caused by wildlife; and
7. To maintain sufficient populations of all species of wildlife and the habitat necessary to achieve the above-stated objectives.

The Legislature has delegated authority to regulate the take and possession of wildlife to the commission, whose members are appointed by the Governor. With respect to deer, the Legislature has established the State's policy regarding hunting in Sections 450 - 460 of the Fish and Game Code, which provides that the department shall recommend to the commission those deer herd units to be placed under a general deer hunting season; include the number, if any, of antlerless deer that should be taken in deer herd units; and recommend the establishment of any hunter-restricted quota units, if needed. Additionally, Section 4334 of the Fish and Game Code specifies that the Department shall authorize not more than 10 deer tags for the purpose of raising funds for programs and projects to benefit deer. These fund-raising tags are not subject to the fees prescribed by Section 4332. All funds derived from the sale of these tags are appropriated to the department to be used for the Deer Herd Management Plan Implementation Program.

Potential for Significant Effects

Table 2 describes the modifications from the 2006 deer hunting regulations the Department is proposing to incorporate in the 2007 deer hunting regulations. One (1) new hunt and modifications to three (3) existing hunts are proposed. Modifications from the 2006 deer hunting season consist of 175 additional tags and an additional twenty-three hunt days.

Table 2 – Current Regulations and Proposed Modifications

Zone/Hunt	Current 2006 Tag Quota	Current 2006 Season	Proposed 2007 Tag Quota	Proposed 2007 Season	Proposed Change In Tag Quota	Proposed Change In Season Length
G-8 (Fort Hunter Liggett Antlerless Deer Hunt)	**10 Military 10 Public**	**Two Weekends and 1 Holiday (5 Hunt Days)**	**10 Military 10 Public**	**Five Consecutive Hunt Days**	**No Change**	**No Change**
G-10 (Camp Pendleton Either-sex Deer Hunt)	**300 Military Only**	**Weekends & holidays beginning 3rd Saturday in Sept. through Thanksgiving Day weekend**	**400 Military Only**	**Weekends & holidays beginning 1st Saturday in Sept through 1st weekend in Dec**	**100 Tag Increase**	**Seven (7) Additional Hunt Days (Three Additional Weekends, Holidays)**
J-10 (Fort Hunter Liggett Either-Sex Deer Hunt)	**10 Military 50 Public**	**Two Weekends and 1 Holiday (5 Hunt Days)**	**10 Military 75 Public**	**Two weekends, 1 Holiday & Thurs/Fri preceding weekend #1 (7 Hunt Days)**	**25 Public Tag Increase**	**Two (2) Additional Hunt Days**
A-33 (Fort Hunter Liggett Late Season Archery Either-Sex Deer Hunt	**N/A (New Hunt Proposal)**	**N/A**	**25 Military 25 Public**	**Weekends & Holidays beginning 1st Sat. in Oct. through Veteran's Day Holiday**	**25 Military, 25 Public Tag Increase**	**Fourteen (14) Additional Hunt Days**

Table 3 describes the impacts these modifications will have on the twenty-one (21) factors examined in each of the prior sixteen (16) environmental documents (1989 through 2004 – Department files) certified by the Fish and Game Commission regarding deer hunting. The modifications proposed are to increase hunter opportunity on the military installations specified, and the tag quota's and season (timing and length) have been established to have no effect on the State's deer population.

Table 3 – Impacts of Proposed Regulation Modification

EFFECTS	FACTORS ANALYZED	NEW OR MODIFIED DEER HUNTS			
		G-8 (Fort Hunter Liggett Antlerless Deer Hunt)	G-10 (Camp Pendleton Either-Sex Deer Hunt)	J-10 (Fort Hunter Liggett Antlerless Deer Hunt)	A-33 (Fort Hunter Liggett Late Season Archery Either-Sex Deer Hunt)
EFFECTS OF	Hunting on Individual Deer Herds or Groups of Herds	Not Significant	Not Significant	Not Significant	Not Significant
	Hunting on Condition and Sex Ratios of Deer	Not Significant	Not Significant	Not Significant	Not Significant
	Hunting on Genetics of California Deer	Not Significant	Not Significant	Not Significant	Not Significant
	Hunting on Social Structure of California Deer	Not Significant	Not Significant	Not Significant	Not Significant
	Hunting on Natural Mortality	Not Significant	Not Significant	Not Significant	Not Significant
	Off-Highway Vehicles and other Human Disturbance	Not Significant	Not Significant	Not Significant	Not Significant
	The use of Dogs	Not Significant	Not Significant	Not Significant	Not Significant
	Cooperative Deer Hunt Area Program (Section 554)	Not Significant	Not Significant	Not Significant	Not Significant
	Private Lands Wildlife Habitat Enhancement and Management Area Program (PLM; Section 601)	Not Significant	Not Significant	Not Significant	Not Significant
	Depredation Take	Not Significant	Not Significant	Not Significant	Not Significant
	Changes in Hunting Regulations by Adjoining States	Not Significant	Not Significant	Not Significant	Not Significant
	Cumulative Impacts	Not Significant	Not Significant	Not Significant	Not Significant
EFFECTS ON	Predators and Scavengers	Not Significant	Not Significant	Not Significant	Not Significant
	Listed Species	Not Significant	Not Significant	Not Significant	Not Significant
	Other Recreational Opportunities	Not Significant	Not Significant	Not Significant	Not Significant
	Economics	Not Significant	Not Significant	Not Significant	Not Significant
	Public Safety	Not Significant	Not Significant	Not Significant	Not Significant
	Welfare of the Individual Animal	Not Significant	Not Significant	Not Significant	Not Significant
CUMULATIVE IMPACTS	Growth Inducing Impacts of Proposed Action	Not Significant	Not Significant	Not Significant	Not Significant
	Short-term uses and Long-term Productivity	Not Significant	Not Significant	Not Significant	Not Significant
	Significant Irreversible Environmental Changes	Not Significant	Not Significant	Not Significant	Not Significant

Sport hunting is a controversial issue. A segment of the public has contended that the loss of a single animal by hunting is a significant impact by virtue of the mortality of the individual. Because the activity of hunting deer will result in the death of individual animals, specific safeguards are included in the proposed action. These safeguards include limited quotas, specified seasons, bag and possession limits, authorized lethal methods, and herd monitoring, which should result in removing deer at a level that is consistent with individual herd performance. Therefore, the proposed actions have been designed to avoid significant adverse effects on the environment.

The removal of individual animals through hunting, together with other natural mortality, from any of the deer herds, should not significantly reduce herd size over the annual cycle. The proposed action is expected to result in maintaining the herd ratio objectives around the approved management plan objectives. The production and survival of young animals within each herd should replace the animals removed by hunting. Therefore, the proposed action of harvesting deer by hunting should not have a significant adverse impact on either local populations or the statewide population of deer beyond the annual cycle.

CHAPTER 3 - ALTERNATIVES

No Project

Other than annual tag quota modifications proposed in response to herd productivity, implementation of the No Project alternative would result in no change from the 2006 deer hunting regulations described in the “Existing Condition” section of Chapter 2.

Alternative 2 - High Kill

Alternative 2 represents management options (elements) within a particular hunt zone that will achieve a high kill (HK) from the herd(s). HK refers to a harvest strategy that maximizes the number of animals that can be harvested from a population, commensurate with the goals and objectives stated in the herd plans, for at least the next year. A potential problem with a HK management strategy is the risk of overharvesting. If, under a HK program, an overharvest occurred, more conservative management strategies would have to be implemented the following year to correct the situation.

Appendix 2 contains specific zone and hunt HK alternatives; Appendix 3 contains results of the population modeling analysis for the HK alternative.

Alternative 3 - Low Kill

Alternative 3 represents management options (elements) within a particular hunt zone that will produce a relatively small harvest. This low kill (LK) is a harvest strategy that provides hunting opportunities at reduced levels from those proposed under either HK or desired kill (DK) strategies.

Appendix 2 contains specific zone and hunt LK alternatives; Appendix 3 contains results of the population modeling analysis for the LK alternative.

CHAPTER 4 – RESPONSES TO COMMENTS REGARDING THE PROPOSED PROJECT

In accordance with CEQA, public input and agency consultation were encouraged during the environmental review process. A Notice of Preparation was provided to the State Clearinghouse, land management agencies having a key role in deer management, and all individuals and organizations which expressed an interest in deer management. No comments were received as a result of the Notice of Preparation circulation.

The Department prepared a draft environmental document (DED) regarding deer hunting (sections 360, 361, 554, and 601, Title 14, CCR). The DED was made available for public review on February 3, 2007. It was mailed to 57 libraries as well as 20 individuals and organizations who expressed interest in this issue. Additionally, notice of availability of the DED for public review was provided to the State Clearinghouse, which provided notice of availability to interested organizations, including all county governments in California. The DED was also made available on the Department's website, and in the Department's regional and satellite offices. During the 45-day notice period the draft environmental document was available for public review and one e-mail comment was received regarding the document.

The draft environmental document examined a variety of alternatives. The proposed project was recommended by the Department because it provided the public with the widest range of recreational opportunities related to deer populations, either statewide or locally. Every effort was made to avoid a biased analysis of issues. In general, the Department attempted to make the draft environmental document understandable to the public and to objectively summarize a large amount of technical information.

The following is the comment and the Department's response.

<u>Comment from Mr. David J. Valle</u>

Comment: "Double the proposed tag range allocation for Hunt J16 from 10-75 tags to 20-150 tags in Alternative 1. And if spring census data for this zone is supportive, increase the tag allocation to the upper portion of this new range (100-150 tags issued)."

Response: The A, B, and D zone complexes are managed to maximize the hunter's opportunity to go hunting without any overall impact to the population size. This is accomplished by maintaining high tag quota's and adjusting them accordingly based on an index of hunter success, fall composition counts, and population trends. Population data which indicates an increase in any one year is not a trend and must be analyzed in conjunction with the other factors identified to justify any tag increases in these zones.

The harvest buffer is established to account for unpredictable mortality factors such as favorable hunting weather (early weather causes deer to be more susceptible to hunting loss) disease, accidental death (including road kill), and wounding/crippling loss. Although the harvest buffer on occasion may be utilized to account for higher than predicted mortality (due to hunting and/or the other factors identified above) it should not be relied upon for permanent increases in tag quotas. Reducing the harvest buffer increases the chances for over-shooting the population.

The Department agrees it is important to provide junior hunting opportunity. Juniors are currently able to receive tags to hunt the general season in all of these zones in addition to J16. Increasing the number of tags available for this hunt would cause decreases in bucks available to other general season hunters in opposition to the management strategy for this zone. The Department appreciates the Plumas Fish and Game Commissioners assurances that any approval necessary from the Plumas County Board of Supervisors will be received. However, since this is an either-sex hunt increasing the number of tags available to the level suggested will likely result in an increase in bucks taken that may lead to a reduction in general hunter opportunity.

E-MAIL RECEIVED FROM DAVID VALLE

From: David Valle
To: <wildlifestrategy@dfg.ca.gov>
Date: 3/6/2007 10:59:06 PM
Subject: Public Comment on Proposed Envir Doc for Deer Hunting

Date: March 6, 2007

To: California Department of Fish and Game, Wildlife Branch
California Department of Fish and Game Commission

The following are my comments on the proposed Environmental Document for California Deer Hunting (Feb 3 2007):

1. Double the proposed tag range allocation for Hunt J16 from 10 - 75 tags to 20 - 150 tags in Alternative 1. And if spring census data for this zone is supportive, increase the tag allocation to the upper portion of this new range (100 - 150 tags issued).

Justification/Comments:

a. Preseason population estimates (See Appendix 4-1) for 2007 are up by ~300 animals. Using the kill percentage from 2006 for J16 hunters of ~ 19% as a guide (Appendix 5), doubling the take will have an insignificant impact on the herd population, but offer a significant (100% opportunity improvement) increase in the participation of Junior Hunters in this zone.

b. Referring to Appendix 3-12, there is a substantial Buffer Population of does and bucks to support an increased tag allocation.

c. If approval of the county board of supervisors is required to increase tag allocation, I am confident as a member of the Plumas County Fish and Game Commission that such approval will be granted in Plumas County.

Please seriously consider my request to increase the tag allocation for Hunt J16. The more opportunity we offer the youth hunters, the more likely they will develop an affinity for wildlife and become the stewards that we desperately need for California wildlife.

Please confirm your receipt of my comments.

Respectfully,

David J. Valle
Portola High School Teacher
Plumas County Fish & Game Commissioner
Portola, CA 96122

APPENDIX 1

REGULATORY LANGUAGE FOR PROPOSED PROJECT

Appendix 1 contains the proposed project regulatory language for Sections 360 and 361, Title 14, California Code of Regulations. Recommended changes are provided in strikeout/underline format and highlighted.

§ 360. Deer.

Except as otherwise provided in this Title 14, deer may be taken only as follows:

(a) A, B, C, and D Zone Hunts.

(1) Zone A.

(A) Area: Shall include all of Zone A-South Unit 110 and Zone A-North Unit 160 (see subsections 360(a)(1)(A)1. through 2.).

1. South Unit 110. In those portions of Alameda, Contra Costa, Fresno, Kern, Kings, Los Angeles, Monterey, San Benito, San Joaquin, San Luis Obispo, San Mateo, Santa Barbara, Santa Clara, Santa Cruz, Stanislaus and Ventura counties within a line beginning at the intersection of Highway 99 and the San Joaquin-Sacramento county line at Dry Creek; south on Highway 99 to Highway 166 in Kern County; west on Highway 166 to Highway 33; south on Highway 33 to Sespe Creek; east and south along Sespe Creek to Highway 126; east on Highway 126 to Interstate 5; south on Interstate 5 and 405 to Interstate 10; west on Interstate 10 to the Pacific Ocean; north on the Pacific Ocean coastline to the San Mateo-San Francisco county line; east on the San Mateo-San Francisco county line to the Alameda county line; north on the Alameda-San Francisco county line to the Contra Costa-San Francisco county line; northwest on Contra Costa-San Francisco county line to the Contra Costa-Marin county line; northeast on the Contra Costa-Marin county line to the Contra Costa-Solano county line in San Pablo Bay; east on the Contra Costa-Solano county line and the Sacramento River to the confluence of the San Joaquin River and Sacramento-Contra Costa county line; east on the Sacramento-Contra Costa county line and San Joaquin River to the confluence of the Mokelumne River and San Joaquin-Sacramento county line; northeast on the San Joaquin-Sacramento county line and Mokelumne River to the confluence of Dry Creek; east on the San Joaquin-Sacramento county line and Dry Creek to the point of beginning at Highway 99.

2. North Unit 160. In those portions of Colusa, Glenn, Lake, Marin, Mendocino, Napa, Sacramento, Solano, Sonoma and Yolo within a line beginning at the junction of the mouth of Hardy Creek (Mendocino County) and the Pacific Ocean; east along Hardy Creek to Highway 1; north along Highway 1 to Highway 101; south along Highway 101 to Commercial Avenue in the town of Willits; east on Commercial Avenue to the Hearst-Willits Road (County Road 306); north and east on the Hearst-Willits Road to the Main Eel River; southeast on the Main Eel River to Lake Pillsbury at Scott Dam; southeast along the west shore of Lake Pillsbury and the Rice Fork of the Eel River to Forest Service Road M-10; east on Forest Service Road M-10 to Forest Service Road 17N16; east on Forest Service Road 17N16 to Forest Service Road M-10; east on Forest Service Road M-10 to Letts Valley-Fouts Spring Road; east on the Letts Valley-Fouts Spring Road to the Elk Creek-Stonyford Road (County Road 306); north on the Elk Creek-Stonyford Road to the Glenn-Colusa county line; east along the Glenn-Colusa County line to Interstate 5; Interstate 5 south to Highway 99 in the City of Sacramento; Highway 99 south to the Sacramento/San Joaquin County line at Dry Creek, west along the Sacramento/San Joaquin County line and Dry Creek to the confluence with the Mokelumne River, southwest on the Sacramento/San Joaquin County line and Mokelumne River to the confluence with the San Joaquin River and Sacramento/Contra Costa County line, west on the Sacramento/Contra Costa County line and San Joaquin River to the confluence of the Sacramento River and Solano/Contra Costa County line, west on the Sacramento River and Solano/Contra Costa County line to the Marin County line in San Pablo Bay, southwest on the Marin/Contra Costa and Marin/San Francisco county lines to the North Peninsula shoreline near the Golden Gate Bridge, west on the shoreline to the Pacific Ocean coastline, northwest on the Pacific Ocean coastline to the point of beginning.

(B) Season: The season in Zone A-South Unit 110 and Zone A-North Unit 160 shall open on the second Saturday in August and extend for 44 consecutive days.

(C) Bag and Possession Limit: One buck, forked horn (see subsection 351(a)) or better, per tag.

(D) Number of Tags: ~~65,000~~30,000-65,000. Zone A tags are valid in Zone A-South Unit 110 and Zone A-North Unit 160.

(2) Zone B.

(A) Area: Shall include all of Zones B-1, B-2, B-3, B-4, B-5 and B-6 (see subsections 360(a)(2)(A) 1-6).

1. Zone B-1.

In the County of Del Norte and those portions of Glenn, Humboldt, Lake, Mendocino, Siskiyou and Trinity counties within a line: Beginning at the California-Oregon state line and the Pacific Ocean; east along the state line to the point where Cook-Green Pass Road (Forest Service Road 48N20) intersects the California-Oregon state line; south on the Cook-Green Pass Road to Highway 96 near Seiad Valley; west and south along Highway 96 to Highway 299 at Willow Creek; southeast along Highway 299 to the South Fork of the Trinity River; southeast along the South Fork of the Trinity River to the boundary of the Yolla Bolly-Middle Eel Wilderness Area; southwest along the boundary of the Yolla Bolly-Middle Eel Wilderness Area to the Four Corners Rock-Washington Rock Trail; south and east on the Four Corners Rock-Washington Rock Trail to the North Fork of Middle Fork Eel River; south on the North Fork of Middle Fork Eel River to Middle Fork Eel River; east on Middle Fork Eel River to confluence with Balm of Gilead Creek; north and east on Balm of Gilead Creek to confluence with Minnie Creek; east and south on Minnie Creek to Soldier Ridge Trail; north on Soldier Ridge Trail to Summit Trail; south on Summit Trail to Green Springs Trail head at Pacific Crest Road (U.S. Forest Service Road M-2); south on the Mendocino Pass Road to the intersection of Forest Highway 7; west on Forest Highway 7 to the Middle Fork of the Eel River near Eel River Work Center; southwest on the Middle Fork of the Eel River to the Black Butte River; Black Butte River to the Glenn-Mendocino county line; south along the Glenn-Mendocino and Lake-Mendocino county lines to the northern boundary of State Game Refuge 2-A; east and south along the northern and eastern boundaries of State Game Refuge 2-A to the Glenn-Lake near Sheetiron Mountain; south along the Glenn-Lake and Colusa-Lake county lines to Forest Service Road 17N16; west on Forest Service Road 17N16 to Forest Service Road M-10; west on Forest Service Road M-10 to the Rice Fork of the Eel River; northwest along the Rice Fork of the Eel River and the shore of Lake Pillsbury to the Main Eel River at Scott Dam; west and north along the Main Eel River to the Hearst-Willits Road; southwest on the Hearst-Willits Road to Commercial Avenue; west on Commercial Avenue to Highway 101; north on Highway 101 to Highway 1 at Leggett; west on Highway 1 to its intersection with the South Fork of the Eel River; north and west along the South Fork of the Eel River to the main Eel River; west and north along the main Eel River to mouth of the Eel River and north along the Pacific coastline to the point of beginning.

2. Zone B-2.

In those portions of Humboldt, Shasta, Siskiyou, Tehama, and Trinity counties within a line beginning at the intersection of Interstate 5 and Highway 299 in Redding; west on Highway 299 to the Bully Choop Mountain Road at the Shasta-Trinity county line and Buckhorn Summit; south on the Bully Choop Mountain Road to a point where this road leaves the Shasta-Trinity county line at Mud Springs; southwest along the Shasta-Trinity county line to the Browns Creek-Harrison Gulch Road; south on the Browns Creek-Harrison Gulch Road to Highway 36; east on Highway 36 (200 yards) to Forest Service Arterial Road 41; south on Forest Service Arterial Road 41 to Stuart Gap at the Tehama-Trinity county line; south on the Tehama-Trinity county line to the north boundary of the Yolla Bolly-Middle Eel Wilderness Area; west and south on the Yolla Bolly-Middle Eel Wilderness boundary to the South Fork of the Trinity River; north and west along the South Fork of the Trinity River to Highway 299; west and north on Highway 299 to Highway 96 at Willow Creek; north on Highway 96 to the Cecilville-Salmon River Road (Forest Service Road 93) at Somes Bar; east along the Cecilville-Salmon River Road to Highway 3 at Callahan; east along Highway 3 to the Gazelle-Callahan Road (Forest Service Road 1219); east along the Gazelle-Callahan Road to Highway 99; north along Highway 99 to Louie Road; east along Louie Road to Interstate 5; south along Interstate 5 to the point of beginning.

3. Zone B-3.

In those portions of Colusa, Glenn, Lake, Mendocino, and Tehama counties within a line beginning at the intersection of Interstate 5 and Black Butte Reservoir Road; south on Interstate 5 to the Glenn-Colusa county line; west along the Glenn-Colusa county line to the Elk Creek-Stonyford Road (County Road 306); south on the Elk Creek-Stonyford Road to the Letts Valley-Fouts Spring Road; west on the Letts Valley-Fouts Spring Road through Fouts Spring to Forest Service Road M-10; west on Forest Service Road M-10 to the Colusa-Lake county line; north along the Colusa-Lake and Glenn-Lake county lines to the eastern boundary of State Game Refuge 2-A, near Sheetiron Mountain; north and west along the eastern and northern boundaries of State Game Refuge 2-A to the Lake-Mendocino county line; north on the Lake-Mendocino and Glenn-Mendocino county lines to the Black Butte River; northwest along the Black Butte River to the Middle Fork of the Eel River; east and north along the Middle Fork of the Eel River to Forest Highway 7 near the Eel River Work Center; east on Forest Highway 7 to the Low Gap-Government Flat Road; north on the Low Gap-Government Flat Road to the Round Valley-Paskenta

Road at Government Flat; east on the Round Valley-Paskenta Road to the Black Butte Lake-Newville Road; south and east on the Black Butte Lake-Newville Road to Interstate 5 at the point of beginning.

4. Zone B-4.

In those portions of Mendocino and Humboldt counties within a line beginning at the mouth of Hardy Creek and the Pacific Ocean; north along the Pacific coastline to the mouth of the Eel River; east and south along the main Eel River to the South Fork of the Eel River; south along the South Fork of the Eel River to state Highway 1 at Leggett; west on state Highway 1 to Hardy Creek; west along Hardy Creek to the point of beginning.

5. Zone B-5.

In those portions of Glenn, Mendocino, Shasta, Tehama and Trinity counties within a line beginning at the intersection of Highway 299 and Interstate 5 in Redding; south along Interstate 5 to the Black Butte Lake- Newville Road near Orland; west and north on the Black Butte Lake-Newville Road to the Round Valley-Paskenta Road; west on the Round Valley-Paskenta Road to the Pacific Crest Road (U.S. Forest Service Road M-2) near Government Flat; north on the Pacific Crest Road to the Summit Trailhead at Green Springs; north along Summit Trail to Soldier Ridge Trail; south and west along Soldier Ridge Trail to Minnie Creek; north and west on Minnie Creek to Balm of Gilead Creek; west on Balm of Gilead Creek to the Middle Fork of the Eel River; west on the Middle Fork of the Eel River to the North Fork of the Middle Fork of the Eel River; north on the North Fork of the Middle Fork of the Eel River to the Four Corners Rock-Washington Rock Trail; north and west on the Four Corners Rock-Washington Rock Trail to the boundary of the Yolla Bolly-Middle Eel Wilderness Area; north along the boundary of the Yolla Bolly-Middle Eel Wilderness Area to the Tehama-Trinity county line; north on the Tehama-Trinity county line to Forest Service Arterial Road 41 at Stuart Gap; north on Forest Service Arterial Road 41 to Highway 36; west on Highway 36 (200 yards) to the Browns Creek-Harrison Gulch Road; north on the Browns Creek-Harrison Gulch Road to the Shasta-Trinity county line; northeast along the Shasta-Trinity county line to Mud Springs, where the Bully Choop Mountain Road joins the Shasta-Trinity county line; north on the Bully Choop Mountain Road to Highway 299 at Buckhorn Summit and the Shasta-Trinity county line; east on HIghway 299 to Interstate 5 in Redding.

6. Zone B-6.

In that portion of Siskiyou County within a line beginning at the California-Oregon state line and its intersection with Interstate 5; south on Interstate 5 to Louie Road near Gazelle; west on Louie Road to Highway 99; south on Highway 99 to the Gazelle-Callahan Road at Gazelle; west on the Gazelle-Callahan Road to Highway 3; west on Highway 3 to the Cecilville-Salmon River Road (Forest Service Road 93) at Callahan; west on the Cecilville-Salmon River Road to Highway 96 at Somes Bar; north on Highway 96 to the Cook-Green Pass Road at Seiad Valley; north on the Cook-Green Pass Road to the California-Oregon state line; east along the California-Oregon state line to Interstate 5.

(B) Season: The seasons for the B Zone shall be those specified for the areas described as B-1, B-2, B-3, B-4, B-5 and B-6 (see subsections 360(a)(2)(B)1-6).

1. Zone B-1.

The season in Zone B-1 shall open on the third Saturday in September and extend for 37 consecutive days.

2. Zone B-2.

The season in Zone B-2 shall open on the third Saturday in September and extend for 37 consecutive days.

3. Zone B-3.

The season in Zone B-3 shall open on the third Saturday in September and extend for 37 consecutive days.

4. Zone B-4.

The season in Zone B-4 shall open on the fourth Saturday in August and extend for 37 consecutive days.

5. Zone B-5.

The season in Zone B-5 shall open on the third Saturday in September and extend for 37 consecutive days.

6. Zone B-6.

The season in Zone B-6 shall open on the third Saturday in September and extend for 30 consecutive days.

(C) Bag and Possession Limit: One buck, forked horn (see subsection 351(a)) or better, per tag.

(D) Number of Tags: ~~55,500~~35,000-65,000. Zone B tags are valid in Zones B-1, B-2, B-3, B-4, B-5 and B-6

(3) Zone C.

(A) Area: Shall include all of Zones C-1, C-2, C-3, and C-4 (see subsections 360(a)(3)(A)1. through 4.).

1. Zone C-1.

In that portion of Siskiyou County within a line beginning at the California-Oregon state line and its intersection with Interstate 5; south on Interstate 5 to Highway 97 at Weed; north and east on Highway 97 to the intersection with the California-Oregon state line; west on the California-Oregon state line to the point of beginning.

2. Zone C-2.

In those portions of Shasta and Siskiyou counties within a line beginning at the junction of Interstate 5 and Highway 89 south of the town of Mt. Shasta; east and south on Highway 89 to the Pit River at Lake Britton; west and south along the Pit River to Interstate 5 at Shasta Lake; north on Interstate 5 to the point of beginning.

3. Zone C-3.

In that portion of Shasta County within a line beginning at the intersection of Cottonwood Creek and Interstate 5 at Cottonwood; north on Interstate 5 to the Pit River at Shasta Lake; east and north on the Pit River to Highway 89 at Lake Britton; south on Highway 89 to Highway 44 at Old Station; south and west on Highway 44 to the North Fork of Battle Creek; southwest on the North Fork of Battle Creek to Battle Creek; west on Battle Creek to the Sacramento River; north on the Sacramento River to the mouth of Cottonwood Creek; west on Cottonwood Creek to the point of beginning.

4. Zone C-4.

In those portions of Butte, Glenn, Lassen, Plumas, Shasta, and Tehama counties within a line beginning at the junction of Interstate 5 and Cottonwood Creek at Cottonwood; east on Cottonwood Creek to the Sacramento River; south on the Sacramento River to Battle Creek; east on Battle Creek to the North Fork of Battle Creek; northeast on the North Fork of Battle Creek to Highway 44; east on Highway 44 to Highway 89 at the north entrance of Lassen Volcanic National Park; north and east on Highway 89 and 44 to the junction of Highway 44 at Old Station; south and east on Highway 44 to Highway 36 west of Susanville; west on Highway 36 to Highway 147 near Westwood; south on Highway 147 to Highway 89; south on Highway 89 to Highway 70; southwest on Highway 70 to Highway 162 at Oroville; west on Highway 162 to Interstate 5; north on Interstate 5 to Cottonwood Creek to the point of beginning.

(B) Season: The seasons for the C Zone shall be those specified for the areas described as C-1, C-2, C-3, and C-4 (see subsections 360(a)(3)(B)1. through 4.).

1. Zone C-1.

The season in Zone C-1 shall open on the third Saturday in September and extend for 30 consecutive days.

2. Zone C-2.

The season in Zone C-2 shall open on the third Saturday in September and extend for 37 consecutive days.

3. Zone C-3.

The season in Zone C-3 shall open on the third Saturday in September and extend for 37 consecutive days.

4. Zone C-4.

The season in Zone C-4 shall open on the third Saturday in September and extend for 16 consecutive days.

(C) Bag and Possession Limit: One buck, forked horn (see subsection 351(a)) or better, per tag.

(D) Number of Tags: ~~9,025~~5,000-15,000. Zone C tags are valid in Zones C-1, C-2, C-3, and C-4during the general season only as described above in subsections 360(a)(3)(B)1. through 4.

(4) Zone D-3-5.

(A) Area: Shall include all of zones D-3, D-4, and D-5 (see subsections 360(a)(4)(A)1. through 3.).

1. Zone D-3.

In those portions of Butte, Colusa, Glenn, Nevada, Placer, Plumas, Sierra, Sutter and Yuba counties within a line beginning at the junction of Interstate 5 and Highway 162 at Willows; east on Highway 162 to Highway 70 at Oroville; northeast on Highway 70 to Highway 89; south on Highway 89 to

the new Gold Lake Road (near Graeagle); south on the new Gold Lake Road to Highway 49 at Bassetts; east on Highway 49 to Yuba Pass; south on the Yuba Pass-Webber Lake Road (main haul road) through Bonta Saddle to the Jackson Meadows Highway (Fiberboard Road); west on the Jackson Meadows Highway for two miles to the White Rock Lake Road; south on the White Rock Lake Road to the new road to White Rock Lake (below Bear Valley); south and east on the new White Rock Lake Road to the Pacific Crest Trail (one mile west of White Rock Lake in section 21, T18N, R14E, M.D.B.M.); south and east on the Pacific Crest Trail to Interstate 80 near the Castle Peak-Boreal Ridge Summit; west on Interstate 80 to Highway 20; west on Highway 20 to the Bear River in Bear Valley; west along the Bear River to Highway 65 near Wheatland; north on Highway 65 to Highway 70; north on Highway 70 to Highway 20 in Marysville; west on Highway 20 to Interstate 5 at Williams; north on Interstate 5 to the point of beginning.

2. Zone D-4.

In those portions of Colusa, Nevada, Placer, Sacramento, Sutter, Yolo and Yuba counties within a line beginning at the junction of Interstate 5 and Highway 20 at Williams; east on Highway 20 to Highway 70 in Marysville; south on Highway 70 to Highway 65; south on Highway 65 to the Bear River (south of Wheatland); east along the Bear River to Highway 20; east on Highway 20 to Interstate 80; east on Interstate 80 to the Pacific Crest Trail near the Castle Peak-Boreal Ridge Summit; south on the Pacific Crest Trail toForest Route 03 at Barker Pass; east and north along Forest Route 03 to Blackwood Canyon Road; east along Blackwood Canyon Road to Highway 89 at Lake Tahoe near Idlewild; south on Highway 89 to Blackwood Creek; east on Blackwood Creek to the Lake Tahoe shoreline; south along the shore of Lake Tahoe to the mouth of Miller Creek and the common boundary between the Eldorado and Tahoe National Forests; west along Miller Creek to the Rubicon River; west along the Rubicon River through Hell Hole Reservoir to the Middle Fork of the American River; west along the Middle Fork of the American River to the American River; west along the American River to Interstate 5; north on Interstate 5 to the point of beginning.

3. Zone D-5.

In the counties of Amador and Calaveras and those portions of Alpine, El Dorado, Placer, Sacramento, San Joaquin, Stanislaus and Tuolumne counties within a line beginning at the junction of Interstate 5 and the American River in Sacramento; east along the American River to the Middle Fork of the American River; northeast along the Middle Fork of the American River to the Rubicon River; east along the Rubicon River through Hell Hole Reservoir to its confluence with Miller Creek; east along Miller Creek to its junction with the new (marked) USFS Pacific Crest Trail; north on the Pacific Crest Trail one-quarter mile to a junction with the McKinney-Rubicon Springs Road (Miller Lake Road); east along the McKinney-Rubicon Springs Road to McKinney Creek (NE 1/4, section 23, T14N, R16E, M.D.B.M.); east along McKinney Creek to the west shoreline of Lake Tahoe near Chambers Lodge; south along the shore of Lake Tahoe to the California-Nevada state line; southeast along the California-Nevada state line to Highway 50; southwest on Highway 50 to the Pacific Crest Trail at Echo Summit; south along the Pacific Crest Trail to the township line between Townships 7 and 8 North near Wolf Creek Pass; due west on that township line to the road connecting Lower and Upper Highland Lakes at Lower Highland Lake; west along that road to Highland Creek; southwest along Highland Creek to the North Fork of the Stanislaus River; west along the North Fork of the Stanislaus River to the Stanislaus River; west along the Stanislaus River to Highway 99; north along Highway 99 to Interstate 80; west on Interstate 80 to Interstate 5; north on Interstate 5 to the point of beginning.

(B) Season: The season for zones for D-3 through D-5 shall open on the fourth Saturday in September and extend for 37 consecutive days.

(C) Bag and Possession Limit: One buck, forked horn (See subsection 351(a)) or better, per tag.

(D) Number of Tags: ~~33,000~~30,000-40,000. The Zone D-3-5 tag is valid in zones D-3, D-4, and D-5.

(5) Zone D-6.

(A) Area: In those portions of Alpine, Madera, Mariposa, Merced, Stanislaus and Tuolumne counties within a line beginning at the intersection of Highway 99 and the Stanislaus River at Ripon; east along the Stanislaus River and following the North Fork of the Stanislaus River to Highland Creek; east up Highland Creek to the road connecting Lower and Upper Highland Lakes at Upper Highland Lake; east along that road to the township line between Townships 7 and 8 North; east on that township line to the Sierra crest near Wolf Creek Pass; south along the Sierra crest to the Yosemite National Park boundary near Rodger Peak; along the eastern Yosemite National Park boundary to Highway 41; south along Highway 41 to the Madera-Mariposa county line south of Westfall Station; along the Madera-

Mariposa and the Madera-Merced county lines to Highway 99; north along Highway 99 to the point of beginning.

(B) Season: The season in Zone D-6 shall open on the third Saturday in September and extend for 44 consecutive days.

(C) Bag and Possession Limit: One buck, forked horn (See subsection 351(a)) or better, per tag.

(D) Number of Tags: ~~10,000~~6,000-16,000.

(6) Zone D-7.

(A) Area: In those portions of Fresno, Madera, Mariposa and Tulare counties within a line beginning at the intersection of Highway 99 and the Madera-Merced county line; northeast along the Madera-Merced and Madera-Mariposa county lines to Highway 41 south of Westfall Station; north along Highway 41 to Yosemite National Park boundary; east along the park boundary to the Mono-Madera county line near Rodger Peak; south along the Inyo National Forest boundary (crest of the Ritter Range) to the junction of the Inyo National Forest boundary and Ashley Creek; east to Ashley Lake; northeast along Ashley Creek to the junction of King Creek; southeast along King Creek to its junction with the middle fork of the San Joaquin River; south and west along the middle fork of the San Joaquin River to the junction of the Inyo National Forest boundary; east along Fish Creek to its confluence with Deer Creek; north and east along Deer Creek to the upper crossing of the Deer Creek trail; north and east along the Deer Creek trail to the Inyo National Forest Boundary (the Sierra Crest); south along the Sierra crest and the Inyo National Forest boundary to Bishop Pass; west along the Dusy Basin Trail to the Middle Fork of the Kings River; southwest and downstream along the Middle Fork of the Kings River to the junction of the Middle Fork and South Fork of the Kings River; southwest along the Kings River through Pine Flat Reservoir, Piedra and Reedley to Highway 99; north along Highway 99 to the point of beginning.

(B) Season: The season in Zone D-7 shall open on the third Saturday in September and extend for 44 consecutive days.

(C) Bag and Possession Limit: One buck, forked horn (See subsection 351(a)) or better, per tag.

(D) Number of Tags: ~~9,000~~4,000-10,000.

(7) Zone D-8.

(A) Area: In those portions of Fresno, Kern and Tulare counties within a line beginning at the intersection of Highway 99 and the Kings River; upstream and northeast along the Kings River through Reedley, Piedra and Pine Flat Reservoir to the junction of the Middle and South Forks of the Kings River; northeast along the Middle Fork Kings River to the Dusy Basin Trail; east along this trail to the Kings Canyon National Park boundary at Bishop Pass; south along the Kings Canyon and Sequoia National Park boundaries to the Main Kern River; southeast along the Main Kern River and the common boundary between the Inyo and Sequoia National Forests to the end of the Chimney Meadow-Blackrock Station Road (Forest Road 21S03) near Blackrock Mountain; southeast along the Chimney Meadow-Blackrock Station Road through Troy Meadows to the South Fork of the Kern River; south along the South Fork of the Kern River to the Doyle Ranch Road; south along the Doyle Ranch Road to Highway 178 in the town of Onyx; southwest along Highway 178 to Highway 99 at Bakersfield; north along Highway 99 to the point of beginning.

(B) Season: The season in Zone D-8 shall open on the fourth Saturday in September and extend for 30 consecutive days.

(C) Bag and Possession Limit: One buck, forked horn (See subsection 351(a)) or better, per tag.

(D) Number of Tags: ~~8,000~~5,000-10,000.

(8) Zone D-9.

(A) Area: In that portion of Kern County within a line beginning at the intersection of Highways 99 and 178; northeast along Highway 178 along Lake Isabella and through Walker Pass to Highway 14; southwest along Highway 14 to Highway 58; northwest along Highway 58 to Highway 99; north along Highway 99 to the point of beginning.

(B) Season: The season in Zone D-9 shall open on the fourth Saturday in September and extend for 30 consecutive days.

(C) Bag and Possession Limit: One buck, forked horn (See subsection 351(a)) or better, per tag.

(D) Number of Tags: ~~2,000~~1,000-2,500.

(9) Zone D-10.

(A) Area: In those portions of Kern and Los Angeles counties within a line beginning at the intersection of Highways 99 and 58; southeast along Highway 58 to Highway 14; south along Highway 14

to Highway 138; west along Highway 138 to Interstate 5; north on Interstate 5 to Highway 99; north on Highway 99 to the point of beginning.

(B) Season: The season in Zone D-10 shall open on the fourth Saturday in September and extend for 30 consecutive days.

(C) Bag and Possession Limit: One buck, forked horn (See subsection 351(a)) or better, per tag.

(D) Number of Tags: ~~700~~400-800.

(10) Zone D-11.

(A) Area: Those portions of Los Angeles and San Bernardino counties, within a line beginning at the intersection of Interstate 5 and Highway 138, south of Gorman; east on Highway 138 to Highway 14; south on Highway 14 to Palmdale and Highway 138; east on Highways 138 and 18 to Interstate 15; south on interstates 15 and 15E to Interstate 10; west on Interstate 10 to Interstate 405; north on Interstates 405 and 5 to the point of beginning.

(B) Season: The season in Zone D-11 shall open on the second Saturday in October and extend for 30 consecutive days.

(C) Bag and Possession Limit: One buck, forked horn (See subsection 351(a)) or better, per tag.

(D) Number of Tags: ~~5,500~~2,500-6,000.

(E) Special Conditions: Hunters that possess a D-11 deer tag may also hunt in zones D-13 and D-15 as described in subsections 360(a)(12)(A), (B) and (C), and subsections 360(a)(14)(A), (B) and (C).

(11) Zone D-12.

(A) Area: Those portions of Imperial, Riverside and San Bernardino counties within a line beginning at Highway 62 and the Twentynine Palms-Amboy Road in Twentynine Palms; east along Highway 62 to Highway 95 at Vidal Junction; north on Highway 95 to Interstate 40; east on Interstate 40 to the California-Arizona state line; south along this state line to the U.S.-Mexican border; west along the U.S.-Mexican border to Highway 111 in Calexico; north on Highway 111 to Interstate 10; north and west on Interstate 10 to Highway 62; north and east on Highway 62 to the point of beginning.

(B) Season: The season in Zone D-12 shall open on the first Saturday in November and extend for 23 consecutive days.

(C) Bag and Possession Limit: One buck, forked horn (See subsection 351(a)) or better, per tag.

(D) Number of Tags: ~~950~~100-1,500.

(12) Zone D-13.

(A) Area: In those portions of Kern, Los Angeles, San Luis Obispo, Santa Barbara, and Ventura counties within a line beginning at the intersection of Highways 99 and 166 at Mettler; south on Highway 99 and Interstate 5 to Highway 126; west on Highway 126 to the crossing of Sespe Creek; north and then west along Sespe Creek to Highway 33; north on Highway 33 to Highway 166; north and east on Highway 166 to the point of beginning.

(B) Season: The season in Zone D-13 shall open on the second Saturday in October and extend for 30 consecutive days.

(C) Bag and Possession Limit: One buck, forked horn (See subsection 351(a)) or better, per tag.

(D) Number of Tags: ~~4,000~~2,000-5,000.

(E) Special Conditions: Hunters that possess a D-13 deer tag may also hunt in zones D-11 and D-15 as described in subsections 360(a)(10)(A), (B) and (C), and subsections 360(a)(14)(A), (B) and (C).

(13) Zone D-14.

(A) Area: In those portions of Riverside and San Bernardino counties within a line beginning at the junction of Interstates 10 and 15E; northwest on Interstates 15E and 15 through Cajon Pass to Bear Valley Cutoff Road; east on Bear Valley Cutoff Road to Highway 18; east along Highway 18 to Highway 247; southeast on Highway 247 to Highway 62; southwest on Highway 62 to Interstate 10; west on Interstate 10 to the point of beginning.

(B) Seasons: The season in Zone D-14 shall open on the second Saturday in October and extend for 30 consecutive days.

(C) Bag and Possession Limit: One buck, forked horn (See subsection 351(a)) or better, per tag.

(D) Number of Tags: ~~3,000~~2,000-3,500.

(14) Zone D-15.

(A) Area: Including Santa Catalina Island, those portions of Los Angeles, Orange, Riverside, San Bernardino and San Diego counties within a line beginning at the Pacific Ocean and Interstate 10 in Santa Monica; east on Interstate 10 to Highway 79 at Beaumont; south on Highway 79 to Hemet; south on County Road R-3 through Sage to Highway 79; west on Highway 79 to Interstate 15; south on

Interstate 15 to Highway 76; west on Highway 76 to the Pacific Ocean; north along the shoreline to the point of beginning.

(B) Season: The season in Zone D-15 shall open on the second Saturday in October and extend for 30 consecutive days.

(C) Bag and Possession Limit: one buck, forked horn (See subsection 351(a)) or better, per tag.

(D) Number of Tags: ~~1,500~~500-2,000.

(E) Special Conditions: Hunters that possess a D-15 deer tag may also hunt in zones D-11 and D-13 as described in subsections 360(a)(10)(A), (B) and (C), and subsections 360(a)(12)(A), (B) and (C).

(15) Zone D-16.

(A) Area: Those portions of Imperial, Riverside and San Diego counties within the line beginning at the Pacific Ocean and Highway 76; east on Highway 76 to Interstate 15; north on Interstate 15 to Highway 79; east on Highway 79 to the San Diego-Riverside county line; east along the San Diego-Riverside county line to the Anza-Borrego State Park boundary; south along the Anza-Borrego State Park boundary to Highway 78; east on Highway 78 to Highway 111; south on Highway 111 to the U.S.-Mexican border; west along the U.S.-Mexican border to the Pacific Ocean; north along the shoreline to the point of beginning.

(B) Season: The season in Zone D-16 shall open on the fourth Saturday in October and extend for 30 consecutive days.

(C) Bag and Possession Limit: One buck, forked horn (See subsection 351(a)) or better per tag.

(D) Number of Tags: ~~3,000~~1,000-3,500.

(16) Zone D-17.

(A) Area: Those portions of Inyo, Kern, Los Angeles and San Bernardino counties within a line beginning at Highway 395 and the Kern-Inyo county line; east along the Kern-Inyo county line to the San Bernardino-Inyo county line; east along the San Bernardino-Inyo county line to Highway 127; north along Highway 127 to the California-Nevada state line; south along the California-Nevada state line to the California-Arizona state line; south along the California-Arizona state line to Interstate 40; Interstate 40 north to Needles; Highway 95 south to Highway 62; west on Highway 62 to Highway 247; northwest on Highway 247 to Highway 18; west on Highway 18 to Bear Valley Cutoff Road; west on Bear Valley Cutoff Road to Interstate 15; north on Interstate 15 to Highway 18; west on Highways 18 and 138 to Highway 14; north on Highways 14 and 395 to the point of beginning.

(B) Season: The season in Zone D-17 shall open on the second Saturday in October and extend for 23 consecutive days.

(C) Bag and Possession Limit: One buck, forked horn (See subsection 351(a)) or better per tag.

(D) Number of Tags: ~~500~~100-800.

(17) Zone D-19.

(A) Area: Those portions of Imperial, Riverside and San Diego counties within a line beginning at the junction of Interstate 10 and Highway 79; south on Highway 79 to Hemet; south on County Road R-3 to Highway 79; south on Highway 79 to the Riverside-San Diego county line; east on the Riverside-San Diego county line to the Anza-Borrego State Park boundary; south on the Anza-Borrego State Park boundary to Highway 78; east on Highway 78 to Highway 111; north on Highway 111 to the junction of Interstate 10 in Indio; west on Interstate 10 to the point of beginning.

(B) Season: The season in D-19 shall open the first Saturday in October and extend for 30 consecutive days.

(C) Bag and Possession Limit: One buck, forked horn (see subsection 351(a)) or better, per tag.

(D) Number of Tags: ~~1,500~~500-2,000.

Note: Authority: Sections 200, 202, 203, 220, 460, 3452, 3453 and 4334, Fish and Game Code. Reference: Sections 200, 202, 203, 203.1, 207, 458, 459, 460, 3452, 3453 and 4334, Fish and Game Code.

(b) X-Zone Hunts.

(1) Zone X-1.

(A) Area: In those portions of Lassen, Modoc, Shasta and Siskiyou counties within a line beginning at the California-Oregon state line and its intersection with Highway 139; south on Highway 139 to the Lookout-Hackamore Road; south on the Lookout-Hackamore Road to Highway 299; west on Highway 299 to the Pit River near Bieber; south and west on the Pit River to Highway 89 at Lake Britton; northwest on Highway 89 to Interstate 5 at Mt. Shasta; north on Interstate 5 to the junction of Highway 97 at Weed; north and east on Highway 97 to the California-Oregon state line; east on the California-Oregon state line to the point of beginning.

(B) Season: The season in Zone X-1 shall open on the first Saturday in October and extend for 16 consecutive days.

(C) Bag and Possession Limit: One buck, forked horn (See subsection 351(a)) or better, per tag.

(D) Number of Tags: ~~2,325~~1,000-6,000.

(2) Zone X-2.

(A) Area: In those portions of Modoc and Siskiyou counties within a line beginning at the intersection of Highway 139 and the California-Oregon state line near Tulelake; east along the California-Oregon state line to the eastern shoreline of Goose Lake; southwest along the eastern shoreline of Goose Lake to Westside Road (Modoc County 48); southeast along the Westside Road to Highway 395 in Davis Creek; south along Highway 395 to Highway 299 in Alturas; west along Highway 299 to Highway 139 near Canby; northwest along Highway 139 to the Oregon-California state line and the point of beginning.

(B) Season: The season in Zone X-2 shall open on the first Saturday in October and extend for 16 consecutive days.

(C) Bag and Possession Limit: One buck, forked horn (See subsection 351(a)) or better, per tag.

(D) Number of Tags: ~~180~~50-500.

(3) Zone X-3a.

(A) Area: In those portions of Lassen and Modoc counties within a line beginning at the intersection of the Lookout-Hackamore Road and Highway 139; southeast on Highway 139 to Highway 299; east on Highway 299 to Highway 395 in Alturas; south on Highway 395 to the Termo-Grasshopper Road (Lassen County 513); west on the Termo-Grasshopper Road to Highway 139; south on Highway 139 to the Cleghorn Road (Lassen County 521); west and north on the Cleghorn Road to Lassen County Road 519 near Coulthurst Flat; west on Lassen County Road 519 to U.S. Forest Service Designated Through Route 22 near Gooch Mountain; west and north on U.S. Forest Service Designated Through Route 22 to the Little Valley Road (Lassen County 404); north on the Little Valley Road to the Western Pacific Railroad; northeast on the Western Pacific Railroad to Horse Creek; northwest on Horse Creek to the Pit River; north on the Pit River to Highway 299 at Bieber; northeast on Highway 299 to the Bieber-Lookout-Hackamore Road; north along the Bieber-Lookout-Hackamore Road to the point of beginning.

(B) Season: The season in Zone X-3a shall open on the first Saturday in October and extend for 16 consecutive days.

(C) Bag and Possession Limit: One buck, forked horn (See subsection 351(a)) or better, per tag.

(D) Number of Tags: ~~295~~100-1,200.

(4) Zone X-3b.

(A) Area: In those portions of Lassen and Modoc counties within a line beginning at the east shoreline of Goose Lake and the California-Oregon state line; east along this state line to the California-Nevada state line; south along the California-Nevada state line to the Clarks Valley-Red Rock-Tuledad Road (Lassen County Roads 512, 510 and 506); west along the Tuledad Red Rock- Clarks Valley Road to Highway 395 at Madeline; north on Highway 395 to Westside Road (Modoc County 48) in Davis Creek; west and north along Westside Road to the south shoreline of Goose Lake; east and north along the south and east shoreline of Goose Lake to the point of beginning.

(B) Season: The season in Zone X-3b shall open on the first Saturday in October and extend for 16 consecutive days.

(C) Bag and Possession Limit: One buck, forked horn (see subsection 351(a)) or better, per tag.

(D) Number of Tags: ~~840~~200-3,000.

(5) Zone X-4.

(A) Area: In those portions of Lassen and Shasta counties within a line beginning at the junction of Highways 89 and 44 at Old Station; north on Highway 89 to the intersection with the Pit River at Lake Britton; east and south on the Pit River to Horse Creek; southeast on Horse Creek to the Burlington Northern Railroad; southwest on the Burlington Northern Railroad to the Little Valley Road (Lassen County 404); south on the Little Valley Road to U.S. Forest Service Designated Through Route 22; south and east on U.S. Forest Service Designated Through Route 22 to Lassen County 519 near Gooch Mountain; east on Lassen County 519 to Cleghorn Road (Lassen County 521) near Coulthurst Flat; east on Cleghorn Road to Highway 139; south on Highway 139 to its crossing of Willow Creek in the Willow Creek Valley; south (downstream) on Willow Creek to its crossing of Conservation Center Road (Lassen County A-27); west on Conservation Center Road to Highway 36; northwest on Highway 36 to the intersection with Highway 44; north and west on Highway 44 to the point of beginning.

(B) Season: The season in Zone X-4 shall open on the first Saturday in October and extend for 16 consecutive days.

(C) Bag and Possession Limit: One buck, forked horn (See subsection 351(a)) or better, per tag.

(D) Number of Tags: ~~435~~100-1,200.

(6) Zone X-5a.

(A) Area: In that portion of Lassen County within a line beginning at the junction of Highway 395 and Conservation Center Road (Lassen County A-27) in the town of Litchfield; west on Conservation Center Road to its crossing of Willow Creek; northwest (upstream) on Willow Creek to its crossing of Highway 139 in the Willow Creek Valley; north along Highway 139 to the Termo-Grasshopper Road; east on the Termo-Grasshopper Road to Highway 395; south along Highway 395 to the point of beginning.

(B) Season:

The season in Zone X-5a shall open on the first Saturday in October and extend for 16 consecutive days.

(C) Bag and Possession Limit: One buck, forked horn (See subsection 351(a)) or better, per tag.

(D) Number of Tags: ~~70~~25-200.

(7) Zone X-5b.

(A) Area: That portion of Lassen County lying within the following line: Beginning at the junction of Highway 395 and the Clarks Valley-Red Rock-Tuledad Road (Lassen County Roads 506, 510 and 512); east on the Clarks Valley-Red Rock-Tuledad Road to the California-Nevada state line; south on the California-Nevada state line to the Pyramid Lake Road (Lassen County 320); west on the Pyramid Lake Road to Highway 395; north on Highway 395 to the point of beginning.

(B) Season:

The season in Zone X-5b shall open on the first Saturday in October and extend for 16 consecutive days.

(C) Bag and Possession Limit: One buck, forked horn (See subsection 351(a)) or better, per tag.

(D) Number of Tags: ~~155~~50-500.

(8) Zone X-6a.

(A) Area: In those portions of Lassen and Plumas counties within a line beginning at the junction of Highway 147 and Highway 36 near Westwood; east on Highway 36 to Conservation Center Road at Susanville (County Road A-27); east on Conservation Center Road to Highway 395 at the town of Litchfield; east on Highway 395 to the Wendel-Pyramid Lake Road (County Road 320); east on the Wendel-Pyramid Lake Road to the Nevada-California state line; south on the Nevada-California state line to the UP-WP railroad line near Herlong; west on the UP-WP railroad line to the Herlong Access Road (County Road A- 25) at Herlong; west on the Herlong Access Road to Highway 395; north on Highway 395 to County Road 336 at Milford; southwest on County Road 336 to U.S. Forest Service Road 26N16 near the Plumas-Lassen county line; west on Forest Service Road 26N16 to Forest Service Road 28N03 at Doyle Crossing; west on Forest Services Road 28N03 to Forest Service Road 29N43 near Antelope Lake; south on Forest Service Road 29N43 to County Road 111 at Flournoy Bridge; south on County Road 111 to Forest Service Road 24N08; south on Forest Service Road 24N08 to County Road 112 at Lake Davis; south on County Road 112 to Highway 70; west on Highway 70 to the Highway 89 junction at Blairsden; west on Highway 89/70 to the Greenville Y west of Quincy; northwest on Highway 89 to Highway 147 at Canyon Dam; north on Highway 147 to the point of beginning.

(B) Seasons: The season in Zone X-6a shall open on the first Saturday in October and extend for 16 consecutive days.

(C) Bag and Possession Limit: One buck, forked horn (See subsection 351(a)) or better, per tag.

(D) Number of Tags: ~~325~~100-1,200.

(9) Zone X-6b.

(A) Area: In those portions of Lassen and Plumas counties within a line beginning at the junction of County Road 336 and Highway 395 at Milford; south on Highway 395 to the junction of Highway 395 and the Herlong Access Road (County Road A-25); east on the Herlong Access Road to its junction with the UP-WP railroad line at Herlong; east on the UP-WP railroad line to the Nevada-California state line; south on the Nevada-California state line to the junction of the Nevada-California state line and Highway 395 at Bordertown; northwest on Highway 395 to its junction at Highway 70; west on Highway 70 to its junction with County Road 112; north on County Road 112 to its junction with U.S. Forest Service Road 24N08 at Lake Davis; north on Forest Service Road 24N08 to its junction with County Road 111; northwest on County Road 111 to its junction with Forest Service Road 29N43 at Flournoy Bridge; north on Forest Service Road 29N43 to Forest Service Road 28N03 near Antelope Lake; southeast on Forest Service Road 28N03 to Forest Service Road 26N16 at Doyle Crossing; east on Forest Service Road 26N16 to County Road 336 near the Plumas-Lassen county line; north on County Road 336 to the point of beginning.

(B) Season: The season in Zone X-6b shall open on the first Saturday in October and extend for 16 consecutive days.

(C) Bag and Possession Limit: One buck, forked horn (see subsection 351(a)) or better, per tag.

(D) Number of Tags: ~~415~~100-1,200.

(10) Zone X-7a.

(A) Area: In those portions of Lassen, Nevada, Plumas and Sierra counties lying within a line beginning at the junction of Highway 395 and the California-Nevada state line at Bordertown; south along the Long Valley Road (County Road S570) to its intersection with the Henness Pass Road (County Road S860); west on Henness Pass Road over Summit 2 to the intersection with County Road S450 (near the Davies Creek Campground at Stampede Reservoir); west on County Road S450 (the Henness Pass Road) through Kyburz Flat to its intersection with Highway 89; south on Highway 89 to its intersection with Interstate 80 at Truckee; west on Interstate 80 to the Pacific Crest Trail near the Castle Peak- Boreal Ridge Summit; north on the Pacific Crest Trail to the new road to White Rock Lake (one mile west of White Rock Lake in section 21, T18N, R14E, M.D.B.M.); north on the new White Rock Lake Road below Bear Valley to the White Rock Lake Road; north on the White Rock Lake Road to the Jackson Meadows Highway (Fiberboard Road); east two miles on the Jackson Meadows Highway to the Yuba Pass Road at Webber Lake; north on the Yuba Pass Road (main haul road) through Bonta Saddle to Highway 49 at Yuba Pass; west on Highway 49 to the new Gold Lake Road at Bassetts; north on the new Gold Lake Road to Highway 89 near Graeagle; north on Highway 89 to Highway 70; east on Highway 70 to Highway 395 at Hallelujah Junction; south on Highway 395 to the point of beginning.

(B) Season: The season in Zone X-7a shall open on the first Saturday in October and extend for 16 consecutive days.

(C) Bag and Possession Limit: One buck, forked horn (See subsection 351(a)) or better, per tag.

(D) Number of Tags: ~~220~~50-500.

(11) Zone X-7b.

(A) Area: In those portions of Nevada, Placer and Sierra counties lying within a line beginning at the junction of Highway 395 and the California-Nevada state line at Bordertown; south along the California-Nevada state line to the shore of Lake Tahoe; west and south along the shore of Lake Tahoe to the mouth ofBlackwood Creek near Idlewild; west on Blackwood Creek to Highway 89; north on Highway 89 to Blackwood Canyon Road; Blackwood Canyon Road near Idlewild; west along Blackwood Canyon Road to Forest Route 03; west and south along Forest Route 03 to the Pacific Crest Trail at Barker Pass; north on the Pacific Crest Trail to its intersection with Interstate 80 near the Castle Peak-Boreal Ridge Summit; east on Interstate 80 to its intersection with Highway 89 at Truckee; north on Highway 89 to County Road S450 (the Henness Pass Road, a.k.a. the Kyburz Flat Road); east on County Road S450 to its intersection with County Road S860 (continuation of Henness Pass Road) near the Davies Creek Campground at Stampede Reservoir; east on County Road S860, over Summit 2 to the junction with County Road S570 (the Long Valley Road); north on County Road S570 to Bordertown at the point of beginning.

(B) Season: The season in Zone X-7b shall open on the first Saturday in October and extend for 16 consecutive days.

(C) Bag and Possession Limit: One buck, forked horn (see subsection 351(a)) or better, per tag.

(D) Number of Tags: ~~100~~25-200.

(12) Zone X-8.

(A) Area: In those portions of Alpine and El Dorado counties within a line beginning at the junction of the California-Nevada state line and Highway 50; southeast along the California-Nevada state line to the Indian Springs Road, south to the Alpine-Mono County line; south along the Alpine-Mono county line to the Sierra crest;northwest along the Sierra crest to the intersection with the Pacific Crest Trail near Wolf Creek Pass;northwest along the Pacific Crest Trail to Highway 50 at Echo Summit; northeast on Highway 50 to the point of beginning.

(B) Season: The season in Zone X-8 shall open on the fourth Saturday in September and extend for 16 consecutive days.

(C) Bag and Possession Limit: One buck, forked horn (See subsection 351(a)) or better, per tag.

(D) Number of Tags: ~~300~~100-750.

(13) Zone X-9a.

(A) Area: In those portions of Fresno, Inyo, Madera and Mono counties within a line beginning at the intersection of Highway 6 and the California-Nevada state line; south along Highway 6 to its junction with Highway 395; south along Highway 395 to its junction with Highway 168; west and south along Highway 168 to the North Lake Road turnoff; west along the North Lake Road and the Piute Pass Trail to the Sierra Crest (Inyo National Forest Boundary); north along the Inyo National Forest Boundary to the Deer Creek Trail; south and west along the Deer Creek Trail to the upper crossing of Deer Creek; west and south along Deer Creek to its confluence with Fish Creek; west along Fish Creek to its confluence with the middle fork of the San Joaquin River; north along the middle fork of the San Joaquin River to the junction of King Creek; west along King Creek to the junction of Ashley Creek; west along Ashley Creek to Ashley Lake; continue west along Ashley Creek to the junction of the Inyo National Forest boundary; north along the Inyo National Forest Boundary (the crest of the Ritter Range) to the Mono-Madera county line; north along the Mono-Madera county line to Mono-Tuolumne county line; north on the Mono-Tuolumne county line to the Virginia Lakes Trail (Entry Trail D-11); east along Virginia Lakes Trail to Virginia Lakes Road; east along Virginia Lakes Road to Highway 395; south along Highway 395 to Highway 167; east on Highway 167 to the California-Nevada state line; southeast on the California-Nevada state line to the point of beginning.

(B) Season: The season in Zone X-9a shall open on the third Saturday in September and extend for 24 consecutive days.

(C) Bag and Possession Limit: One buck, forked horn (See subsection 351(a)) or better, per tag.

(D) Number of Tags: ~~750~~100-1,200.

(14) Zone X-9b.

(A) Area: That portion of Inyo County within a line beginning at the intersection of Highway 395 and Cottonwood Creek; northwest along Cottonwood Creek to the Horseshoe Meadow Road; south along the Horseshoe Meadow Road to the Cottonwood Pass Trail; west along the Cottonwood Pass Trail through Horseshoe Meadow to the Inyo-Tulare county line at Cottonwood Pass; north on the Inyo-Tulare and the Inyo-Fresno county lines to the Piute Pass Trail; east along the Piute Pass Trail to the North Lake Road; east and south on the North Lake Road to Highway 168; north and east on Highway 168 to Highway 395; south on Highway 395 to the point of beginning.

(B) Season: The season in Zone X-9b shall open on the third Saturday in September and extend for 24 consecutive days.

(C) Bag and Possession Limit: One buck, forked horn (see subsection 351(a)) or better per tag.

(D) Number of Tags: ~~325~~100-600.

(15) Zone X-9c.

(A) Area: In those portions of Inyo and Mono counties within a line beginning at Highway 395 and the Kern-Inyo county line; north along Highway 395 to Highway 6; north on Highway 6 to the California-Nevada state line; southeast along the California-Nevada state line to Highway 127; south along Highway 127 to the Inyo-San Bernardino county line; west along the Inyo-San Bernardino county line to the Kern-Inyo county line; west along the Kern-Inyo county line to the point of beginning.

(B) Season: The season in Zone X-9c shall open on the third Saturday in October and extend for 23 consecutive days.

(C) Bag and Possession Limit: One buck, forked horn (see subsection 351(a)) or better, per tag.

(D) Number of Tags: ~~325~~100-600.

(16) Zone X-10.

(A) Area: In those portions of Kern, Tulare and Inyo counties within a line beginning at the intersection of Highway 178 and the Doyle Ranch Road in the town of Onyx; north along the Doyle Ranch Road to the South Fork of the Kern River; north along the South Fork of the Kern River to the Chimney Meadow-Blackrock Station Road (Forest Road 21S03); northwest along the Chimney Meadow-Blackrock Station Road through Troy Meadows to the road's end at the Inyo and Sequoia National Forest boundary near Blackrock Mountain; northwest along the Inyo and Sequoia National Forest boundary to the main Kern River; northwest along the main Kern River to the Sequoia National Park boundary; northeast along the Sequoia National Park boundary to the Inyo-Tulare county line; southeast along the Inyo-Tulare county line to the Cottonwood Pass Trail at Cottonwood Pass; east along the Cottonwood Pass Trail through Horseshoe Meadow to the Horseshoe Meadow Road; north along the Horseshoe Meadow Road to Cottonwood Creek; southeast along Cottonwood Creek to Highway 395; south along Highway 395 to Highway 14; south along Highway 14 to Highway 178; north and west along Highway 178 to the point of beginning.

(B) Season:

The season in Zone X-10 shall open on the last Saturday in September and extend for 16 consecutive days.

(C) Bag and Possession Limit:

One buck, forked horn (See subsection 351(a)) or better, per tag.

(D) Number of Tags: ~~400~~100-600.

(17) Zone X-12.

(A) Area: That portion of Mono County within a line beginning at the junction of the California-Nevada state line and Highway 167 (Pole Line Road); west on Highway 167 to Highway 395; north on Highway 395 to Virginia Lakes Road; west on Virginia Lakes Road to the Virginia Lakes Trail (Entry Trail D11); northwest on the Virginia Lakes Trail to the Mono-Tuolumne county line; north along the Mono-Tuolumne county line to the Mono-Alpine county line; northeast along the Mono-Alpine county line to Indian Springs Road; northeast on Indian Springs Road to the California-Nevada state line; southeast on the California-Nevada state line to the point of beginning.

(B) Season: The season in Zone X-12 shall open on the third Saturday in September and extend for 24 consecutive days.

(C) Bag and Possession Limit: One buck, forked horn (see subsection 351 (a)) or better, per tag.

(D) Number of Tags: ~~805~~100-1,200.

Note: Authority: Sections 200, 202, 203, 220, 460, 3452, 3453 and 4334, Fish and Game Code. Reference: Sections 200, 202, 203, 203.1, 207, 458, 459, 460, 3452, 3453 and 4334, Fish and Game Code.

(c) Additional Hunts.

(1) G-1 (Late Season Buck Hunt for Zone C-4).

(A) Area: Those portions of Butte, Glenn, Lassen, Plumas, Shasta, and Tehama counties within the area described as Zone C-4 (see subsection 360(a)(3)(A)4.).

(B) Season: The season for additional hunt G-1 (Late Season Buck Hunt for Zone C-4) shall open on the fourth Saturday in October and extend for 9 consecutive days.

(C) Bag and Possession Limit: One buck, forked horn (see subsection 351(a)) or better, per tag.

(D) Number of Tags: ~~2,850~~500-5,000.

(2) G-3 (Goodale Buck Hunt).

(A) Area: In that portion of Inyo County within a line beginning at the intersection of Highway 395 and Lone Pine Creek; west along Lone Pine Creek to the Inyo-Tulare county line; northwest along the Inyo-Tulare and Inyo-Fresno county lines to Taboose Creek; east along Taboose Creek to Highway 395; south along Highway 395 to the point of beginning.

(B) Season: The season for additional hunt G-3 (Goodale Buck Hunt) shall open on the first Saturday in December and extend for 16 consecutive days.

(C) Bag and Possession Limit: One buck, forked horn (see subsection 351(a)) or better, per tag.

(D) Number of Permits: ~~35~~5-50.

(3) G-6 (Kern River Deer Herd Buck Hunt).

(A) Area: In those portions of Kern and Tulare counties lying within a line beginning at the intersection of County Road 521 and County Road 495 at Kernville; south on County Road 495 to the

intersection of Highway 155 at Wofford Heights; west on Highway 155 to the intersection of U.S. Forest Service Road 24S15 at Greenhorn Summit; north on U.S. Forest Service Road 24S15 to the intersection of U.S. Forest Service Road 23S16 (near Portuguese Pass); northeast on U.S. Forest Service Road 23S16 to County Road SM50; west on County Road SM50 to the intersection of the Western Divide Highway (County Road SM107); north on County Road SM107 to the junction of U.S. Forest Service Road 21S50 (near Quaking Aspen Campground); north on U.S. Forest Service Road 21S50 to the junction of U.S. Forest Service Road 20S79; northeast on U.S. Forest Service Road 20S79 to the junction of U.S. Forest Service Road 20S53; northeast on U.S. Forest Service Road 20S53 to the Golden Trout Wilderness boundary (at Lewis Camp Trail Head); east on the Golden Trout Wilderness Boundary to Rattlesnake Creek; southeast on Rattlesnake Creek to U.S. Forest Service Road 22S05; south on U.S. Forest Service Road 22S05 to the Dome Land Wilderness Boundary; southwest on the Dome Land Wilderness Boundary to the intersection of the South Fork of the Kern River; south along the South Fork of the Kern River to the intersection of County Road 521; west on County Road 521 to the point of beginning.

(B) Season: The season for additional hunt G-6 (Kern River Deer Herd Buck Hunt) shall open on the first Saturday in December and extend for 9 consecutive days.

(C) Bag and Possession Limit: One buck, forked horn (see subsection 351(a)) or better, per tag.

(D) Number of Tags: ~~50~~25-100.

(4) G-7 (Beale Either-Sex Deer Hunt).

(A) Area: That portion of Yuba County lying within the exterior boundaries of Beale Air Force Base.

(B) Season: The season for additional hunt G-7 (Beale Either-Sex Deer Hunt) shall open on the third Saturday in August and extend for 79 consecutive days, except if rescheduled by the Commanding Officer with Department concurrence between the season opener and December 31.

(C) Bag and Possession Limit: One either-sex deer (see subsection 351(c)) per tag.

(D) Number of Tags: 20 (military only).

(E) Special Conditions:

1. Only shotguns with single slugs or muzzleloading rifles, crossbows, and archery equipment as specified in sections 353 and 354 may be used.

2. In the event the Commanding Officer cancels the hunt, G-7 tagholders will only have the option of exchanging the unused tag for any remaining deer tag or receiving a refund.

(5) G-8 (Fort Hunter Liggett Antlerless Deer Hunt).

(A) Area: That portion of Monterey County lying within the exterior boundaries of the Hunter Liggett Military Reservation, except as restricted by the Commanding Officer.

(B) Season: The season for additional hunt G-8 (Fort Hunter Liggett Antlerless Deer Hunt) shall ~~be~~ open ~~Saturdays, Sundays, and the Columbus Day holiday only beginning the first Saturday in October~~ on October 4 and extend for ~~two~~five consecutive ~~weekends~~days, except if rescheduled by the Commanding Officer with Department concurrence between the season opener and December 31.

(C) Bag and Possession Limit: One antlerless deer (see subsection 351(b)) per tag.

(D) Number of Tags: 20 (10 military and 10 general public).

(E) Special Conditions: In the event the Commanding Officer cancels the hunt, G-8 tagholders will only have the option of exchanging the unused tag for any remaining deer tag or receiving a refund.

(6) G-9 (Camp Roberts Antlerless Deer Hunt).

(A) Area: That portion of San Luis Obispo County lying within the exterior boundaries of Camp Roberts, except as restricted by the Commanding Officer.

(B) Season: The season for additional hunt G-9 (Camp Roberts Antlerless Deer Hunt) shall open the last Monday in August and extend for 8 consecutive days, except if rescheduled bythe Commanding Officer with Department concurrence between the season opener and December 31.

(C) Bag and Possession Limit: One antlerless deer (see subsection 351(b)) per tag.

(D) Number of Tags: 30 (15 military and 15 general public).

(E) Special Conditions: In the event the Commanding Officer cancels the hunt, G-9 tagholders will only have the option of exchanging the unused tag for any remaining deer tag or receiving a refund.

(7) G-10 (Camp Pendleton Either-Sex Deer Hunt).

(A) Area: That portion of San Diego County lying within the exterior boundaries of the U.S. Marine Corps Base, Camp Joseph Pendleton.

(B) Season: The season for additional hunt G-10 (Camp Pendleton Either-Sex Deer Hunt) shall be open on Saturdays, Sundays, ~~the Columbus and Veterans Day Holidays and the day after Thanksgiving only~~holidays and the day after Thanksgiving beginning the ~~third~~first Saturday in September and extend through the first Sunday in December.~~following the Thanksgiving Day holiday, except if rescheduled by the Commanding Officer with Department concurrence between the season opener and December 31.~~Season dates may be subject to further restriction, or additional hunt days scheduled with concurrence from the Department, between the season opener and December 31 by the Commanding Officer due to military operations.

(C) Bag and Possession Limit: One either-sex deer (see subsection 351(c)) per tag.

(D) Number of Tags: ~~300~~400 (military only).

(E) Special Conditions:

1. Only archery equipment is permitted during the first ~~four~~six ~~weekends~~weeks of the season.

2. Hunting with firearms is permitted beginning on the ~~fifth~~seventh weekend through the end of season.

3. A permit fee and method of take registration with the Base ~~are~~may be required.

4. In the event the Commanding Officer cancels the hunt, G-10 tagholders will only have the option of exchanging the unused tag for any remaining deer tag or receiving a refund.

(8) G-11 (Vandenberg Either-Sex Deer Hunt).

(A) Area: That portion of Santa Barbara County lying within the exterior boundaries of Vandenberg Air Force Base.

(B) Season: The season for additional hunt G-11 (Vandenberg Either-Sex Deer Hunt) shall open on the last Monday in August and extend through December 31.

(C) Bag and Possession Limit: One either-sex deer (see subsection 351(c)) per tag.

(D) Number of Tags: 500 (military and Department of Defense employees only).

(E) Special Conditions: In the event the Commanding Officer cancels the hunt, G-11 tagholders will only have the option of exchanging the unused tag for any remaining deer tag or receiving a refund.

(9) G-12 (Gray Lodge Shotgun Either-Sex Deer Hunt).

(A) Area: Those portions of Butte and Sutter counties within the exterior boundaries of the Gray Lodge State Wildlife Area.

(B) Season: The season for additional hunt G-12 (Gray Lodge Shotgun Either-Sex Deer Hunt) shall open on the third Saturday in September and extend for nine consecutive days.

(C) Bag and Possession Limit: One either-sex deer (see subsection 351(c)) per tag.

(D) Number of Tags: ~~30~~10-50.

(E) Special Conditions: Only shotguns and ammunition as specified in Section 353 may be used.

(10) G-13 (San Diego Antlerless Deer Hunt).

(A) Area: That portion of San Diego County within Zone D-16 (see subsection 360(a)(15)(A)).

(B) Season: The season for additional hunt G-13 (San Diego Antlerless Deer Hunt) shall open on the fourth Saturday in October and extend for 23 consecutive days.

(C) Bag and Possession Limit: One antlerless deer (see subsection 351(b)) per tag.

(D) Number of Tags: 50-300.

(11) G-19 (Sutter-Yuba Wildlife Areas Either-Sex Deer Hunt).

(A) Area: Those portions of Yuba and Sutter counties within the exterior boundaries of: (1) the Feather River Wildlife Area, and (2) the Sutter Bypass Wildlife Area (as defined in Section 550, Title 14, CCR).

(B) Season: The season for additional hunt G-19 (Sutter-Yuba Wildlife Areas Either-Sex Deer Hunt) shall open on the fourth Saturday in September and extend through December 31.

(C) Bag and Possession Limit: One either-sex deer (see subsection 351(c)) per tag.

(D) Number of Tags: ~~25~~10-50.

(E) Special Conditions: Only archery equipment and crossbows (as specified in Section 354) and shotguns and ammunition (as specified in Section 353) may be used.

(12) G-21 (Ventana Wilderness Buck Hunt).

(A) Area: That portion of Monterey County and the Los Padres National Forest within the exterior boundaries of the Ventana Wilderness Area.

(B) Season: The season for additional hunt G-21 (Ventana Wilderness Buck Hunt) shall open on the second Saturday in November and extend for 23 consecutive days.

(C) Bag and Possession Limit: One buck, forked horn (see subsection 351(a)) or better, per tag.

(D) Number of Tags: 25-100.

(13) G-37 (Anderson Flat Buck Hunt).

(A) Area: In that portion of hunt Zone D-6 in Mariposa and Tuolumne counties lying within a line beginning at the intersection of Highway 140 and Bull Creek Road at Briceburg; north on Bull Creek Road (U.S. Forest Service Road 2S05) to Greeley Hill Road; west on Greeley Hill Road to Smith Station Road (County Route J20); north on Smith Station Road to Highway 120 (near Burch Meadow); east on Highway 120 to the Yosemite National Park Boundary (near Big Oak-Flat Ranger Station); southeast along the Yosemite National Park Boundary to Highway 140; west on Highway 140 to the Yosemite National Park Boundary; northwest along the Yosemite National Park Boundary to Highway 140 (at Redbud Campground); west on Highway 140 to the point of beginning.

(B) Season: The season for additional hunt G-37 (Anderson Flat Buck Hunt) shall open on the fourth Saturday in November and extend for nine consecutive days.

(C) Bag and Possession Limit: One buck, forked horn (see subsection 351(a)) or better, per tag.

(D) Number of Tags: 25-50.

(14) G-38 (X-10 Late Season Buck Hunt).

(A) Area: In those portions of Kern, Tulare, and Inyo counties within a line beginning at the intersection of Highway 178 and the Doyle Ranch Road in the town of Onyx; north along the Doyle Ranch Road to the South Fork of the Kern River; north along the South Fork of the Kern River to the Chimney Meadow-Blackrock Station Road (Forest Road 21S03); northwest along the Chimney Meadow-Blackrock Station Road through Troy Meadows to the road's end at the Inyo and Sequoia National Forest boundary near Blackrock Mountain; northwest along the Inyo and Sequoia National Forest boundary to the main Kern River; northwest along the main Kern River to the Sequoia National Park boundary; northeast along the Sequoia National Park boundary to the Inyo-Tulare county line; southeast along the Inyo-Tulare county line to the Cottonwood Pass Trail at Cottonwood Pass; east along the Cottonwood Pass Trail through Horseshoe Meadow to the Horseshoe Meadow Road; north along the Horseshoe Meadow Road to Cottonwood Creek; southeast along Cottonwood Creek to Highway 395; south along Highway 395 to Highway 14; south along Highway 14 to Highway 178; north and west along Highway 178 to the point of beginning.

(B) Season: The season for additional hunt G-38 (X-10 Late Season Buck Hunt) shall open on the third Saturday in October and extend for 16 consecutive days.

(C) Bag and Possession Limit: One buck, forked horn (see subsection 351(a)) or better, per tag.

(D) Number of Tags: 50-300.

(15) G-39 (Round Valley Late Season Buck Hunt).

(A) Area: In that portion of Inyo and Mono counties within a line beginning at the intersection of U.S. Highway 395 and California Highway 168; west and south along Highway 168 to the North Lake Road turnoff; west along the North Lake Road and the Piute Pass Trail to the Inyo-Fresno county line; north along the Inyo-Fresno county line to the Mono-Fresno county line; north along the Mono-Fresno and Mono-Madera county lines to the junction of the Mono-Madera county line and California Highway 203 at Minaret Summit; southeast along Highway 203 to its junction with Highway 395; south along Highway 395 to the point of beginning.

(B) Season: The season for additional hunt G-39 (Round Valley Late Season Buck Hunt) shall open on the fourth Saturday in October and extend for 16 consecutive days.

(C) Bag and Possession Limit: One buck, forked horn (see subsection 351(a)) or better, per tag.

(D) Number of Tags: 5-150.

(16) M-3 (Doyle Muzzleloading Rifle Buck Hunt).

(A) Area: That portion of Lassen County within the area described as X-6b (see subsection 360(b)(9)(A)).

(B) Season: The season for additional hunt M-3 (Doyle Muzzleloading Rifle Buck Hunt) shall open on the third Saturday in November and extend for nine consecutive days.

(C) Bag and Possession Limit: One buck, forked horn (see subsection 351(a)) or better, per tag.

(D) Number of Tags: ~~20~~10-75.

(E) Special Conditions: Only muzzleloading rifles as specified in Section 353 may be used.

(17) M-4 (Horse Lake Muzzleloading Rifle Buck Hunt).

(A) Area: That portion of Lassen County within the area described as X5a (see subsection 360(b)(6)(A)).

(B) Season: The season for additional hunt M-4 (Horse Lake Muzzleloading Rifle Buck Hunt) shall open on the fourth Saturday in October and extend for nine consecutive days.

(C) Bag and Possession Limit: One buck, forked horn (see subsection 351(a)) or better, per tag.

(D) Number of Tags: 5-50.

(E) Special Conditions: Only muzzleloading rifles as specified in Section 353 may be used.

(18) M-5 (East Lassen Muzzleloading Rifle Buck Hunt).

(A) Area: That portion of Lassen County within the area described as X-5b (see subsection 360(b)(7)(A)).

(B) Season: The season for additional hunt M-5 (East Lassen Muzzleloading Rifle Buck Hunt) shall open on the fourth Saturday in October and extend for nine consecutive days.

(C) Bag and Possession Limit: One buck, forked horn (see subsection 351(a)) or better, per tag.

(D) Number of Tags: ~~15~~5-50.

(E) Special Conditions: Only muzzleloading rifles as specified in Section 353 may be used.

(19) M-6 (San Diego Muzzleloading Rifle Either-Sex Deer Hunt).

(A) Area: That portion of San Diego County within Zone D-16 (see subsection 360(a)(15)(A)).

(B) Season: The season for additional hunt M-6 (San Diego Muzzleloading Rifle Either-Sex Deer Hunt) shall open on the third Saturday in December and extend through December 31.

(C) Bag and Possession Limit: One either-sex deer (see subsection 351(c)) per tag.

(D) Number of Tags: ~~80~~25-100.

(E) Special Conditions: Only muzzleloading rifles as specified in Section 353 may be used.

(20) M-7 (Ventura Muzzleloading Rifle Either-Sex Deer Hunt).

(A) Area: All of Ventura County.

(B) Season: The season for additional hunt M-7 (Ventura Muzzleloading Rifle Either-Sex Deer Hunt) shall open on the last Saturday in November and extend for 16 consecutive days.

(C) Bag and Possession Limit: One either-sex deer (see subsection 351(c)) per tag.

(D) Number of Tags: 50-150.

(E) Special Conditions: Only muzzleloading rifles as specified in Section 353 may be used.

(21) M-8 (Bass Hill Muzzleloading Rifle Buck Hunt).

(A) Area: That portion of Lassen County within the area described as Zone X-6a (see subsection 360(b)(8)(A)).

(B) Season: The season for additional hunt M-8 (Bass Hill Muzzleloading Rifle Buck) shall open on the fourth Saturday in October and extend for 9 consecutive days.

(C) Bag and Possession Limit: One buck, forked horn (see subsection 351(a)) or better, per tag.

(D) Number of Tags: ~~20~~5-50.

(E) Special Conditions: Only muzzleloading rifles as specified in Section 353 may be used.

(22) M-9 (Devil's Garden Muzzleloading Rifle Buck Hunt).

(A) Area: That portion of Modoc County within a line beginning at the intersection of the Malin Road (Modoc County 114) and the California/Oregon state line; east along the state line to the Crowder Flat Road; south along the Crowder Flat Road to the Blue Mountain Road (Modoc County 136); west on the Blue Mountain Road to the Blue Mountain-Mowitz Butte-Ambrose Road; south on the Blue Mountain-Mowitz Butte-Ambrose Road to Highway 139; north on Highway 139 to the Malin Road; north on the Malin Road to the point of beginning.

(B) Season: The season for additional hunt M-9 (Devil's Garden Muzzleloading Rifle Buck Hunt) shall open on the fourth Saturday in October and extend for 16 consecutive days.

(C) Bag and Possession Limit: One buck, forked horn (see subsection 351(a)) or better, per tag.

(D) Number of Tags: ~~15~~5-100.

(E) Special Conditions: Only muzzleloading rifles as specified in Section 353 may be used.

(23) M-11 (Northwestern California Muzzleloading Rifle Buck Hunt).

(A) Area: Those portions of Del Norte, Glenn, Humbolt, Lake, Mendocino, Siskiyou, and Trinity counties within the area described as Zone B-1 (see subsection 360(a)(2)(A)1.

(B) Season: The season for additional hunt M-11 (Northwestern California Muzzleloading Rifle Buck Hunt) shall open on the second Saturday in November and extend for 16 consecutive days.

(C) Bag and Possession Limit: One buck, forked horn (see subsection 351(a)) or better, per tag.

(D) Number of Tags: 20-200.

(E) Special Conditions: Only muzzleloading rifles as specified in Section 353 may be used.

(24) MA-1 (San Luis Obispo Muzzleloading Rifle/Archery Either-Sex Deer Hunt).

(A) Area: That portion of San Luis Obispo County lying within the Los Padres National Forest.

(B) Season: The season for additional hunt MA-1 (San Luis Obispo Muzzleloading Rifle/Archery Either-Sex Deer Hunt) shall open the last Saturday in November and extend for 16 consecutive days.

(C) Bag and Possession Limit: One either-sex deer (see subsection 351(c)) per tag.

(D) Number of Tags: 20-150.

(E) Special Conditions: Only archery equipment as specified in Section 354 or muzzleloading rifles as specified in Section 353 may be used.

(25) MA-3 (Santa Barbara Muzzleloading Rifle/Archery Buck Hunt).

(A) Area: All of Santa Barbara County.

(B) Season: The season for additional hunt MA-3 (Santa Barbara Muzzleloading Rifle/Archery Buck Hunt) shall open on the last Saturday in November and extend for 16 consecutive days.

(C) Bag and Possession Limit: One buck, forked horn (see subsection 351(a)) or better, per tag.

(D) Number of Tags: 20-150.

(E) Special Conditions: Only muzzleloading rifles as specified in Section 353 and archery equipment as specified in Section 354 may be used.

(26) J-1 (Lake Sonoma Junior Either-Sex Deer Hunt).

(A) Area: That portion of Sonoma County within the boundaries of the Lake Sonoma Area, U.S. Army Corps of Engineers (COE) property described as follows: Beginning at the intersection of Hot Springs Road and the COE boundary; east and south along the boundary line to the intersection with Brush Creek; west along the north bank of Brush Creek (shoreline) to the Dry Creek arm of Lake Sonoma; south along the shoreline of the Dry Creek arm to Smittle Creek; north along the COE property line to Dry Creek; east along the COE boundary across Cherry Creek, Skunk Creek, and Yorty Creek to the point of beginning.

(B) Season: The season for additional hunt J-1 (Lake Sonoma Junior Either-Sex Deer Hunt) shall open on the first Saturday in November and extend for two consecutive days.

(C) Bag and Possession Limit: One either-sex deer (see subsection 351(c)) per tag.

(D) Number of Tags: 10-25.

(E) Special Conditions:

1. Only junior license holders shall apply (see subsection 708(a)(2)).
2. Tagholders shall be accompanied by an adult chaperon 18 years of age or older while hunting.
3. Tagholders shall attend an orientation meeting the day before the opening day of the season.
4. The use of dogs is prohibited.
5. Boats are required for all areas west of Cherry Creek (2/3 of the hunt area). Only cartop boats are allowed to launch from the Yorty Creek access.

(27) J-3 (Tehama Wildlife Area Junior Buck Hunt).

(A) Area: That portion of Tehama County within the boundaries of the Tehama Wildlife Area.

(B) Season: The season for additional hunt J-3 (Tehama Wildlife Area Junior Buck Hunt) shall open on the last Saturday in November and extend for 2 consecutive days.

(C) Bag and Possession Limit: One buck, forked horn (see subsection 351(a)) or better, per tag.

(D) Number of Tags: 15-30.

(E) Special Conditions:

1. Only junior license holders shall apply (see subsection 708(a)(2)).
2. Tagholders shall be accompanied by an adult chaperon 18 years of age or older while hunting.
3. Tagholders shall attend an orientation meeting the day before the opening day of the season.

(28) J-4 (Shasta-Trinity Junior Buck Hunt).

(A) Area: In those portions of Shasta and Trinity counties beginning at the junction of Highway 3 and Highway 299 in Weaverville; north on Highway 3 to the East Side Road at the north end of Trinity Lake; east on the East Side Road to Dog Creek Road; east on Dog Creek Road to Interstate 5 at Vollmers; south on Interstate 5 to Shasta Lake; south along the west shore of Shasta Lake to Shasta Dam; south along Shasta Dam along the Sacramento River to Keswick Dam Road; west on Keswick Dam Road to Rock Creek Road; south on Rock Creek Road to Highway 299; west on Highway 299 to the point of beginning.

(B) Season: The season for additional hunt J-4 (Shasta-Trinity Junior Buck Hunt) shall open on the fourth Saturday in November and extend for nine consecutive days.

(C) Bag and Possession Limit: One buck, forked horn (see subsection 351(a)) or better, per tag.

(D) Number of Tags: 15-50.

(E) Special Conditions:

1. Only junior license holders shall apply (see subsection 708(a)(2)).

2. Tagholders shall be accompanied by an adult chaperon 18 years of age or older while hunting.

(29) J-7 (Carson River Junior Either-Sex Deer Hunt).

(A) Area: That portion of Alpine County within the area described as Zone X-8 (see subsection 360(b)(12)(A)).

(B) Season: The season for additional hunt J-7 (Carson River Junior Either-Sex Deer Hunt) shall open on the first Saturday following the closure of the X-8 general season (see subsection 360(b)(12)(B)) and extend for 9 consecutive days.

(C) Bag and Possession limit: One either-sex deer (see subsection 351(c)) per tag.

(D) Number of Tags: ~~15~~10-50.

(E) Special Conditions:

1. Only junior license holders shall apply (see subsection 708(a)(2)).

2. Tagholders shall be accompanied by an adult chaperon 18 years of age or older while hunting.

(30) J-8 (Daugherty Hill Wildlife Area Junior Either-Sex Deer Hunt).

(A) Area: That portion of Yuba County within the exterior boundaries of the Daugherty Hill Wildlife Area (as defined in Section 550, Title 14, CCR).

(B) Season: The season for additional hunt J-8 (Daugherty Hill Wildlife Area Junior Either-Sex Deer Hunt) shall open on the first Saturday in December and extend through December 31.

(C) Bag and Possession Limit: One either-sex deer (see subsection 351(c)) per tag.

(D) Number of Tags: ~~15~~10-20.

(E) Special Conditions:

1. Only junior license holders shall apply (see subsection 708(a)(2)).

2. Tagholders shall be accompanied by an adult chaperon 18 years of age or older while hunting.

3. Tagholders shall attend an orientation meeting the day before the opening day of the season.

(31) J-9 (Little Dry Creek Junior Shotgun Either-Sex Deer Hunt).

(A) Area: That portion of Butte County within the exterior boundaries of the Little Dry Creek Unit Upper Butte Basin Wildlife Area (as defined in Section 550).

(B) Season: The season for additional hunt J-9 (Little Dry Creek Junior Shotgun Either-Sex Deer Hunt) shall open on the third Saturday in September and extend for 9 consecutive days.

(C) Bag and Possession Limit: One either-sex deer (see subsection 351(c)), per tag.

(D) Number of Tags: 5-10.

(E) Special Conditions:

1. Only junior license holders shall apply (see subsection 708(a)(2)).

2. Tagholders shall be accompanied by an adult chaperon 18 years of age or older while hunting.

3. Tagholders shall attend an orientation meeting the day before the opening day of the season.

4. Only shotguns and ammunition as specified in Section 353 may be used.

(32) J-10 (Fort Hunter Liggett Junior Either-Sex Deer Hunt).

(A) Area: That portion of Monterey County lying within the exterior boundaries of the Fort Hunter Liggett Military Reservation, except as restricted by the Commanding Officer.

(B) Season: The season for additional hunt J-10 (Fort Hunter Liggett Junior Either-Sex Deer Hunt) shall ~~be~~ open ~~Saturdays, Sundays, and the Columbus Day holiday only beginning the first Saturday in October~~onOctober 4 and extend for ~~two~~five consecutive ~~weekends~~days and reopen October 13 and extend for two consecutive days, except if rescheduled by the Commanding Officer with Department concurrence between the season opener and December 31.

(C) Bag and Possession Limit: One either-sex deer (see subsection 351(c)) per tag.

(D) Number of Tags: ~~60~~85 (10 military and ~~50~~75 general public).

(E) Special Conditions:

1. Only junior license holders shall apply (see subsection 708(a)(2)).

2. Tagholders shall be accompanied by an adult chaperon 18 years of age or older while hunting.

3. Tagholders shall attend an orientation meeting the day before the opening day of the season.

4. In the event the Commanding Officer cancels the hunt, J-10 tagholders will only have the option of exchanging the unused tag for any remaining deer tag or receiving a refund.

(33) J-11 (San Bernardino Junior Either-Sex Deer Hunt).

(A) Area: In those portions of Zone D-14 within San Bernardino County (see subsection 360(a)(13)(A).

(B) Season: The season for additional hunt J-11 (San Bernardino Junior Either-Sex Deer Hunt) shall open on the third Saturday in November and extend for 9 consecutive days.

(C) Bag and Possession Limit: One either-sex deer (see subsection 351(c)) per tag.

(D) Number of Tags: ~~40~~10-50.

(E) Special Conditions:

1. Only junior license holders shall apply (see subsection 708(a)(2)).

2. Tagholders shall be accompanied by an adult chaperon 18 years of age or older while hunting.

(34) J-12 (Round Valley Junior Buck Hunt).

(A) Area: In that portion of Inyo and Mono counties within a line beginning at the intersection of U.S. Highway 395 and California Highway 168; west and south along Highway 168 to the North Lake Road turnoff; west along the North Lake Road and the Paiute Pass Trail to the Inyo-Fresno county line; north along the Inyo-Fresno county line to the Mono-Fresno county line; north along the Mono-Fresno and Mono-Madera county lines to the junction of the Mono-Madera county line and California Highway 203 at Minaret Summit; southeast along Highway 203 to its junction with Highway 395; south along Highway 395 to the point of beginning.

(B) Season: The season for additional hunt J-12 (Round Valley Junior Buck Hunt) shall open on the first Saturday in December and extend for 16 consecutive days.

(C) Bag and Possession Limit: One buck, forked horn (see subsection 351(a)) or better, per tag.

(D) Number of Tags: 10-20.

(E) Special Conditions:

1. Only junior license holders shall apply (see subsection 708(a)(2)).

2. Tagholders shall be accompanied by an adult chaperon 18 years of age or older while hunting.

(35) J-13 (Los Angeles Junior Either-Sex Deer Hunt).

(A) Area: In that portion of Los Angeles County within Zone D-11 (see subsection 360(a)(10)(A)).

(B) Season: The season for additional hunt J-13 (Los Angeles Junior Either-Sex Deer Hunt) shall open on the third Saturday in November and extend for 9 consecutive days.

(C) Bag and Possession Limit: One either-sex deer (see subsection 351(c)) per tag.

(D) Number of Tags: ~~40~~25-100.

(E) Special Conditions:

1. Only junior license holders shall apply (see subsection 708(a)(2)).

2. Tagholders shall be accompanied by an adult chaperon 18 years of age or older while hunting.

(36) J-14 (Riverside Junior Either-Sex Deer Hunt).

(A) Area: In that portion of Riverside County within Zone D-19 (see subsection 360(a)(17)(A)).

(B) Season: The season for additional hunt J-14 (Riverside Junior Either-Sex Deer Hunt) shall open on the third Saturday in November and extend for 9 consecutive days.

(C) Bag and Possession Limit: One either-sex deer (see subsection 351(c)) per tag.

(D) Number of Tags: ~~30~~15-75.

(E) Special Conditions:

1. Only junior license holders shall apply (see subsection 708(a)(2)).

2. Tagholders shall be accompanied by an adult chaperon 18 years of age or older while hunting.

(37) J-15 (Anderson Flat Junior Buck Hunt).

(A) Area: In that portion of Zone D-6 in Mariposa and Tuolumne counties lying within a line beginning at the intersection of Highway 140 and Bull Creek Road at Briceburg; north on Bull Creek Road (U.S. Forest Service Road 2S05) to Greeley Hill Road; west on Greeley Hill Road to Smith Station Road (County Route J20); north on Smith Station Road to Highway 120 (near Burch Meadow); east on Highway 120 to the Yosemite National Park Boundary (near Big Oak-Flat Ranger Station); southeast along the Yosemite National Park Boundary to Highway 140; west on Highway 140 to the Yosemite National Park Boundary; northwest along the Yosemite National Park Boundary to Highway 140 (at Redbud Campground); west on Highway 140 to the point of beginning.

(B) Season: The season for additional hunt J-15 (Anderson Flat Junior Buck Hunt) shall open on the fourth Saturday in November and extend for nine consecutive days.

(C) Bag and Possession Limit: One buck, forked horn (see subsection 351(a)) or better, per tag.

(D) Number of Tags: ~~10~~5-30.

(E) Special Conditions:

1. Only junior license holders shall apply (see subsection 708(a)(2)).

2. Tagholders shall be accompanied by an adult chaperon 18 years of age or older while hunting.

(38) J-16 (Bucks Mountain-Nevada City Junior Either-Sex Deer Hunt).

(A) Area: Excluding Butte, Colusa and Glenn Counties, in those portions of Nevada, Placer, Plumas, Sierra, Sutter and Yuba Counties within the area described as zone D-3 (see subsection 360(a)(4)(A)1).

(B) Season: The season for additional hunt J-16 (Bucks Mountain-Nevada City Junior Either-Sex Deer Hunt) shall be concurrent with the zone D-3 general season as defined in subsection 360(a)(4)(B).

(C) Bag and Possession Limit: One either-sex deer (see subsection 351(c)) per tag.

(D) Number of Tags: 10-75.

(E) Special Conditions:

1. Only junior license holders shall apply (see subsection 708(a)(2)).

2. Tagholders shall be accompanied by an adult chaperon 18 years of age or older while hunting.

(39) J-17 (Blue Canyon Junior Either-Sex Deer Hunt).

(A) Area: Excluding Colusa County, in those portions of Nevada, Placer, Sacramento, Sutter, Yolo and Yuba Counties within the area described as zone D-4 (see subsection 360(a)(4)(A)2).

(B) Season: The season for additional hunt J-17 (Blue Canyon Junior Either-Sex Deer Hunt) shall be concurrent with the zone D-4 general season as defined in subsection 360(a)(4)(B).

(C) Bag and Possession Limit: One either-sex deer (see subsection 351(c)) per tag.

(D) Number of Tags: 5-25.

(E) Special Conditions:

1. Only junior license holders shall apply (see subsection 708(a)(2)).

2. Tagholders shall be accompanied by an adult chaperon 18 years of age or older while hunting.

(40) J-18 (Pacific-Grizzly Flat Junior Either-Sex Deer Hunt).

(A) Area: Excluding Amador, Calaveras and Tuolumne Counties, in those portions of Alpine, El Dorado, Placer, Sacramento, San Joaquin, and Stanislaus counties within the area described as zone D-5 (see subsection 360(a)(4)(A)3).

(B) Season: The season for additional hunt J-18 (Pacific-Grizzly Flat Junior Either-Sex Deer Hunt) shall be concurrent with the zone D-5 general season as defined in subsection 360(a)(4)(B).

(C) Bag and Possession Limit: One either-sex deer (see subsection 351(c)) per tag.

(D) Number of Tags: 10-75.

(E) Special Conditions:

1. Only junior license holders shall apply (see subsection 708(a)(2)).

2. Tagholders shall be accompanied by an adult chaperon 18 years of age or older while hunting.

(41) J-19 (Zone X-7a Junior Either-Sex Deer Hunt).

(A) Area: In those portions of Lassen, Nevada, Plumas and Sierra Counties within the area described as zone X-7a (see subsection 360(b)(10)(A)).

(B) Season: The season for additional hunt J-19 (Zone X-7a Junior Either-Sex Deer Hunt) shall be concurrent with the zone X-7a general season as defined in subsection 360(b)(10)(B).

(C) Bag and Possession Limit: One either-sex deer (see subsection 351(c)) per tag.

(D) Number of Tags: ~~25~~10-40.

(E) Special Conditions:

1. Only junior license holders shall apply (see subsection 708(a)(2)).

2. Tagholders shall be accompanied by an adult chaperon 18 years of age or older while hunting.

(42) J-20 (Zone X-7b Junior Either-Sex Deer Hunt).

(A) Area: In those portions of Nevada, Placer and Sierra Counties within the area described as zone X-7b (see subsection 360(b)(11)(A)).

(B) Season: The season for additional hunt J-20 (Zone X-7b Junior Either-Sex Deer Hunt) shall be concurrent with the zone X-7b general season as described in subsection 360(b)(11)(B).

(C) Bag and Possession Limit: One either-sex deer (see subsection 351(c)) per tag.

(D) Number of Tags: 5-20.

(E) Special Conditions:

1. Only junior license holders shall apply (see subsection 708(a)(2)).

2. Tagholders shall be accompanied by an adult chaperon 18 years of age or older while hunting.

(43) J-21 (East Tehama Junior Either-Sex Deer Hunt).

(A) Area: In that portion of Tehama County within the area described as zone C-4 (see subsection 360(a)(3)(A)4.).

(B) Season: The season for additional hunt J-21 (East Tehama Junior Either-Sex Deer Hunt) shall open on the third Saturday in September and extend for 44 consecutive days.

(C) Bag and Possession Limit: One either-sex deer (see subsection 351(c)) per tag.

(D) Number of Tags: ~~50~~20-80.

(E) Special Conditions:

1. Only junior license holder shall apply (see subsection 708(a)(2)).

2. Tagholders shall be accompanied by an adult chaperon 18 years of age or older while hunting.

(44) Conditions for Special Hunts.

(A) When hunting on military reservations or private lands, hunters shall have in their possession a written permit signed by the landowner, which may specify where and when the permittee may hunt.

(B) When required, tagholders shall check in and check out of designated check stations.

(d) Fund-raising License Tags.

Fund-raising license tags (Golden Opportunity and Open Zone) for the taking of buck deer (as defined in subsection 351(a)) shall be offered for sale to raise funds for the management of deer through the Deer Herd Management Plan Implementation Program. Any resident or nonresident is eligible to purchase a fund-raising license tag. The sale price of a fund-raising license tag includes the fees for deer tag applications and for processing and issuing a hunting license. The purchaser shall be issued a hunting license and fund-raising license tag only after meeting the hunter education requirements for a hunting license.

(1) Golden Opportunity Tag.

(A) Area: Golden Opportunity tags shall be valid statewide.

(B) Season: Golden Opportunity tags shall be valid beginning on the second Saturday in July and extend through December 31.

(C) Bag and Possession Limit: One buck, forked horn (see subsection 351(a)) or better, per tag.

(D) Number of Tags: 5.

(E) Special Conditions:

1. The holder of a Golden Opportunity tag may take deer using methods authorized in sections 353 and 354.

2. Fund-raising license tagholders who receive a deer tag pursuant to Section 708(a)(2) shall be allowed to exchange that tag under the provisions of subsection 708(a)(2)(F). Tagholders shall not be entitled to obtain more than two (2) deer tags as described in subsection 708(a)(2).

3. Tagholders shall report to the Regional Patrol Chief at the appropriate Department of Fish and Game Regional Headquarters prior to hunting as to the time and area they intend to hunt.

(2) Open Zone Tag.

(A) Area: Open Zone tags shall be valid in the areas as described in sections 360 and 361.

(B) Season: Open Zone tags shall be valid during the authorized seasons described in sections 360 and 361.

(C) Bag and Possession Limit: One buck, forked horn (see subsection 351(a)) or better, per tag.

(D) Number of Tags: 5.

(E) Special Conditions:

1. The holder of an Open Zone tag shall meet any special conditions and take deer using the method of take described in sections 360 and 361.

2. Fund-raising license tagholders who receive a deer tag pursuant to Section 708(a)(2) shall be allowed to exchange that tag under the provisions of subsection 708(a)(2)(F). Tagholders shall not be entitled to obtain more than two (2) deer tags as described in subsection 708(a)(2).

3. Tagholders shall report to the Regional Patrol Chief at the appropriate Department of Fish and Game Regional Headquarters prior to hunting as to the time and area they intend to hunt.

Note: Authority: Sections 200, 202, 203, 220, 460, 3452, 3453 and 4334, Fish and Game Code. Reference: Sections 200, 202, 203, 203.1, 207, 458, 459, 460, 3452, 3453 and 4334, Fish and Game Code.

§ 361. Archery Deer Hunting.

(a) Archery Hunting With General Deer Zone Tags. Deer may be taken during the archery season only with archery equipment specified in Section 354 as follows:

(1) Zone A.

(A) Area: As described in subsection 360(a)(1)(A)1. through 2.

(B) Season: The archery deer season in Zone A-South Unit 110 and Zone A-North Unit 160 shall open on the second Saturday in July and extend for 23 consecutive days.

(C) Bag and Possession Limit: One buck, forked horn (see subsection 351(a)) or better per tag.

(2) B Zones.

(A) Zones B-1 through B-3, B-5 and B-6.

1. Area: As described in subsection 360(a)(2)(A).

2. Season: The archery deer season in Zones B-1 through B-3, B-5 and B-6 shall open on the third Saturday in August and extend for 23 consecutive days.

3. Bag and Possession Limit: One buck, forked horn (see subsection 351(a)) or better per tag.

(B) Zone B-4.

1. Area: As described in subsection 360(a)(2)(A)4.

2. Season: The archery deer season in Zone B-4 shall open on the fourth Saturday in July and extend for 23 consecutive days.

(3) C Zones (Note: see subsection 361(b) below for area-specific archery hunt A-1 (C Zones Archery Only Hunt)).

(4) D Zones.

(A) Zones D-3 through D-5.

1. Area: As described in subsection 360(a)(4)(A)1. through 3.

2. Season: The archery season in Zones D-3, D-4, and D-5 shall open on the third Saturday in August and extend for 23 days.

3. Bag and Possession Limit: One buck, forked horn (see subsection 351(a)) or better per tag.

4. Special Conditions: Hunters that possess a Zone D-3-5 tag may hunt in zones D-3, D-4, and D-5.

(B) Zones D-6 through D-10.

1. Area: As described in subsection 360(a)(5)(A) through (9)(A).

2. Season: The archery season in zones D-6 through D-10 shall open on the third Saturday in August and extend for 23 days.

3. Bag and Possession Limit: One buck, forked horn (see subsection 351(a)) or better per tag.

(C) Zones D-11, D-13 and D-15.

1. Area: As described in subsection 360(a)(10)(A), (12)(A) and (14)(A), respectively.

2. Season: The archery season in Zones D-11, D-13 and D-15 shall open on the first Saturday in September and extend for 23 days.

3. Bag and Possession Limit: One buck, forked horn (see subsection 351(a)) or better per tag.

4. Special Conditions: Hunters that possess a D-11, D-13, or D-15 tag may hunt in any, or all three of those zones.

(D) Zone D-12.

1. Area: As described in subsection 360(a)(11)(A).

2. Season: The archery season in Zone D-12 shall open on the first Saturday in October and extend for 23 consecutive days.

3. Bag and Possession Limit: One buck, forked horn (see subsection 351(a)) or better per tag.

(E) Zones D-14, D-16, D-17 and D-19.

1. Area: As described in subsection 360(a)(13)(A), (15)(A), (16)(A) and (17)(A), respectively.

2. Season: The archery season in zones D-14, D-16, D-17 and D-19 shall open on the first Saturday in September and extend for 23 consecutive days.

3. Bag and Possession Limit: One buck, forked horn (see subsection 351(a)) or better per tag.

(b) Archery Hunting With Area-specific Archery Tags. Deer may be taken only with archery equipment specified in Section 354, only during the archery seasons as follows:

(1) A-1 (C Zones Archery Only Hunt).

(A) Area:Shall include all of Zones C-1, C-2, C-3, and C-4 as described in subsections 360(a)(3)(A)1 through 4.

(B) Season:

1. Zone C-1. The archery season for Zone C-1 shall open on the third Saturday in August and extend for 16 consecutive days.

2. Zone C-2. The archery season for Zone C-2 shall open on the third Saturday in August and extend for 23 consecutive days.

3. Zone C-3. The archery season for Zone C-3 shall open on the third Saturday in August and extend for 23 consecutive days.

4. Zone C-4. The archery season for Zone C-4 shall open on the third Saturday in August and extend for 16 consecutive days.

(C) Bag and Possession Limit: One buck, forked horn (see subsection 351(a)) or better per tag.

(D) Number of Tags:~~2,045~~150-3,000 A-1 (C Zones Archery Only Hunt) tags are valid in Zones C-1, C-2, C-3, and C-4 only during the archery season as specified above in subsections 361(b)(1)(B)1 through 4.

(2) A-3 (Zone X-1 Archery Hunt)

(A) Area: As described in subsection 360(b)(1)(A).

(B) Season: The archery season for hunt A-3 (Zone X-1 Archery Hunt) shall open on the third Saturday in August and extend for 23 consecutive days.

(C) Bag and Possession Limit: One buck, forked horn (see subsection 351(a)) or better per tag.

(D) Number of Tags: ~~265~~50-1,000.

(3) A-4 (Zone X-2 Archery Hunt)

(A) Area: As described in subsection 360(b)(2)(A).

(B) Season: The archery season for hunt A-4 (Zone X-2 Archery Hunt) shall open on the third Saturday in August and extend for 23 consecutive days.

(C) Bag and Possession Limit: One buck, forked horn (see subsection 351(a)) or better per tag.

(D) Number of Tags: ~~10~~5-100.

(4) A-5 (Zone X-3a Archery Hunt).

(A) Area: As described in subsection 360(b)(3)(A).

(B) Season: The archery season for hunt A-5 (Zone X-3a Archery Hunt) shall open on the third Saturday in August and extend for 23 consecutive days.

(C) Bag and Possession Limit: One buck, forked horn (see subsection 351(a)) or better per tag.

(D) Number of Tags: ~~35~~10-300.

(5) A-6 (Zone X-3b Archery Hunt).

(A) Area: As described in subsection 360(b)(4)(A).

(B) Season: The archery season for hunt A-6 (Zone X-3b Archery Hunt) shall open on the third Saturday in August and extend for 23 consecutive days.

(C) Bag and Possession Limit: One buck, forked horn (see subsection 351(a)) or better per tag.

(D) Number of Tags: ~~90~~25-400.

(6) A-7 (Zone X-4 Archery Hunt).

(A) Area: As described in subsection 360(b)(5)(A).

(B) Season: The archery season for hunt A-7 (Zone X-4 Archery Hunt) shall open on the third Saturday in August and extend for 23 consecutive days.

(C) Bag and Possession Limit: One buck, forked horn (see subsection 351(a)) or better per tag.

(D) Number of Tags: ~~105~~25-400.

(7) A-8 (Zone X-5a Archery Hunt).

(A) Area: As described in subsection 360(b)(6)(A).

(B) Season: The archery season for hunt A-8 (Zone X-5a Archery Hunt) shall open on the third Saturday in August and extend for 23 consecutive days.

(C) Bag and Possession Limit: One buck, forked horn (see subsection 351(a)) or better per tag.

(D) Number of Tags: ~~20~~15-100.

(8) A-9 (Zone X-5b Archery Hunt).

(A) Area: As described in subsection 360(b)(7)(A).

(B) Season: The archery season for hunt A-9 (Zone X-5b Archery Hunt) shall open on the third Saturday in August and extend for 23 consecutive days.

(C) Bag and Possession Limit: One buck, forked horn (see subsection 351(a)) or better per tag.

(D) Number of Tags: 5-100.
(9) A-11 (Zone X-6a Archery Hunt).
(A) Area: As described in subsection 360(b)(8)(A).
(B) Season: The archery season for hunt A-11 (Zone X-6a Archery Hunt) shall open on the third Saturday in August and extend for 23 consecutive days.
(C) Bag and Possession Limit: One buck, forked horn (see subsection 351(a)) or better per tag.
(D) Number of Tags: ~~55~~10-200.
(10) A-12 (Zone X-6b Archery Hunt).
(A) Area: As described in subsection 360(b)(9)(A).
(B) Season: The archery season for hunt A-12 (Zone X-6b Archery Hunt) shall open on the third Saturday in August and extend for 23 consecutive days.
(C) Bag and Possession Limit: One buck, forked horn (see subsection 351(a)) or better per tag.
(D) Number of Tags: ~~175~~10-300.
(11) A-13 (Zone X-7a Archery Hunt).
(A) Area: As described in subsection 360(b)(10)(A).
(B) Season: The archery season for hunt A-13 (Zone X-7a Archery Hunt) shall open on the third Saturday in August and extend for 23 consecutive days.
(C) Bag and Possession Limit: One buck, forked horn (see subsection 351(a)) or better per tag.
(D) Number of Tags: ~~30~~10-200.
(12) A-14 (Zone X-7b Archery Hunt).
(A) Area: As described in subsection 360(b)(11)(A).
(B) Season: The archery season for hunt A-14 (Zone X-7b Archery Hunt) shall open on the third Saturday in August and extend for 23 consecutive days.
(C) Bag and Possession Limit: One buck, forked horn (see subsection 351(a)) or better per tag.
(D) Number of Tags: ~~20~~5-100.
(13) A-15 (Zone X-8 Archery Hunt).
(A) Area: As described in subsection 360(b)(12)(A).
(B) Season: The archery season for hunt A-15 (Zone X-8 Archery Hunt) shall open on the third Saturday in August and extend for 23 consecutive days.
(C) Bag and Possession Limit: One buck, forked horn (see subsection 351(a)) or better per tag.
(D) Number of Tags: ~~25~~5-100.
(14)A-16 (Zone X-9a Archery Hunt).
(A) Area: As described in subsection 360(b)(13)(A).
(B) Season: The archery season for hunt A-16 (Zone X-9a Archery Hunt) shall open on the third Saturday in August and extend for 23 consecutive days.
(C) Bag and Possession Limit: One buck, forked horn (see subsection 351(a)) or better per tag.
(D) Number of Tags: ~~130~~50-500.
(15)A-17 (Zone X-9b Archery Hunt).
(A) Area: As described in subsection 360(b)(14)(A).
(B) Season: The archery season for hunt A-17 (Zone X-9b Archery Hunt) shall open on the third Saturday in August and extend for 23 consecutive days.
(C) Bag and Possession Limit: One buck, forked horn (see subsection 351(a)) or better per tag.
(D) Number of Tags: ~~300~~50-500.
(16) A-18 (Zone X-9c Archery Hunt).
(A) Area: As described in subsection 360(b)(15)(A).
(B) Season: The archery season forhunt A-18 (Zone X-9cArchery Hunt)shall open on the third Saturday in August and extend for 23 consecutive days.
(C) Bag and Possession Limit: One buck, forked horn (see subsection 351(a)) or better per tag.
(D) Number of Tags: ~~350~~50-500.
(17) A-19 (Zone X-10 Archery Hunt).
(A) Area: As described in subsection 360(b)(16)(A).
(B) Season: The archery season forhunt A-19 (Zone X-10Archery Hunt)shall open on the third Saturday in August and extend for 16 consecutive days.
(C) Bag and Possession Limit: One buck, forked horn (see subsection 351(a)) or better per tag.
(D) Number of Tags: ~~120~~25-200.
(18) A-20 (Zone X-12 Archery Hunt).

(A) Area: As described in subsection 360(b)(17)(A).

(B) Season: The archery season forhunt A-20 (Zone X-12Archery Hunt)shall open on the third Saturday in August and extend for 23 consecutive days.

(C) Bag and Possession Limit: One buck, forked horn (see subsection 351(a)) or better per tag.

(D) Number of Tags: ~~115~~50-500.

(19) A-21 (Anderson Flat Archery Buck Hunt).

(A) Area: In that portion of hunt Zone D-6 in Mariposa and Tuolumne counties lying within a line beginning at the intersection of Highway 140 and Bull Creek Road at Briceburg; north on Bull Creek Road (U.S. Forest Service Road 2S05) to Greeley Hill Road; west on Greeley Hill Road to Smith Station Road (County Route J20); north on Smith Station Road to Highway 120 (near Burch Meadow); east on Highway 120 to the Yosemite National Park Boundary (near Big Oak-Flat Ranger Station); southeast along the Yosemite National Park Boundary to Highway 140; west on Highway 140 to the Yosemite National Park Boundary; northwest along the Yosemite National Park Boundary to Highway 140 (at Redbud Campground); west on Highway 140 to the point of beginning.

(B) Season: The season for hunt A-21 (Anderson Flat Archery Buck Hunt) shall open on the second Saturday in November and extend for 14 consecutive days.

(C) Bag and Possession Limit: One buck, forked horn (see subsection 351(a)) or better, per tag.

(D) Number of Tags: 25-100.

(20) A-22 (San Diego Archery Either-Sex Deer Hunt).

(A) Area: That portion of San Diego County within Zone D-16 (see subsection 360(a)(15)(A)).

(B) Season: The season for hunt A-22 (San Diego Archery Either-Sex Deer Hunt) shall open on the first Saturday in September and extend for 44 consecutive days, and reopen on the third Saturday in November and extend through December 31.

(C) Bag and Possession Limit: One either-sex deer (see subsection 351(c)) per tag.

(D) Number of Tags: ~~1,000~~200-1,500.

(21) A-24 (Monterey Archery Either-Sex Deer Hunt).

(A) Area: All of Monterey County, except Fort Ord Military Reservation.

(B) Season: The season for hunt A-24 (Monterey Archery Either-Sex Deer Hunt) shall open on the second Saturday in October and extend for 30 consecutive days.

(C) Bag and Possession Limit: One either-sex deer (see subsection 351(c)) per tag.

(D) Number of Tags: ~~100~~25-200.

(22)A-25 (Lake Sonoma Archery Either-Sex Deer Hunt).

(A) Area: That portion of Sonoma County within the boundaries of the Lake Sonoma Area, U.S. Army Corps of Engineers (COE) property described as follows: Beginning at the intersection of Hot Springs Road and the COE boundary; east and south along the boundary line to the intersection with Brush Creek; west along the north bank of Brush Creek (shoreline) to the Dry Creek arm of Lake Sonoma; south along the shoreline of the Dry Creek arm to Smittle Creek; north along the COE property line to Dry Creek; east along the COE boundary across Cherry Creek, Skunk Creek, and Yorty Creek to the point of beginning.

(B) Season: The season for hunt A-25 (Lake Sonoma Archery Either-Sex Deer Hunt) shall be open on Saturdays, Sundays and Mondays only, beginning on the first Saturday in October and extending for 24 consecutive days.

(C) Bag and Possession Limit: One either-sex deer (see subsection 351(c)) per tag.

(D) Number of Tags: ~~35~~20-75.

(E) Special Conditions:

1. The use of dogs is prohibited.

2. Boats are required for all areas west of Cherry Creek (some 2/3 0f the hunt area). Only cartop boats are allowed to launch from the Yorty Creek access.

(23)A-26 (Bass Hill Archery Buck Hunt).

(A) Area: That portion of Lassen County within the area described as Zone X-6a (see subsection 360(b)(8)(A)).

(B) Season: The season for hunt A-26 (Bass Hill Archery Buck Hunt) shall open on the third Saturday in November and extend for 23 consecutive days.

(C) Bag and Possession Limit: One buck, forked horn (see subsection 351(a)) or better, per tag.

(D) Number of Tags: ~~30~~10-100.

(24)A-27 (Devil's Garden Archery Buck Hunt).

(A) Area: That portion of Modoc County within a line beginning at the intersection of the Malin Road (Modoc County 114) and the California/Oregon state line; east along the state line to the Crowder Flat Road; south along the Crowder Flat Road to the Blue Mountain Road (Modoc County 136); west on the Blue Mountain Road to the Blue Mountain-Mowitz Butte-Ambrose Road; south on the Blue Mountain-Mowitz Butte-Ambrose Road to Highway 139; north on Highway 139 to the Malin Road; north on the Malin Road to the point of beginning.

(B) Season: The season for hunt A-27 (Devil's Garden Archery Buck Hunt) shall open on the fourth Saturday in October and extend for 16 consecutive days.

(C) Bag and Possession Limit: One buck, forked horn (see subsection 351(a)) or better, per tag.

(D) Number of Tags: ~~10~~5-75.

(25)A-30 (Covelo Archery Buck Hunt).

(A) Area: That portion of Mendocino County within a line beginning at the intersection of Highway 101 and the Humbolt-Mendocino county line; east along the Humbolt-Mendocino county line to the Trinity-Mendocino county line; east along Trinity-Mendocino county line to the Mendocino-Tehama county line; south on the Mendocino-Tehama county line to the Mendocino-Glenn county line; south on the Mendocino-Glenn county line to the Mendocino-Lake county line; west and south on the Mendocino-Lake county line to the Main Eel River; west and north on the Main Eel River to the Hearst-Willits Road; southwest on the Hearst-Willits Road to Commercial Avenue; west on Commercial Avenue to Highway 101; north on Highway 101 to the point of beginning.

(B) Season: The season for hunt A-30 (Covelo Archery Buck Hunt) shall open on the second Saturday in November and extend for sixteen consecutive days.

(C) Bag and Possession Limit: One buck, forked horn (see subsection 351(a)) or better, per tag.

(D) Number of Tags: ~~40~~20-100.

(26)A-31 (Los Angeles Archery Either-Sex Deer Hunt).

(A) Area: That portion of Los Angeles County within Zone D-11 (see subsection 360(a)(10)(A)).

(B) Season: The season for hunt A-31 (Los Angeles Archery Either-Sex Deer Hunt) shall open on the fourth Saturday in September and extend through December 31.

(C) Bag and Possession Limit: One either-sex deer (see subsection 351(b)) per tag.

(D) Number of Tags: ~~1,000~~200-1,500.

(27) A-32 (Ventura/Los Angeles Late Season Archery Either-Sex Deer Hunt).

(A) Area: In those portions of Los Angeles and Ventura counties within the area described as the A Zone (see subsection 360(a)(1)(A)).

(B) Season: The season for hunt A-32 (Ventura/Los Angeles Late Season Archery Either-Sex Deer Hunt) shall open on the second Saturday in November and extend for 23 consecutive days.

(C) Bag and Possession Limit: One either-sex deer (see subsection 351(~~b~~c)) per tag.

(D) Number of Tags: ~~250~~50-300.

(28) A-33 (Fort Hunter Liggett Late Season Archery Either-Sex Deer Hunt).

(A) Area: That portion of Monterey County lying within the exterior boundaries of the Hunter Liggett Military Reservation, except as restricted by the Commanding Officer.

(B) Season: The season for hunt A-33 (Fort Hunter Liggett Late Season Archery Either-Sex Deer Hunt) shall be open on Saturdays, Sundays and holidays only beginning the first Saturday in October and continuing through the Veteran's Day holiday, except if rescheduled by the Commanding Officer with Department concurrence between the season opener and December 31.

(C) Bag and Possession Limit: One either-sex deer (see subsection 351(c)) per tag.

(D) Number of Tags: 50 (25 military and 25 general public).

(E) Special Conditions: In the event the Commanding Officer cancels the hunt, A-33 tagholders will only have the option of exchanging the unused tag for any remaining deer tag or receiving a refund.

(c) Archery Hunting with Archery Only Tags. Deer may be taken only with archery equipment specified in Section 354, during the archery seasons and general seasons as follows:

(1) Number of Archery Only Tags Permitted. A person may obtain an archery only tag using a one-deer tag application and a second archery only tag using a second deer tag application.

(2) Zones in Which Archery Only Tags are Valid. An archery only tag is valid for hunt G-10, and during the archery season and general season in all zones except C-1 through C-4 and X-1 through X-12.

(3) Areas: As described in subsections 360(a) and (c).

(4) Seasons: The archery season and general seasons are provided in subsection 361(a) above and in subsections 360(a) and (c).

(5) Bag and Possession Limit: All bag and possession limits per zone are the same as those described in subsections 360(a) and (c).

(d) Hunting Area Limitations. Archers not in possession of an archery only tag may hunt only in the zone, zones, or areas for which they have a general tag or an area-specific archery tag. (Refer to subsection 361(c)(2) for zones in which archery only tags are valid).

(e) Crossbow Prohibition. Except as provided in subsection 354(j), crossbows may not be used during any archery season or during the general season when using an archery only tag.

Note: Authority cited: Sections 200, 202, 203, 220 and 4370, Fish and Game Code. Reference: Sections 200, 202, 203, 203.1, 207 and 4370, Fish and Game Code.

APPENDIX 2

ZONE SPECIFIC HUNT ALTERNATIVE TABLES

Appendix tables 2-1 through 2-32 include zone specific hunt alternatives for the Proposed Project, High Kill Alternative 2, and Low Kill Alternative 3. In the case of Zones B-1 through B-6; C-1 through C-4; D-3 through D-5; and D-11, D-13 and D-15 they are combined. Each zone/hunt is described in detail in Appendix 1 as the Proposed Project. The overall effect of the Proposed Project, High Kill and Low Kill Alternatives are analyzed and presented in Appendix 3.

A ZONE HUNT ALTERNATIVES

Appendix 2-1 2007 A Zone Hunt Alternatives for Proposed Project, High Kill and Low Kill Alternatives			
Hunts	Proposed Project (Alternative 1)	High Kill (Alternative 2)	Low Kill (Alternative 3)
Zone A	Tag range 30,000-65,000	Lengthen season to 51 consecutive days	Shorten season to 37 consecutive days
A-24	Tag range 25-200	Lengthen season to 37 consecutive days	Shorten season to 23 consecutive days
A-25	Tag range 20-75	Lengthen season to 30 consecutive days	Shorten season to 16 consecutive days
A-32	Tag range 50-300	Lengthen season to 30 consecutive days	Shorten season to 16 consecutive days
A-33	Tag quota 50 (25 military and 25 general public)	No change	No change
G-8	Tag quota 20 (10 military and 10 general public)	No change	No change
G-9	Tag quota 30 (15 military/ 15 general public)	No change	No change
G-11	Tag quota 500 (military and Department of Defense employees only)	No change	No change
G-21	Tag range 25-100	Lengthen season to 30 consecutive days	Shorten season to 16 consecutive days
J-1	Tag range 10-25 (either-sex)	Lengthen season to 9 consecutive days	Modify bag to antlerless deer
J-10	Tag quota 85 (10 military and 75 general public)	No change	No change
MA-1	Tag range 20-150	Lengthen season to 23 consecutive days	Shorten season to 9 consecutive days
MA-3	Tag range 20-150	Lengthen season to 23 consecutive days	Shorten season to 9 consecutive days
PLMs	Tag range: 50-150 buck, 5-100 antlerless, 50-150 either-sex	Tag range: 151-300 buck, 101-300 antlerless, 151-300 either-sex	Tag range: 0-49 buck, 0-5 antlerless, 0-49 either-sex

B ZONE HUNT ALTERNATIVES

Appendix 2-2 2007 B Zones Hunt Alternatives for Proposed Project, High Kill and Low Kill Alternatives			
Hunts	Proposed Project (Alternative 1)	High Kill (Alternative 2)	Low Kill (Alternative 3)
B Zones	Tag range 35,000-65,000	Tag range 65,001-70,000	Tag range 25,000-34,999
Zone B-1	Season of 37 consecutive days	Lengthen season to 44 consecutive days	Shorten season to 30 consecutive days
Zone B-2	Season of 37 consecutive days	Lengthen season to 44 consecutive days	Shorten season to 30 consecutive days
Zone B-3	Season of 37 consecutive days	Lengthen season to 44 consecutive days	Shorten season to 30 consecutive days
Zone B-4	Season of 37 consecutive days	Lengthen season to 44 consecutive days	Shorten season to 30 consecutive days
Zone B-5	Season of 37 consecutive days	Lengthen season to 44 consecutive days	Shorten season to 30 consecutive days
Zone B-6	Season of 30 consecutive days	Lengthen season to 37 consecutive days	Shorten season to 23 consecutive days
A-30	Tag range 20-100	Lengthen season to 23 consecutive days	Shorten season to 9 consecutive days
J-4	Tag range 15-50	Lengthen season to 16 consecutive days	Shorten season to 2 consecutive days
M-11	Tag range 20-200	Lengthen season to 23 consecutive days	Shorten season to 9 consecutive days
PLMs	Tag range: 150-350 buck; 50-200 antlerless; 50-200 either-sex	Tag range: 351-500 buck; 201-300 antlerless, 201-300 either-sex	Tag range: 10-149 buck, 10-49 antlerless, 10-49 either-sex

C ZONE HUNT ALTERNATIVES

Appendix 2-3 2007 C Zones Hunt Alternatives for Proposed Project, High Kill and Low Kill Alternatives			
Hunts	Proposed Project (Alternative 1)	High Kill (Alternative 2)	Low Kill (Alternative 3)
C Zone	Tag range 5,000-15,000	Tag range 15,001-20,000	Tag range 2,000-4,999
Zone C-1	Season beginning third Saturday in September and extending for 30 consecutive days	Lengthen season to 37 consecutive days	Shorten season to 23 consecutive days
Zone C-2	Season beginning third Saturday in September and extending for 37 consecutive days	Lengthen season to 44 consecutive days	Shorten season to 30 consecutive days
Zone C-3	Season beginning third Saturday in September and extending for 37 consecutive days	Lengthen season to 44 consecutive days	Shorten season to 30 consecutive days
Zone C-4	Season beginning third Saturday in September and extending for 16 consecutive days	Lengthen season to 23 consecutive days	Shorten season to 9 consecutive days
A-1	Tag range 150-3,000	Lengthen seasons in zones C-1 and C-4 to 23 consecutive days	Shorten seasons in zones C-1 through C-4 to 9 consecutive days
G-1	Tag range 500-5,000 and 9 consecutive day season	Lengthen season to 16 consecutive days	Move 9 consecutive day season two weeks earlier
J-3	Tag range 15-30	Lengthen season to 9 consecutive days	Tag range 5-14
J-21	Tag range 20-80	Move season beginning two weeks later	Move season beginning two weeks earlier
PLMs	Tag range 50-100 buck, 5-50 antlerless, 5-50 either-sex	Tag range 101-300 buck, 51-100 antlerless, 51-100 either-sex	Tag range 5-49 buck, 0-4 antlerless, 0-4 either-sex

D ZONE HUNT ALTERNATIVES

Appendix 2-4 2007 Zones D3, D-4 and D-5 Hunt Alternatives for Proposed Project, High Kill and Low Kill Alternatives			
Hunts	Proposed Project (Alternative 1)	High Kill (Alternative 2)	Low Kill (Alternative 3)
Zones D-3, D-4, and D-5 Combined	Tag range 30,000-40,000	Tag range 40,001-45,000	Tag range 25,000-29,999
Zone D-3	Season beginning fourth Saturday in September and extending for 37 consecutive days	Lengthen season to 44 consecutive days	Shorten season to 23 consecutive days
Zone D-4	Season beginning fourth Saturday in September and extending for 37 consecutive days	Lengthen season to 44 consecutive days	Shorten season to 23 consecutive days
Zone D-5	Season beginning fourth Saturday in September and extending for 37 consecutive days	Lengthen season to 44 consecutive days	Shorten season to 23 consecutive days
Late Season Archery Hunt in Zone D-3	No hunt	Sixteen consecutive day season beginning the Saturday after the close of general season and tag range of 51-100 tags	Nine consecutive day season beginning the Saturday after the close of general season and tag range of 25-50 tags
Late Season Archery Hunt in Zone D-4	No hunt	Sixteen consecutive day season beginning the Saturday after the close of general season and tag range of 21-50 tags	Nine consecutive day season beginning the Saturday after the close of general season and tag range of 10-20 tags
Late Season Archery Hunt in Zone D-5	No hunt	Sixteen consecutive day season beginning the Saturday after the close of general season and tag range of 51-100 tags	Nine consecutive day season beginning the Saturday after the close of general season and tag range of 25-50 tags
G-7	20 military only tags	No change	No change
G-12	Tag range 10-50	Lengthen season to 16 consecutive days	Shorten season to 2 consecutive days

Appendix 2-4 2007 Zones D3, D-4 and D-5 Hunt Alternatives for Proposed Project, High Kill and Low Kill Alternatives			
Hunts	Proposed Project (Alternative 1)	High Kill (Alternative 2)	Low Kill (Alternative 3)
G-19	Tag range 10-50	Tag range 66-100	Move season close date from December 31 to November 30
J-8	Tag range 10-20	Lengthen season to 30 consecutive days	Shorten season to 16 consecutive days
J-9	Tag range 5-10	Lengthen season to 16 consecutive days	Shorten season to 2 consecutive days
J-16	Tag range 10-75 and season concurrent with 37 day general season	Season beginning first Saturday in November and extending 37 consecutive days	Season beginning fourth Saturday in September and extending 23 consecutive days
J-17	Tag range 5-25 and season concurrent with 37 day general season	Season beginning first Saturday in November and extending 37 consecutive days	Season beginning fourth Saturday in September and extending 23 consecutive days
J-18	Tag range 10-75 and season concurrent with 37 day general season	Season beginning first Saturday in November and extending 37 consecutive days	Season beginning fourth Saturday in September and extending 23 consecutive days
PLMs	Tag range: 10-100 buck, 50-200 antlerless, 25-100 either-sex	Tag range: 101-200 buck, 201-300 antlerless, 101-200 either-sex	Tag range: 0-9 buck, 0-49 antlerless, 0-24 either-sex

Appendix 2-5 2007 Zone D-6 Hunt Alternatives for Proposed Project, High Kill and Low Kill Alternatives			
Hunts	Proposed Project (Alternative 1)	High Kill (Alternative 2)	Low Kill (Alternative 3)
Zone D-6	Tag range 6,000-16,000	Lengthen season to 51 consecutive days	Shorten season to 37 consecutive days
A-21	Tag range 25-100	Lengthen season to 23 consecutive days	Shorten season to 9 consecutive days
G-37	Tag range 25-50	Lengthen season to 16 consecutive days	Shorten season to 2 consecutive days
J-15	Tag range 5-30	Lengthen season to 16 consecutive days	Shorten season to 2 consecutive days

Appendix 2-6 2007 Zone D-7 Hunt Alternatives for Proposed Project, High Kill and Low Kill Alternatives			
Hunts	Proposed Project (Alternative 1)	High Kill (Alternative 2)	Low Kill (Alternative 3)
Zone D-7	Tag range 4,000-10,000	Lengthen season to 51 consecutive days	Shorten season to 37 consecutive days

Appendix 2-7 2007 Zone D-8 Hunt Alternatives for Proposed Project, High Kill and Low Kill Alternatives			
Hunts	Proposed Project (Alternative 1)	High Kill (Alternative 2)	Low Kill (Alternative 3)
Zone D-8	Tag range 5,000-10,000	Lengthen season to 37 consecutive days	Shorten season to 23 consecutive days
G-6	Tag range 25-100	Lengthen season to 16 consecutive days	Shorten season to 2 consecutive days

Appendix 2-8 2007 Zone D-9 Hunt Alternatives for Proposed Project, High Kill and Low Kill Alternatives			
Hunts	Proposed Project (Alternative 1)	High Kill (Alternative 2)	Low Kill (Alternative 3)
Zone D-9	Tag range 1,000-2,500	Lengthen season to 37 consecutive days	Shorten season to 23 consecutive days

Appendix 2-9 2007 Zone D-10 Hunt Alternatives for Proposed Project, High Kill and Low Kill Alternatives			
Hunts	Proposed Project (Alternative 1)	High Kill (Alternative 2)	Low Kill (Alternative 3)
Zone D-10	Tag range 400-800	Lengthen season to 37 consecutive days	Shorten season to 23 consecutive days
PLMs	Tag range: 100-300 buck, 50-200 antlerless, 100-200 either-sex	Tag range: 301-400 buck, 201-300 antlerless, 201-300 either-sex	Tag range: 10-99 buck, 10-49 antlerless, 10-99 either-sex

Appendix 2-10 2007 Zone D-11, D-13 and D-15 Hunt Alternatives for Proposed Project, High Kill and Low Kill Alternatives			
Hunts	Proposed Project (Alternative 1)	High Kill (Alternative 2)	Low Kill (Alternative 3)
D-11	Tag range 2,500-6,000	Tag range 6,001-7,000	Tag range 1,500-2,499
D-13	Tag range 2,000-5,000	Tag range 5,001-6,000	Tag range 1,500-1,999
D-15	Tag range 500-2,000	Tag range 2,001-2,500	Tag range 100-499
D-11	Archery Season - First Saturday in September	Archery Season - Second Saturday in September	Archery Season -First Saturday in August
D-13	Archery Season - First Saturday in September	Archery Season - Second Saturday in September	Archery Season -First Saturday in August

Appendix 2-10 2007 Zone D-11, D-13 and D-15 Hunt Alternatives for Proposed Project, High Kill and Low Kill Alternatives			
Hunts	Proposed Project (Alternative 1)	High Kill (Alternative 2)	Low Kill (Alternative 3)
D-15	Archery Season - First Saturday in September	Archery Season - Second Saturday in September	Archery Season -First Saturday in August
A-31	Tag range 200-1,500	Tag range 100-199	Tag range 1,501-2,500
G-10	Tag quota 400 military only	No change	No change
J-13	Tag range 25-100	Lengthen season to 15 consecutive days	Shorten season to 3 consecutive days
M-7	Tag range 50-150	Lengthen season to 23 consecutive days	Tag range 10-49
PLMs	Tag range: 50-100 buck, 50-200 antlerless, 50-300 either-sex	Tag range: 101-200 buck, 201-300 antlerless, 301-400 either-sex	Tag range: 10-49 buck, 10-49 antlerless, 10-49 either-sex

Appendix 2-11 2007 Zone D-12 Hunt Alternatives for Proposed Project, High Kill and Low Kill Alternatives			
Hunts	Proposed Project (Alternative 1)	High Kill (Alternative 2)	Low Kill (Alternative 3)
Zone D-12	Tag range 100-1,500	Lengthen season to 30 consecutive days	Shorten season to 16 consecutive days

Appendix 2-12 2007 Zone D-14 Hunt Alternatives for Proposed Project, High Kill and Low Kill Alternatives			
Hunts	Proposed Project (Alternative 1)	High Kill (Alternative 2)	Low Kill (Alternative 3)
Zone D-14	Tag range 2,000-3,500	Lengthen season to 37 consecutive days	Shorten season to 23 consecutive days
J-11	Tag range 10-50	Lengthen season to 16 consecutive days	Shorten season to 2 consecutive days
PLMs	Tag range 10-20 buck	Tag range 21-30 buck	Tag range 0-9 buck

Appendix 2-13 2007 Zone D-16 Hunt Alternatives for Proposed Project, High Kill and Low Kill Alternatives			
Hunts	Proposed Project (Alternative 1)	High Kill (Alternative 2)	Low Kill (Alternative 3)
Zone D-16	Tag range 1,000-3,500	Lengthen season to 37 consecutive days	Shorten season to 23 consecutive days
A-22	Tag range 200-1,500	Open the season on the last Saturday in August for 51 consecutive days	Eliminate second half of season
G-13	Tag range 50-300	Lengthen season to 30 consecutive days	Shorten season to 16 consecutive days
M-6	Tag range 25-100	Open the season 2 weeks earlier on the first Saturday in December	Open season 1 week later on the fourth Saturday in December

Appendix 2-14 2007 Zone D-17 Hunt Alternatives for Proposed Project, High Kill and Low Kill Alternatives			
Hunts	Proposed Project (Alternative 1)	High Kill (Alternative 2)	Low Kill (Alternative 3)
Zone D-17	Tag range 100-800	Lengthen season to 30 consecutive days	Shorten season to 16 consecutive days

Appendix 2-15 2007 Zone D-19 Hunt Alternatives for Proposed Project, High Kill and Low Kill Alternatives			
Hunts	Proposed Project (Alternative 1)	High Kill (Alternative 2)	Low Kill (Alternative 3)
Zone D-19	Tag range 500-2,000	Lengthen season to 37 consecutive days	Shorten season to 23 consecutive days
J-14	Tag range 15-75	Lengthen season to 16 consecutive days	Shorten season to 2 consecutive days

X ZONE HUNT ALTERNATIVES

Appendix 2-16 2007 Zone X-1 Hunt Alternatives for Proposed Project, High Kill and Low Kill Alternatives			
Hunts	Proposed Project (Alternative 1)	High Kill (Alternative 2)	Low Kill (Alternative 3)
Zone X-1	Tag range 1,000-6,000	Move season opener 2 weeks later	Move season opener 2 weeks earlier
Section 554	Tag range 0-100		
A-3	Tag range 50-1,000	Lengthen season to 30 consecutive days	Shorten season to 16 consecutive days
PLMs	Tag range 5-10 buck	Tag range 11-20 buck	Tag range 1-4 buck

Appendix 2-17 2007 Zone X-2 Hunt Alternatives for Proposed Project, High Kill and Low Kill Alternatives			
Hunts	Proposed Project (Alternative 1)	High Kill (Alternative 2)	Low Kill (Alternative 3)
Zone X-2	Tag range 50-500	Lengthen season to 23 consecutive days	Shorten season to 9 consecutive days
Section 554	Tag range 0-20		
A-4	Tag range 5-100	Lengthen season to 30 consecutive days	Shorten season to 16 consecutive days
A-27	Tag range 5-75	Lengthen season to 23 consecutive days	Shorten season to 9 consecutive days
M-9	Tag range 5-100	Lengthen season to 23 consecutive days	Shorten season to 9 consecutive days
PLMs	Tag range 5-10 buck	Tag range 11-20 buck	Tag range 1-4 buck

Appendix 2-18 2007 Zone X-3a Hunt Alternatives for Proposed Project, High Kill and Low Kill Alternatives			
Hunts	Proposed Project (Alternative 1)	High Kill (Alternative 2)	Low Kill (Alternative 3)
Zone X-3a	Tag range 100-1,200	Lengthen season to 23 consecutive days	Shorten season to 9 consecutive days
Section 554	Tag range 0-50		
A-5	Tag range 10-300	Lengthen season to 30 consecutive days	Shorten season to 16 consecutive days
PLMs	Tag range: 10-50 buck, 10-100 antlerless	Tag range: 51-75 buck, 101-200 antlerless	Tag range: 1-9 buck, 1-9 antlerless

Appendix 2-19 2007 Zone X-3b Hunt Alternatives for Proposed Project, High Kill and Low Kill Alternatives			
Hunts	Proposed Project (Alternative 1)	High Kill (Alternative 2)	Low Kill (Alternative 3)
Zone X-3b	Tag range 200-3,000	Lengthen season to 23 consecutive days	Shorten season to 9 consecutive days
Section 554	Tag range 0-50		
A-6	Tag range 25-400	Lengthen season to 30 consecutive days	Shorten season to 16 consecutive days
PLMs	Tag range: 10-50 buck, 10-100 antlerless, 10-100 either-sex	Tag range: 51-75 buck, 101-200 antlerless, 101-200 either-sex	Tag range: 1-9 buck, 1-9 antlerless, 1-9 either-sex

Appendix 2-20 2007 Zone X-4 Hunt Alternatives for Proposed Project, High Kill and Low Kill Alternatives			
Hunts	Proposed Project (Alternative 1)	High Kill (Alternative 2)	Low Kill (Alternative 3)
Zone X-4	Tag range 100-1,200	Lengthen season to 23 consecutive days	Shorten season to 9 consecutive days
Section 554	Tag range 0-50		
A-7	Tag range 25-400	Lengthen season to 30 consecutive days	Shorten season to 16 consecutive days
PLMs	Tag range 5-10 buck	Tag range 11-20 buck	Tag range 1-4 buck

Appendix 2-21 2007 Zone X-5a Hunt Alternatives for Proposed Project, High Kill and Low Kill Alternatives			
Hunts	Proposed Project (Alternative 1)	High Kill (Alternative 2)	Low Kill (Alternative 3)
Zone X-5a	Tag range 25-200	Lengthen season to 23 consecutive days	Shorten season to 9 consecutive days
Section 554	Tag range 0-20		
A-8	Tag range 15-100	Lengthen season to 30 consecutive days	Shorten season to 16 consecutive days
M-4	Tag range 5-50	Lengthen season to 16 consecutive days	Shorten season to 2 consecutive days
PLMs	Tag range: 10-50 buck, 10-50 antlerless	Tag range: 51-75 buck, 51-200 antlerless	Tag range: 0-9 buck, 0-9 antlerless

Appendix 2-22 2007 Zone X-5b Hunt Alternatives for Proposed Project, High Kill and Low Kill Alternatives			
Hunts	Proposed Project (Alternative 1)	High Kill (Alternative 2)	Low Kill (Alternative 3)
Zone X-5b	Tag range 50-500	Lengthen season to 23 consecutive days	Shorten season to 9 consecutive days
Section 554	Tag range 0-20		
A-9	Tag range 5-100	Lengthen season to 30 consecutive days	Shorten season to 16 consecutive days
M-5	Tag range 5-50	Lengthen season to 16 consecutive days	Shorten season to 2 consecutive days
PLMs	Tag range: 10-75 buck, 10-100 antlerless	Tag range: 76-100 buck, 101-200 antlerless	Tag range: 0-9 buck, 0-9 antlerless

Appendix 2-23 2007 Zone X-6a Hunt Alternatives for Proposed Project, High Kill and Low Kill Alternatives			
Hunts	Proposed Project (Alternative 1)	High Kill (Alternative 2)	Low Kill (Alternative 3)
Zone X-6a	Tag range 100-1,200	Lengthen season to 23 consecutive days	Shorten season to 9 consecutive days
Section 554	Tag range 0-25		
A-11	Tag range 10-200	Lengthen season to 30 consecutive days	Shorten season to 16 consecutive days
A-26	Tag range 10-100	Lengthen season to 30 consecutive days	Shorten season to 16 consecutive days
M-8	Tag range 5-50	Lengthen season to 16 consecutive days	Shorten season to 2 consecutive days

Appendix 2-24 2007 Zone X-6b Hunt Alternatives for Proposed Project, High Kill and Low Kill Alternatives			
Hunts	Proposed Project (Alternative 1)	High Kill (Alternative 2)	Low Kill (Alternative 3)
Zone X-6b	Tag range 100-1,200	Lengthen season to 23 consecutive days	Shorten season to 9 consecutive days
Section 554	Tag range 0-25		
A-12	Tag range 10-300	Lengthen season to 30 consecutive days	Shorten season to 16 consecutive days
M-3	Tag range 10-75	Lengthen season to 16 consecutive days	Shorten season to 2 consecutive days

Appendix 2-25 2007 Zone X-7a Hunt Alternatives for Proposed Project, High Kill and Low Kill Alternatives			
Hunts	Proposed Project (Alternative 1)	High Kill (Alternative 2)	Low Kill (Alternative 3)
Zone X-7a	Tag range 50-500	Lengthen season to 23 consecutive days	Shorten season to 9 consecutive days
Section 554	Tag range 0-25		
A-13	Tag range 10-200	Lengthen season to 30 consecutive days	Shorten season to 16 consecutive days
J-19	Tag range 10-40 and season concurrent with 16 day general season	Lengthen season to 23 consecutive days	Shorten season to 9 consecutive days

Appendix 2-26 2007 Zone X-7b Hunt Alternatives for Proposed Project, High Kill and Low Kill Alternatives			
Hunts	Proposed Project (Alternative 1)	High Kill (Alternative 2)	Low Kill (Alternative 3)
Zone X-7b	Tag range 25-200	Lengthen season to 23 consecutive days	Shorten season to 9 consecutive days
Section 554	Tag range 0-25		
A-14	Tag range 5-100	Lengthen season to 30 consecutive days	Shorten season to 16 consecutive days
J-20	Tag range 5-20 and season concurrent with 16 day general season	Lengthen season to 23 consecutive days	Shorten season to 9 consecutive days

Appendix 2-27 2007 Zone X-8 Hunt Alternatives for Proposed Project, High Kill and Low Kill Alternatives			
Hunts	Proposed Project (Alternative 1)	High Kill (Alternative 2)	Low Kill (Alternative 3)
Zone X-8	Tag range 100-750	Lengthen season to 23 consecutive days	Shorten season to 9 consecutive days
Section 554	Tag range 0-50		
A-15	Tag range 5-100	Lengthen season to 30 consecutive days	Shorten season to 16 consecutive days
J-7	Tag range 10-50	Lengthen season to 16 consecutive days	Shorten season to 2 consecutive days

Appendix 2-28 2007 Zone X-9a Hunt Alternatives for Proposed Project, High Kill and Low Kill Alternatives			
Hunts	Proposed Project (Alternative 1)	High Kill (Alternative 2)	Low Kill (Alternative 3)
Zone X-9a	Tag range 100-1,200	Lengthen season to 30 consecutive days	Shorten season to 16 consecutive days
A-16	Tag range 50-500	Lengthen season to 30 consecutive days	Shorten season to 16 consecutive days
G-39	Tag range 5-150 and 16 consecutive day season	Lengthen season to 23 consecutive days	Shorten season to 9 consecutive days
J-12	Tag range 10-20	Lengthen season to 23 consecutive days	Shorten season to 9 consecutive days

Appendix 2-29 2007 Zone X-9b Hunt Alternatives for Proposed Project, High Kill and Low Kill Alternatives			
Hunts	Proposed Project (Alternative 1)	High Kill (Alternative 2)	Low Kill (Alternative 3)
Zone X-9b	Tag range 100-600	Lengthen season to 30 consecutive days	Shorten season to 16 consecutive days
A-17	Tag range 50-500	Lengthen season to 30 consecutive days	Shorten season to 16 consecutive days
G-3	Tag range 5-50	Lengthen season to 23 consecutive days	Shorten season to 9 consecutive days

Appendix 2-30 2007 Zone X-9c Hunt Alternatives for Proposed Project, High Kill and Low Kill Alternatives			
Hunts	Proposed Project (Alternative 1)	High Kill (Alternative 2)	Low Kill (Alternative 3)
Zone X-9c	Tag range 100-600	Lengthen season to 30 consecutive days	Shorten season to 16 consecutive days
A-18	Tag range 50-500	Lengthen season to 30 consecutive days	Shorten season to 16 consecutive days

Appendix 2-31 2007 Zone X-10 Hunt Alternatives for Proposed Project, High Kill and Low Kill Alternatives			
Hunts	Proposed Project (Alternative 1)	High Kill (Alternative 2)	Low Kill (Alternative 3)
Zone X-10	Tag range 100-600	Lengthen season to 23 consecutive days	Shorten season to 9 consecutive days
A-19	Tag range 25-200	Lengthen season to 23 consecutive days	Shorten season to 9 consecutive days
G-38	Tag range 50-300	Lengthen season to 23 consecutive days	Shorten season to 9 consecutive days

Appendix 2-32 2007 Zone X-12 Hunt Alternatives for Proposed Project, High Kill and Low Kill Alternatives			
Hunts	Proposed Project (Alternative 1)	High Kill (Alternative 2)	Low Kill (Alternative 3)
Zone X-12	Tag range 100-1,200	Lengthen season to 30 consecutive days	Shorten season to 16 consecutive days
A-20	Tag range 50-500	Lengthen season to 30 consecutive days	Shorten season to 16 consecutive days

APPENDIX 3

POPULATION ANALYSIS TABLES

Appendix tables 3-1 through 3-45 contain results of zone specific and statewide population modeling including: 2006 estimated population and harvest and 2007 estimated post-season buck and fawn ratios, population, hunter kill and harvest buffers for 2007 proposed project, and high and low kill alternatives.

Appendix 3-1
Zone A Population Analysis – 2006 Estimated Population and Harvest and 2007 Estimated Post-Season Buck and Fawn Ratios, Population, Hunter Kill and Harvest Buffers for 2007 Proposed Project, and High and Low Kill Alternatives.

	Estimated Post-Season Ratios		Estimated Pre-Season Population	Estimated Hunter Kill		Harvest Buffer	
	Bucks	Fawns		Bucks	Does	Bucks	Does
2006	N/A	N/A	121,660	9304	119	N/A	N/A
Proposed Project	26	52	110,580	9304	119	3052	216
Alternative 2 High Kill (HK)	24	50	110,580	10903	224	1453	111
Alternative 3 Low Kill (LK)	28	48	110,580	8431	28	3925	307

Appendix 3-2
Zone B-1 Population Analysis – 2006 Estimated Population and Harvest and 2007 Estimated Post-Season Buck and Fawn Ratios, Population, Hunter Kill and Harvest Buffers for 2007 Proposed Project, and High and Low Kill Alternatives.

	Estimated Post-Season Ratios		Estimated Pre-Season Population	Estimated Hunter Kill		Harvest Buffer	
	Bucks	Fawns		Bucks	Does	Bucks	Does
2006	N/A	N/A	40260	3647	31	N/A	N/A
Proposed Project	22	60	37270	3647	31	714	23
Alternative 2 High Kill (HK)	20	58	37270	3965	40	396	14
Alternative 3 Low Kill (LK)	24	62	37270	3291	9	1070	45

Appendix 3-3
Zone B-2 Population Analysis – 2006 Estimated Population and Harvest and 2007 Estimated Post-Season Buck and Fawn Ratios, Population, Hunter Kill and Harvest Buffers for 2007 Proposed Project, and High and Low Kill Alternatives.

	Estimated Post-Season Ratios		Estimated Pre-Season Population	Estimated Hunter Kill		Harvest Buffer	
	Bucks	Fawns		Bucks	Does	Bucks	Does
2006	N/A	N/A	38290	2972	0	N/A	N/A
Proposed Project	22	37	38910	2972	0	1981	1126
Alternative 2 High Kill (HK)	20	39	38910	3368	20	1585	1106
Alternative 3 Low Kill (LK)	24	36	38910	2526	0	2427	1126

Appendix 3-4
Zone B-3 Population Analysis – 2006 Estimated Population and Harvest and 2007 Estimated Post-Season Buck and Fawn Ratios, Population, Hunter Kill and Harvest Buffers for 2007 Proposed Project, and High and Low Kill Alternatives.

	Estimated Post-Season Ratios		Estimated Pre-Season Population	Estimated Hunter Kill		Harvest Buffer	
	Bucks	Fawns		Bucks	Does	Bucks	Does
2006	N/A	N/A	8280	853	0	N/A	N/A
Proposed Project	22	46	9790	853	0	307	211
Alternative 2 High Kill (HK)	20	48	9790	951	0	209	211
Alternative 3 Low Kill (LK)	24	44	9790	731	0	429	211

Appendix 3-5
Zone B-4 Population Analysis – 2006 Estimated Population and Harvest and 2007 Estimated Post-Season Buck and Fawn Ratios, Population, Hunter Kill and Harvest Buffers for 2007 Proposed Project, and High and Low Kill Alternatives.

	Estimated Post-Season Ratios		Estimated Pre-Season Population	Estimated Hunter Kill		Harvest Buffer	
	Bucks	Fawns		Bucks	Does	Bucks	Does
2006	N/A	N/A	6460	510	0	N/A	N/A
Proposed Project	24	52	5930	510	0	136	15
Alternative 2 High Kill (HK)	22	50	5930	581	0	65	15
Alternative 3 Low Kill (LK)	26	50	5930	445	0	201	15

Appendix 3-6
Zone B-5 Population Analysis – 2006 Estimated Population and Harvest and 2007 Estimated Post-Season Buck and Fawn Ratios, Population, Hunter Kill and Harvest Buffers for 2007 Proposed Project, and High and Low Kill Alternatives.

	Estimated Post-Season Ratios		Estimated Pre-Season Population	Estimated Hunter Kill		Harvest Buffer	
	Bucks	Fawns		Bucks	Does	Bucks	Does
2006	N/A	N/A	12540	889	1	N/A	N/A
Proposed Project	39	48	14270	889	2	458	136
Alternative 2 High Kill (HK)	37	49	14270	1050	14	297	124
Alternative 3 Low Kill (LK)	41	44	14270	727	1	620	137

Appendix 3-7
Zone B-6 Population Analysis – 2006 Estimated Population and Harvest and 2007 Estimated Post-Season Buck and Fawn Ratios, Population, Hunter Kill and Harvest Buffers for 2007 Proposed Project, and High and Low Kill Alternatives.

	Estimated Post-Season Ratios		Estimated Pre-Season Population	Estimated Hunter Kill		Harvest Buffer	
	Bucks	Fawns		Bucks	Does	Bucks	Does
2006	N/A	N/A	17110	1478	0	N/A	N/A
Proposed Project	21	53	15830	1478	0	241	8
Alternative 2 High Kill (HK)	19	50	15830	1667	0	52	8
Alternative 3 Low Kill (LK)	23	49	15830	1323	0	396	8

Appendix 3-8
Zone C-1 Population Analysis – 2006 Estimated Population and Harvest and 2007 Estimated Post-Season Buck and Fawn Ratios, Population, Hunter Kill and Harvest Buffers for 2007 Proposed Project, and High and Low Kill Alternatives.

	Estimated Post-Season Ratios		Estimated Pre-Season Population	Estimated Hunter Kill		Harvest Buffer	
	Bucks	Fawns		Bucks	Does	Bucks	Does
2006	N/A	N/A	2550	389	0	N/A	N/A
Proposed Project	32	76	4360	389	0	133	11
Alternative 2 High Kill (HK)	30	75	4360	435	0	87	11
Alternative 3 Low Kill (LK)	34	72	4360	348	0	174	11

Appendix 3-9
Zone C-2 Population Analysis – 2006 Estimated Population and Harvest and 2007 Estimated Post-Season Buck and Fawn Ratios, Population, Hunter Kill and Harvest Buffers for 2007 Proposed Project, and High and Low Kill Alternatives.

	Estimated Post-Season Ratios		Estimated Pre-Season Population	Estimated Hunter Kill		Harvest Buffer	
	Bucks	Fawns		Bucks	Does	Bucks	Does
2006	N/A	N/A	6520	229	0	N/A	N/A
Proposed Project	34	50	3140	229	0	188	61
Alternative 2 High Kill (HK)	32	53	3140	260	0	157	61
Alternative 3 Low Kill (LK)	36	49	3140	198	0	219	61

Appendix 3-10
Zone C-3 Population Analysis – 2006 Estimated Population and Harvest and 2007 Estimated Post-Season Buck and Fawn Ratios, Population, Hunter Kill and Harvest Buffers for 2007 Proposed Project, and High and Low Kill Alternatives.

	Estimated Post-Season Ratios		Estimated Pre-Season Population	Estimated Hunter Kill		Harvest Buffer	
	Bucks	Fawns		Bucks	Does	Bucks	Does
2006	N/A	N/A	5870	473	0	N/A	N/A
Proposed Project	27	35	7110	473	2	626	405
Alternative 2 High Kill (HK)	25	37	7110	572	20	527	387
Alternative 3 Low Kill (LK)	29	32	7110	385	0	714	407

Appendix 3-11
Zone C-4 Population Analysis – 2006 Estimated Population and Harvest and 2007 Estimated Post-Season Buck and Fawn Ratios, Population, Hunter Kill and Harvest Buffers for 2007 Proposed Project, and High and Low Kill Alternatives.

	Estimated Post-Season Ratios		Estimated Pre-Season Population	Estimated Hunter Kill		Harvest Buffer	
	Bucks	Fawns		Bucks	Does	Bucks	Does
2006	N/A	N/A	18850	1540	10	N/A	N/A
Proposed Project	36	44	23570	1540	10	1241	346
Alternative 2 High Kill (HK)	34	47	23570	1754	18	1027	338
Alternative 3 Low Kill (LK)	38	46	23570	1283	6	1498	350

Appendix 3-12
Zone D-3 Population Analysis – 2006 Estimated Population and Harvest and 2007 Estimated Post-Season Buck and Fawn Ratios, Population, Hunter Kill and Harvest Buffers for 2007 Proposed Project, and High and Low Kill Alternatives.

	Estimated Post-Season Ratios		Estimated Pre-Season Population	Estimated Hunter Kill		Harvest Buffer	
	Bucks	Fawns		Bucks	Does	Bucks	Does
2006	N/A	N/A	13110	1079	31	N/A	N/A
Proposed Project	32	31	19650	1079	31	2518	1093
Alternative 2 High Kill (HK)	30	32	19650	1331	56	2266	1068
Alternative 3 Low Kill (LK)	34	31	19650	1295	11	2302	1113

Appendix 3-13
Zone D-4 Population Analysis – 2006 Estimated Population and Harvest and 2007 Estimated Post-Season Buck and Fawn Ratios, Population, Hunter Kill and Harvest Buffers for 2007 Proposed Project, and High and Low Kill Alternatives.

	Estimated Post-Season Ratios		Estimated Pre-Season Population	Estimated Hunter Kill		Harvest Buffer	
	Bucks	Fawns		Bucks	Does	Bucks	Does
2006	N/A	N/A	2240	281	10	N/A	N/A
Proposed Project	32	31	4830	281	10	596	237
Alternative 2 High Kill (HK)	30	34	4830	333	19	544	228
Alternative 3 Low Kill (LK)	34	29	4830	219	3	658	244

Appendix 3-14
Zone D-5 Population Analysis – 2006 Estimated Population and Harvest and 2007 Estimated Post-Season Buck and Fawn Ratios, Population, Hunter Kill and Harvest Buffers for 2007 Proposed Project, and High and Low Kill Alternatives.

	Estimated Post-Season Ratios		Estimated Pre-Season Population	Estimated Hunter Kill		Harvest Buffer	
	Bucks	Fawns		Bucks	Does	Bucks	Does
2006	N/A	N/A	22470	1379	17	N/A	N/A
Proposed Project	32	31	25110	1379	17	2758	1132
Alternative 2 High Kill (HK)	30	33	25110	1747	57	2390	1092
Alternative 3 Low Kill (LK)	34	28	25110	1057	4	3080	1145

Appendix 3-15
Zone D-6 Population Analysis – 2006 Estimated Population and Harvest and 2007 Estimated Post-Season Buck and Fawn Ratios, Population, Hunter Kill and Harvest Buffers for 2007 Proposed Project, and High and Low Kill Alternatives.

	Estimated Post-Season Ratios		Estimated Pre-Season Population	Estimated Hunter Kill		Harvest Buffer	
	Bucks	Fawns		Bucks	Does	Bucks	Does
2006	N/A	N/A	17250	892	0	N/A	N/A
Proposed Project	36	38	15620	892	0	1189	413
Alternative 2 High Kill (HK)	34	40	15620	1130	0	951	413
Alternative 3 Low Kill (LK)	38	35	15620	714	0	1367	413

Appendix 3-16
Zone D-7 Population Analysis – 2006 Estimated Population and Harvest and 2007 Estimated Post-Season Buck and Fawn Ratios, Population, Hunter Kill and Harvest Buffers for 2007 Proposed Project, and High and Low Kill Alternatives.

	Estimated Post-Season Ratios		Estimated Pre-Season Population	Estimated Hunter Kill		Harvest Buffer	
	Bucks	Fawns		Bucks	Does	Bucks	Does
2006	N/A	N/A	11760	673	0	N/A	N/A
Proposed Project	33	43	10330	673	0	1099	483
Alternative 2 High Kill (HK)	31	43	10330	815	0	957	483
Alternative 3 Low Kill (LK)	35	39	10330	567	0	1205	483

Appendix 3-17
Zone D-8 Population Analysis – 2006 Estimated Population and Harvest and 2007 Estimated Post-Season Buck and Fawn Ratios, Population, Hunter Kill and Harvest Buffers for 2007 Proposed Project, and High and Low Kill Alternatives.

	Estimated Post-Season Ratios		Estimated Pre-Season Population	Estimated Hunter Kill		Harvest Buffer	
	Bucks	Fawns		Bucks	Does	Bucks	Does
2006	N/A	N/A	10520	748	0	N/A	N/A
Proposed Project	31	50	10080	748	0	343	50
Alternative 2 High Kill (HK)	29	50	10080	888	0	203	50
Alternative 3 Low Kill (LK)	33	46	10080	639	0	452	50

Appendix 3-18
Zone D-9 Population Analysis – 2006 Estimated Population and Harvest and 2007 Estimated Post-Season Buck and Fawn Ratios, Population, Hunter Kill and Harvest Buffers for 2007 Proposed Project, and High and Low Kill Alternatives.

	Estimated Post-Season Ratios		Estimated Pre-Season Population	Estimated Hunter Kill		Harvest Buffer	
	Bucks	Fawns		Bucks	Does	Bucks	Does
2006	N/A	N/A	3150	301	0	N/A	N/A
Proposed Project	41	40	5570	301	0	790	113
Alternative 2 High Kill (HK)	39	42	5570	370	0	324	113
Alternative 3 Low Kill (LK)	43	37	5570	231	0	463	113

Appendix 3-19
Zone D-10 Population Analysis – 2006 Estimated Population and Harvest and 2007 Estimated Post-Season Buck and Fawn Ratios, Population, Hunter Kill and Harvest Buffers for 2007 Proposed Project, and High and Low Kill Alternatives.

	Estimated Post-Season Ratios		Estimated Pre-Season Population	Estimated Hunter Kill		Harvest Buffer	
	Bucks	Fawns		Bucks	Does	Bucks	Does
2006	N/A	N/A	1820	184	26	N/A	N/A
Proposed Project	28	55	5570	184	26	59	22
Alternative 2 High Kill (HK)	26	55	5570	208	39	35	9
Alternative 3 Low Kill (LK)	30	52	5570	154	14	89	34

Appendix 3-20
Zone D-11 Population Analysis – 2006 Estimated Population and Harvest and 2007 Estimated Post-Season Buck and Fawn Ratios, Population, Hunter Kill and Harvest Buffers for 2007 Proposed Project, and High and Low Kill Alternatives.

	Estimated Post-Season Ratios		Estimated Pre-Season Population	Estimated Hunter Kill		Harvest Buffer	
	Bucks	Fawns		Bucks	Does	Bucks	Does
2006	N/A	N/A	1840	458	36	N/A	N/A
Proposed Project	31	41	6440	458	36	394	136
Alternative 2 High Kill (HK)	29	45	6440	532	69	320	103
Alternative 3 Low Kill (LK)	33	39	6440	383	17	469	165

Appendix 3-21
Zone D-12 Population Analysis – 2006 Estimated Population and Harvest and 2007 Estimated Post-Season Buck and Fawn Ratios, Population, Hunter Kill and Harvest Buffers for 2007 Proposed Project, and High and Low Kill Alternatives.

	Estimated Post-Season Ratios		Estimated Pre-Season Population	Estimated Hunter Kill		Harvest Buffer	
	Bucks	Fawns		Bucks	Does	Bucks	Does
2006	N/A	N/A	1070	137	0	N/A	N/A
Proposed Project	31	41	1940	137	0	118	41
Alternative 2 High Kill (HK)	29	44	1940	160	0	95	41
Alternative 3 Low Kill (LK)	33	40	1940	108	0	147	41

Appendix 3-22
Zone D-13 Population Analysis – 2006 Estimated Population and Harvest and 2007 Estimated Post-Season Buck and Fawn Ratios, Population, Hunter Kill and Harvest Buffers for 2007 Proposed Project, and High and Low Kill Alternatives.

	Estimated Post-Season Ratios		Estimated Pre-Season Population	Estimated Hunter Kill		Harvest Buffer	
	Bucks	Fawns		Bucks	Does	Bucks	Does
2006	N/A	N/A	3490	274	14	N/A	N/A
Proposed Project	13	43	2740	274	14	69	50
Alternative 2 High Kill (HK)	11	46	2740	301	24	42	22
Alternative 3 Low Kill (LK)	15	40	2740	235	3	108	61

Appendix 3-23
Zone D-14 Population Analysis – 2006 Estimated Population and Harvest and 2007 Estimated Post-Season Buck and Fawn Ratios, Population, Hunter Kill and Harvest Buffers for 2007 Proposed Project, and High and Low Kill Alternatives.

	Estimated Post-Season Ratios		Estimated Pre-Season Population	Estimated Hunter Kill		Harvest Buffer	
	Bucks	Fawns		Bucks	Does	Bucks	Does
2006	N/A	N/A	2560	278	3	N/A	N/A
Proposed Project	26	27	4960	278	3	516	303
Alternative 2 High Kill (HK)	24	29	4960	357	15	437	291
Alternative 3 Low Kill (LK)	28	24	4960	214	2	580	304

Appendix 3-24
Zone D-15 Population Analysis – 2006 Estimated Population and Harvest and 2007 Estimated Post-Season Buck and Fawn Ratios, Population, Hunter Kill and Harvest Buffers for 2007 Proposed Project, and High and Low Kill Alternatives.

	Estimated Post-Season Ratios		Estimated Pre-Season Population	Estimated Hunter Kill		Harvest Buffer	
	Bucks	Fawns		Bucks	Does	Bucks	Does
2006	N/A	N/A	1270	296	206	N/A	N/A
Proposed Project	24	65	2290	296	206	57	34
Alternative 2 High Kill (HK)	22	65	2290	322	229	31	11
Alternative 3 Low Kill (LK)	26	60	2290	230	55	123	185

Appendix 3-25
Zone D-16 Population Analysis – 2006 Estimated Population and Harvest and 2007 Estimated Post-Season Buck and Fawn Ratios, Population, Hunter Kill and Harvest Buffers for 2007 Proposed Project, and High and Low Kill Alternatives.

	Estimated Post-Season Ratios		Estimated Pre-Season Population	Estimated Hunter Kill		Harvest Buffer	
	Bucks	Fawns		Bucks	Does	Bucks	Does
2006	N/A	N/A	2410	384	102	N/A	N/A
Proposed Project	30	40	4910	384	102	424	221
Alternative 2 High Kill (HK)	28	55	4910	501	296	307	27
Alternative 3 Low Kill (LK)	32	35	4910	323	54	485	269

Appendix 3-26
Zone D-17 Population Analysis – 2006 Estimated Population and Harvest and 2007 Estimated Post-Season Buck and Fawn Ratios, Population, Hunter Kill and Harvest Buffers for 2007 Proposed Project, and High and Low Kill Alternatives.

	Estimated Post-Season Ratios		Estimated Pre-Season Population	Estimated Hunter Kill		Harvest Buffer	
	Bucks	Fawns		Bucks	Does	Bucks	Does
2006	N/A	N/A	3740	158	0	N/A	N/A
Proposed Project	39	12	7000	158	0	807	450
Alternative 2 High Kill (HK)	37	14	7000	246	0	719	450
Alternative 3 Low Kill (LK)	41	11	7000	88	0	877	450

Appendix 3-27
Zone D-19 Population Analysis – 2006 Estimated Population and Harvest and 2007 Estimated Post-Season Buck and Fawn Ratios, Population, Hunter Kill and Harvest Buffers for 2007 Proposed Project, and High and Low Kill Alternatives.

	Estimated Post-Season Ratios		Estimated Pre-Season Population	Estimated Hunter Kill		Harvest Buffer	
	Bucks	Fawns		Bucks	Does	Bucks	Does
2006	N/A	N/A	1840	144	4	N/A	N/A
Proposed Project	31	41	2080	144	4	165	51
Alternative 2 High Kill (HK)	29	44	2080	172	11	137	44
Alternative 3 Low Kill (LK)	33	39	2080	120	1	189	54

Appendix 3-28
Zone X-1 Population Analysis – 2006 Estimated Population and Harvest and 2007 Estimated Post-Season Buck and Fawn Ratios, Population, Hunter Kill and Harvest Buffers for 2007 Proposed Project, and High and Low Kill Alternatives.

	Estimated Post-Season Ratios		Estimated Pre-Season Population	Estimated Hunter Kill		Harvest Buffer	
	Bucks	Fawns		Bucks	Does	Bucks	Does
2006	N/A	N/A	6560	661	0	N/A	N/A
Proposed Project	26	68	6960	661	0	155	16
Alternative 2 High Kill (HK)	24	65	6960	735	0	81	16
Alternative 3 Low Kill (LK)	28	64	6960	596	0	220	16

Appendix 3-29
Zone X-2 Population Analysis – 2006 Estimated Population and Harvest and 2007 Estimated Post-Season Buck and Fawn Ratios, Population, Hunter Kill and Harvest Buffers for 2007 Proposed Project, and High and Low Kill Alternatives.

	Estimated Post-Season Ratios		Estimated Pre-Season Population	Estimated Hunter Kill		Harvest Buffer	
	Bucks	Fawns		Bucks	Does	Bucks	Does
2006	N/A	N/A	940	110	0	N/A	N/A
Proposed Project	12	54	1080	110	0	18	3
Alternative 2 High Kill (HK)	10	55	1080	121	0	7	3
Alternative 3 Low Kill (LK)	14	55	1080	102	0	26	3

Appendix 3-30
Zone X-3a Population Analysis – 2006 Estimated Population and Harvest and 2007 Estimated Post-Season Buck and Fawn Ratios, Population, Hunter Kill and Harvest Buffers for 2007 Proposed Project, and High and Low Kill Alternatives.

	Estimated Post-Season Ratios		Estimated Pre-Season Population	Estimated Hunter Kill		Harvest Buffer	
	Bucks	Fawns		Bucks	Does	Bucks	Does
2006	N/A	N/A	1930	239	1	N/A	N/A
Proposed Project	27	80	2410	239	1	53	29
Alternative 2 High Kill (HK)	25	80	2410	266	20	26	10
Alternative 3 Low Kill (LK)	29	80	2410	212	0	80	30

Appendix 3-31
Zone X-3b Population Analysis – 2006 Estimated Population and Harvest and 2007 Estimated Post-Season Buck and Fawn Ratios, Population, Hunter Kill and Harvest Buffers for 2007 Proposed Project, and High and Low Kill Alternatives.

	Estimated Post-Season Ratios		Estimated Pre-Season Population	Estimated Hunter Kill		Harvest Buffer	
	Bucks	Fawns		Bucks	Does	Bucks	Does
2006	N/A	N/A	4560	449	0	N/A	N/A
Proposed Project	31	63	5340	449	6	145	30
Alternative 2 High Kill (HK)	29	65	5340	505	24	89	12
Alternative 3 Low Kill (LK)	33	65	5340	386	0	208	36

Appendix 3-32
Zone X-4 Population Analysis – 2006 Estimated Population and Harvest and 2007 Estimated Post-Season Buck and Fawn Ratios, Population, Hunter Kill and Harvest Buffers for 2007 Proposed Project, and High and Low Kill Alternatives.

	Estimated Post-Season Ratios		Estimated Pre-Season Population	Estimated Hunter Kill		Harvest Buffer	
	Bucks	Fawns		Bucks	Does	Bucks	Does
2006	N/A	N/A	1930	209	6	N/A	N/A
Proposed Project	20	63	2370	209	6	44	15
Alternative 2 High Kill (HK)	18	65	2370	226	11	27	10
Alternative 3 Low Kill (LK)	22	65	2370	188	1	65	20

Appendix 3-33
Zone X-5a Population Analysis – 2006 Estimated Population and Harvest and 2007 Estimated Post-Season Buck and Fawn Ratios, Population, Hunter Kill and Harvest Buffers for 2007 Proposed Project, and High and Low Kill Alternatives.

	Estimated Post-Season Ratios		Estimated Pre-Season Population	Estimated Hunter Kill		Harvest Buffer	
	Bucks	Fawns		Bucks	Does	Bucks	Does
2006	N/A	N/A	530	53	0	N/A	N/A
Proposed Project	38	76	660	53	0	18	3
Alternative 2 High Kill (HK)	36	75	660	60	0	11	3
Alternative 3 Low Kill (LK)	40	73	660	46	0	25	3

Appendix 3-34
Zone X-5b Population Analysis – 2006 Estimated Population and Harvest and 2007 Estimated Post-Season Buck and Fawn Ratios, Population, Hunter Kill and Harvest Buffers for 2007 Proposed Project, and High and Low Kill Alternatives.

	Estimated Post-Season Ratios		Estimated Pre-Season Population	Estimated Hunter Kill		Harvest Buffer	
	Bucks	Fawns		Bucks	Does	Bucks	Does
2006	N/A	N/A	990	116	0	N/A	N/A
Proposed Project	47	58	2020	116	4	69	14
Alternative 2 High Kill (HK)	45	55	2020	144	9	41	9
Alternative 3 Low Kill (LK)	49	54	2020	95	2	90	16

Appendix 3-35
Zone X-6a Population Analysis – 2006 Estimated Population and Harvest and 2007 Estimated Post-Season Buck and Fawn Ratios, Population, Hunter Kill and Harvest Buffers for 2007 Proposed Project, and High and Low Kill Alternatives.

	Estimated Post-Season Ratios		Estimated Pre-Season Population	Estimated Hunter Kill		Harvest Buffer	
	Bucks	Fawns		Bucks	Does	Bucks	Does
2006	N/A	N/A	2280	197	0	N/A	N/A
Proposed Project	11	50	2000	197	0	29	5
Alternative 2 High Kill (HK)	9	50	2000	215	0	11	5
Alternative 3 Low Kill (LK)	13	50	2000	174	0	52	5

Appendix 3-36
Zone X-6b Population Analysis – 2006 Estimated Population and Harvest and 2007 Estimated Post-Season Buck and Fawn Ratios, Population, Hunter Kill and Harvest Buffers for 2007 Proposed Project, and High and Low Kill Alternatives.

	Estimated Post-Season Ratios		Estimated Pre-Season Population	Estimated Hunter Kill		Harvest Buffer	
	Bucks	Fawns		Bucks	Does	Bucks	Does
2006	N/A	N/A	1310	115	0	N/A	N/A
Proposed Project	17	39	1350	115	0	88	40
Alternative 2 High Kill (HK)	15	40	1350	131	0	72	40
Alternative 3 Low Kill (LK)	19	36	1350	97	0	106	40

Appendix 3-37
Zone X-7a Population Analysis – 2006 Estimated Population and Harvest and 2007 Estimated Post-Season Buck and Fawn Ratios, Population, Hunter Kill and Harvest Buffers for 2007 Proposed Project, and High and Low Kill Alternatives.

	Estimated Post-Season Ratios		Estimated Pre-Season Population	Estimated Hunter Kill		Harvest Buffer	
	Bucks	Fawns		Bucks	Does	Bucks	Does
2006	N/A	N/A	1230	106	11	N/A	N/A
Proposed Project	22	50	1150	106	11	25	7
Alternative 2 High Kill (HK)	20	50	1150	118	13	13	5
Alternative 3 Low Kill (LK)	24	50	1150	89	4	42	14

Appendix 3-38
Zone X-7b Population Analysis – 2006 Estimated Population and Harvest and 2007 Estimated Post-Season Buck and Fawn Ratios, Population, Hunter Kill and Harvest Buffers for 2007 Proposed Project, and High and Low Kill Alternatives.

	Estimated Post-Season Ratios		Estimated Pre-Season Population	Estimated Hunter Kill		Harvest Buffer	
	Bucks	Fawns		Bucks	Does	Bucks	Does
2006	N/A	N/A	640	60	2	N/A	N/A
Proposed Project	27	35	860	60	2	73	32
Alternative 2 High Kill (HK)	25	41	860	72	15	61	19
Alternative 3 Low Kill (LK)	29	32	860	46	1	87	33

Appendix 3-39
Zone X-8 Population Analysis – 2006 Estimated Population and Harvest and 2007 Estimated Post-Season Buck and Fawn Ratios, Population, Hunter Kill and Harvest Buffers for 2007 Proposed Project, and High and Low Kill Alternatives.

	Estimated Post-Season Ratios		Estimated Pre-Season Population	Estimated Hunter Kill		Harvest Buffer	
	Bucks	Fawns		Bucks	Does	Bucks	Does
2006	N/A	N/A	555	72	6	N/A	N/A
Proposed Project	23	48	810	72	6	27	11
Alternative 2 High Kill (HK)	21	50	810	82	13	17	4
Alternative 3 Low Kill (LK)	25	43	810	64	1	35	16

Appendix 3-40
Zone X-9a Population Analysis – 2006 Estimated Population and Harvest and 2007 Estimated Post-Season Buck and Fawn Ratios, Population, Hunter Kill and Harvest Buffers for 2007 Proposed Project, and High and Low Kill Alternatives.

	Estimated Post-Season Ratios		Estimated Pre-Season Population	Estimated Hunter Kill		Harvest Buffer	
	Bucks	Fawns		Bucks	Does	Bucks	Does
2006	N/A	N/A	3840	421	0	N/A	N/A
Proposed Project	25	36	5880	421	0	421	202
Alternative 2 High Kill (HK)	23	39	5880	505	0	337	202
Alternative 3 Low Kill (LK)	27	35	5880	354	0	488	202

Appendix 3-41
Zone X-9b Population Analysis – 2006 Estimated Population and Harvest and 2007 Estimated Post-Season Buck and Fawn Ratios, Population, Hunter Kill and Harvest Buffers for 2007 Proposed Project, and High and Low Kill Alternatives.

	Estimated Post-Season Ratios		Estimated Pre-Season Population	Estimated Hunter Kill		Harvest Buffer	
	Bucks	Fawns		Bucks	Does	Bucks	Does
2006	N/A	N/A	2850	181	0	N/A	N/A
Proposed Project	59	52	4660	181	0	169	10
Alternative 2 High Kill (HK)	57	50	4660	222	0	128	10
Alternative 3 Low Kill (LK)	60	50	4660	152	0	188	10

Appendix 3-42
Zone X-9c Population Analysis – 2006 Estimated Population and Harvest and 2007 Estimated Post-Season Buck and Fawn Ratios, Population, Hunter Kill and Harvest Buffers for 2007 Proposed Project, and High and Low Kill Alternatives.

	Estimated Post-Season Ratios		Estimated Pre-Season Population	Estimated Hunter Kill		Harvest Buffer	
	Bucks	Fawns		Bucks	Does	Bucks	Does
2006	N/A	N/A	630	88	0	N/A	N/A
Proposed Project	28	58	1030	88	0	36	10
Alternative 2 High Kill (HK)	26	59	1030	103	0	21	10
Alternative 3 Low Kill (LK)	30	55	1030	80	0	44	10

Appendix 3-43
Zone X-10 Population Analysis – 2006 Estimated Population and Harvest and 2007 Estimated Post-Season Buck and Fawn Ratios, Population, Hunter Kill and Harvest Buffers for 2007 Proposed Project, and High and Low Kill Alternatives.

	Estimated Post-Season Ratios		Estimated Pre-Season Population	Estimated Hunter Kill		Harvest Buffer	
	Bucks	Fawns		Bucks	Does	Bucks	Does
2006	N/A	N/A	880	85	0	N/A	N/A
Proposed Project	32	54	1110	85	0	60	16
Alternative 2 High Kill (HK)	30	55	1110	97	0	48	16
Alternative 3 Low Kill (LK)	34	51	1110	72	0	73	16

Appendix 3-44
Zone X-12 Population Analysis – 2006 Estimated Population and Harvest and 2007 Estimated Post-Season Buck and Fawn Ratios, Population, Hunter Kill and Harvest Buffers for 2007 Proposed Project, and High and Low Kill Alternatives.

	Estimated Post-Season Ratios		Estimated Pre-Season Population	Estimated Hunter Kill		Harvest Buffer	
	Bucks	Fawns		Bucks	Does	Bucks	Does
2006	N/A	N/A	2030	270	0	N/A	N/A
Proposed Project	17	46	2860	270	0	94	32
Alternative 2 High Kill (HK)	15	48	2860	302	0	62	32
Alternative 3 Low Kill (LK)	19	44	2860	229	0	135	32

Appendix 3-45
Statewide Population Analysis – 2006 Estimated Population and Harvest and 2007 Estimated Post-Season Buck and Fawn Ratios, Population, Hunter Kill and Harvest Buffers for 2007 Proposed Project, and High and Low Kill Alternatives.

	Estimated Post-Season Ratios		Estimated Pre-Season Population	Estimated Hunter Kill		Harvest Buffer	
	Bucks	Fawns		Bucks	Does	Bucks	Does
2006	N/A	N/A	419840	33118	628	N/A	N/A
Proposed Project	30	46	438140	33118	628	17573	3880
Alternative 2 High Kill (HK)	28	48	438140	37173	676	13518	3832
Alternative 3 Low Kill (LK)	32	44	438140	27711	113	22980	4395

APPENDIX 4

2007 HARVEST AND POPULATION ESTIMATES

Appendix 4-1 provides a summary of the 2007 estimated hunter kill, area buck ratio objectives, 2006 post-season buck and fawn ratios, and 2007 population estimates (including three-year average) by zone or hunt.

Appendix 4-1
Summary of the 2007 Estimated Hunter Kill, Area Buck Ratio Objectives, 2006 Post-Season Buck and Fawn Ratios, and 2007 Population Estimates (including three-year average) by Zone or Hunt.

Area	Estimated 2007 Hunter Kill	Buck Ratio Objective	2006 Post-Season		Population Estimates	
			Fall Buck Ratio	Fall Fawn Ratio	Three-Year Average Population	Estimated 2007 Pre-Season Population
A	9060	30	26	52	143970	110580
B-1	3619	30	22	60	59300	37270
B-2	2927	30	22	37	41993	38910
B-3	842	30	22	46	12793	9790
B-4	504	30	24	52	7240	5930
B-5	882	30	39	48	12963	14270
B-6	1459	30	21	53	19470	15830
C-1	356	20	32	76	3370	4360
C-2	210	25	34	50	4630	3140
C-3	433	25	27	35	6620	7110
C-4	543	20	36	44	19170	23570
D-3	1068	25	32	31	16560	19650
D-4	282	30	32	31	3980	4830
D-5	1363	18	32	31	25637	25110
D-6	866	30	36	38	22637	15620
D-7	665	25	33	43	14503	10330
D-8	722	25	31	50	11867	10080
D-9	297	25	41	40	4313	5570
D-10	207	25	28	55	2633	5570
D-11	458	25	31	46	4153	6440
D-12	135	20	31	41	1307	1940
D-13	257	25	13	43	3210	2740
D-14	268	20	26	27	3453	4960
D-15	452	25	24	65	1720	2290
D-16	412	20	30	40	3265	4910
D-17	156	25	39	12	3710	7000
D-19	138	20	31	41	1787	2080
X-1	604	20	26	68	6833	6960
X-2	99	12	12	54	1080	1080
X-3a	225	15	27	80	2320	2410
X-3b	432	20	31	63	5003	5340
X-4	202	20	20	63	2350	2370
X-5a	47	25	38	76	637	660

Appendix 4-1
Summary of the 2007 Estimated Hunter Kill, Area Buck Ratio Objectives, 2006 Post-Season Buck and Fawn Ratios, and 2007 Population Estimates (including three-year average) by Zone or Hunt.

Area	Estimated 2007 Hunter Kill	Buck Ratio Objective	2006 Post-Season		Population Estimates	
			Fall Buck Ratio	Fall Fawn Ratio	Three-Year Average Population	Estimated 2007 Pre-Season Population
X-5b	114	25	47	58	1283	2020
X-6a	166	25	11	50	2527	2000
X-6b	87	25	17	39	1377	1350
X-7a	92	20	22	50	1220	1150
X-7b	33	20	27	35	703	860
X-8	62	25	23	48	752	810
X-9a	365	20	25	36	5907	5880
X-9b	159	20	59	52	3170	4660
X-9c	86	20	28	58	740	1030
X-10	67	25	32	54	1103	1110
X-12	252	20	17	46	2730	2860
A-1	213	Refer to Zones C-1, C-2, C-3 and C-4				
A-3	57	Refer to Zone X-1				
A-4	2	Refer to Zone X-2				
A-5	15	Refer to Zone X-3a				
A-6	23	Refer to Zone X-3b				
A-7	13	Refer to Zone X-4				
A-8	2	Refer to Zone X-5a				
A-9	2	Refer to Zone X-5b				
A-11	12	Refer to Zone X-6a				
A-12	15	Refer to Zone X-6b				
A-13	13	Refer to Zone X-7a				
A-14	18	Refer to Zone X-7b				
A-15	9	Refer to Zone X-8				
A-16	28	Refer to Zone X-9a				
A-17	2	Refer to Zone X-9b				
A-18	9	Refer to Zone X-9c				
A-19	2	Refer to Zone X-10				
A-20	18	Refer to Zone X-12				
A-21	3	Refer to Zone D-6				
A-22	35	Refer to Zone D-16				
A-24	14	Refer to Zone A				
A-25	10	Refer to Zone A				
A-26	11	Refer to Zone X-6a				

Appendix 4-1
Summary of the 2007 Estimated Hunter Kill, Area Buck Ratio Objectives, 2006 Post-Season Buck and Fawn Ratios, and 2007 Population Estimates (including three-year average) by Zone or Hunt.

Area	Estimated 2007 Hunter Kill	Buck Ratio Objective	2006 Post-Season		Population Estimates	
			Fall Buck Ratio	Fall Fawn Ratio	Three-Year Average Population	Estimated 2007 Pre-Season Population
A-27	2	Refer to Zone X-2				
A-30	9	Refer to Zone B-1				
A-31	25	Refer to Zone D-11				
A-32	2	Refer to Zone A				
A-33	20	Refer to Zone A				
G-1	585	Refer to Zone C-4				
G-3	20	Refer to Zone X-9b				
G-6	17	Refer to Zone D-8				
G-7	4	Refer to Zone D-3				
G-8	33	Refer to Zone A				
G-9	21	Refer to Zone A				
G-10	44	Refer to Zone D-15				
G-11	71	Refer to Zone A				
G-12	9	Refer to Zone D-3				
G-13	32	Refer to Zone D-16				
G-19	2	Refer to Zone D-4				
G-21	5	Refer to Zone A				
G-37	8	Refer to Zone D-6				
G-38	16	Refer to Zone X-10				
G-39	25	Refer to Zone X-9a				
M-3	13	Refer to Zone X-6b				
M-4	4	Refer to Zone X-5a				
M-5	4	Refer to Zone X-5b				
M-6	2	Refer to Zone D-16				
M-7	28	Refer to Zone D-13				
M-8	8	Refer to Zone X-6a				
M-9	7	Refer to Zone X-2				
M-11	4	Refer to Zone B-1				
MA-1	18	Refer to Zone A				
MA-3	18	Refer to Zone A				
J-1	9	Refer to Zone A				
J-3	5	Refer to Zone C-4				
J-4	8	Refer to Zone B-2				
J-7	7	Refer to Zone X-8				

Appendix 4-1
Summary of the 2007 Estimated Hunter Kill, Area Buck Ratio Objectives, 2006 Post-Season Buck and Fawn Ratios, and 2007 Population Estimates (including three-year average) by Zone or Hunt.

Area	Estimated 2007 Hunter Kill	Buck Ratio Objective	2006 Post-Season		Population Estimates	
			Fall Buck Ratio	Fall Fawn Ratio	Three-Year Average Population	Estimated 2007 Pre-Season Population
J-8	3	Refer to Zone D-3				
J-9	2	Refer to Zone D-3				
J-10	34	Refer to Zone A				
J-11	10	Refer to Zone D-14				
J-12	3	Refer to Zone X-9a				
J-13	5	Refer to Zone D-11				
J-14	8	Refer to Zone D-19				
J-15	4	Refer to Zone D-6				
J-16	24	Refer to Zone D-3				
J-17	3	Refer to Zone D-4				
J-18	16	Refer to Zone D-5				
J-19	11	Refer to Zone X-7a				
J-20	11	Refer to Zone X-7b				
J-21	20	Refer to Zone C-4				
* FRO	4	Valid in Any Zone or Hunt				
* FRG	5	Valid Statewide				
* AO	452	Valid in Zones A, B-1 through B-6, D-3 through D-19 and Hunt G-10				
*554	65	Valid to qualifying landowners in deer quota zones where tags are distributed by public drawing (Section 554, Title 14, CCR)				
* PLM	751	Valid to licensed Private Lands Management Areas (Section 601, Title 14, CCR)				

* Harvest with Fundraising Auction tags (Open Zone, FRO; Golden Opportunity, FRG); Archery Only tags (AO); Cooperative Deer Hunting Area Program tags (554); and Private Lands Management Program tags (PLM) are reported separate. However, for population modeling purposes, harvest with FRO, FRG, AO, 554 and PLM tags is included within the zone specific harvest and population analysis.

APPENDIX 5

2006 DEER HARVEST TABLES

Appendix table 5-1 includes the individual zone or hunt and statewide reported and estimated deer harvest by sex and percent hunter success. Appendix table 5-2 includes the individual Private Lands Management Areas (PLM) deer harvest by sex. Appendix tables 5-3 and 5-4 include the reported and estimated statewide deer harvest rolled-up by individual zone of kill for all statewide deer hunts and PLMs.

Appendix 5-1
Summary of 2006 Zone, Hunt and Statewide Reported and Estimated Deer Harvest and Hunter Success (a).

Zone or Hunt Number	2006 Tag Quota	2006 Tags Issued	REPORTED DEER KILL				ESTIMATED DEER KILL (b)			
			Does	Bucks	Total	Percent Hunter Success	Does	Bucks	Total	Percent Hunter Success
ZONE HUNTS										
AO Tags (c)	4616	4616	0	241	241	5.2%	0	452	452	9.8%
A	65000	33160	0	3136	3136	9.5%	0	7169	7169	21.6%
B Zone Tag	55500	39812	0	3848	3848	9.7%	0	8340	8340	20.9%
B-1	N/A	N/A	0	1340	1340	(d)	0	2872	2872	(d)
B-2	N/A	N/A	0	1145	1145	(d)	0	2429	2429	(d)
B-3	N/A	N/A	0	318	318	(d)	0	697	697	(d)
B-4	N/A	N/A	0	168	168	(d)	0	417	417	(d)
B-5	N/A	N/A	0	333	333	(d)	0	704	704	(d)
B-6	N/A	N/A	0	544	544	(d)	0	1221	1221	(d)
C Zone Tag	9025	9025	0	968	968	10.7%	0	1435	1435	15.9%
C-1	N/A	N/A	0	202	202	(d)	0	285	285	(d)
C-2	N/A	N/A	0	109	109	(d)	0	171	171	(d)
C-3	N/A	N/A	0	219	219	(d)	0	341	341	(d)
C-4	N/A	N/A	0	438	438	(d)	0	637	637	(d)
D3-5 Zone Tags	33000	28175	0	1460	1460	5.2%	0	2203	2203	7.8%
D-3	N/A	N/A	0	610	610	(d)	0	863	863	(d)
D-4	N/A	N/A	0	143	143	(d)	0	221	221	(d)
D-5	N/A	N/A	0	707	707	(d)	0	1119	1119	(d)
D-6	10000	10000	0	445	445	4.5%	0	673	673	6.7%
D-7	9000	9000	0	333	333	3.7%	0	522	522	5.8%
D-8	8000	7260	0	370	370	5.1%	0	576	576	7.9%
D-9	2000	2000	0	155	155	7.8%	0	237	237	11.9%
D-10	700	517	0	54	54	10.4%	0	64	64	12.3%
D-11	5500	4749	0	223	223	4.7%	0	344	344	7.2%
D-12	950	950	0	69	69	7.3%	0	112	112	11.8%
D-13	4000	3010	0	147	147	4.9%	0	216	216	7.2%
D-14	3000	2944	0	147	147	5.0%	0	227	227	7.7%
D-15	1500	395	0	43	43	10.9%	0	68	68	17.3%
D-16	3000	2401	0	185	185	7.7%	0	285	285	11.9%
D-17	500	500	0	89	89	17.8%	0	132	132	26.4%
D-19	1500	1268	0	77	77	6.1%	0	117	117	9.2%
X-1	2325	2325	0	364	364	15.7%	0	509	509	21.9%
X-2	180	180	0	72	72	40.0%	0	77	77	42.6%
X-3a	295	295	0	131	131	44.4%	0	178	178	60.4%
X-3b	840	840	0	248	248	29.5%	0	340	340	40.5%
X-4	435	435	0	128	128	29.4%	0	163	163	37.4%

Appendix 5-1
Summary of 2006 Zone, Hunt and Statewide Reported and Estimated Deer Harvest and Hunter Success (a).

Zone or Hunt Number	2006 Tag Quota	2006 Tags Issued	REPORTED DEER KILL				ESTIMATED DEER KILL (b)			
			Does	Bucks	Total	Percent Hunter Success	Does	Bucks	Total	Percent Hunter Success
X-5a	70	70	0	38	38	54.3%	0	38	38	54.3%
X-5b	155	155	0	75	75	48.4%	0	84	84	54.2%
X-6A	325	325	0	95	95	29.2%	0	131	131	40.3%
X-6b	415	415	0	64	64	15.4%	0	67	67	16.2%
X-7a	220	220	0	70	70	31.8%	0	83	83	37.8%
X-7b	100	100	0	32	32	32.0%	0	38	38	38.0%
X-8	300	300	0	37	37	12.3%	0	56	56	18.5%
X-9a	750	750	0	226	226	28.6%	0	312	312	39.5%
X-9b	325	325	0	77	77	23.7%	0	113	113	34.7%
X-9c	325	325	0	51	51	15.7%	0	65	65	20.0%
X-10	400	400	0	23	23	5.8%	0	33	33	8.3%
X-12	805	805	0	213	213	26.5%	0	213	213	26.5%
AREA-SPECIFIC ARCHERY HUNTS										
A-1	2045	2045	0	138	138	6.7%	0	203	203	10.0%
A-3	265	265	0	30	30	11.3%	0	42	42	15.8%
A-4	10	10	0	2	2	20.0%	0	2	2	21.3%
A-5	35	35	0	5	5	14.3%	0	7	7	19.4%
A-6	90	90	0	19	19	21.1%	0	26	26	29.0%
A-7	105	106	0	6	6	5.7%	0	8	8	7.3%
A-8	20	20	0	1	1	5.0%	0	1	1	5.0%
A-9	5	5	0	0	0	0.0%	0	0	0	0.0%
A-11	55	55	0	7	7	12.7%	0	10	10	17.6%
A-12	175	175	0	11	11	6.3%	0	12	12	6.6%
A-13	30	30	0	0	0	0.0%	0	0	0	0.0%
A-14	20	20	0	7	7	35.0%	0	8	8	41.6%
A-15	25	25	0	1	1	4.0%	0	2	2	6.0%
A-16	130	130	0	21	21	16.2%	0	29	29	22.3%
A-17	300	138	0	7	7	4.2%	0	10	10	6.1%
A-18	350	82	0	6	6	7.3%	0	8	8	9.3%
A-19	120	30	0	1	1	3.3%	0	1	1	4.8%
A-20	115	115	0	12	12	10.4%	0	12	12	10.4%
A-21	25	25	0	2	2	8.0%	0	3	3	12.1%
A-22	1000	741	16	15	31	4.2%	25	23	48	6.5%
A-24	100	100	8	4	12	12.0%	18	9	27	27.4%
A-25	35	35	0	7	7	20.0%	0	7	7	20.0%
A-26	30	30	0	10	10	33.3%	0	14	14	46.0%
A-27	10	10	0	1	1	10.0%	0	1	1	10.6%

Appendix 5-1
Summary of 2006 Zone, Hunt and Statewide Reported and Estimated Deer Harvest and Hunter Success (a).

Zone or Hunt Number	2006 Tag Quota	2006 Tags Issued	REPORTED DEER KILL				ESTIMATED DEER KILL (b)			
			Does	Bucks	Total	Percent Hunter Success	Does	Bucks	Total	Percent Hunter Success
A-30	40	40	0	9	9	22.5%	0	19	19	48.2%
A-31	100	957	18	15	33	3.4%	28	23	51	5.3%
A-32	250	78	0	0	0	0.0%	0	0	0	0.0%
ADDITIONAL HUNTS – GENERAL METHODS										
G-1	2850	2850	0	327	327	11.5%	0	475	475	16.7%
G-3	35	35	0	24	24	68.6%	0	24	24	68.6%
G-6	50	50	0	30	30	60.0%	0	30	30	60.0%
G-7	20	20	7	2	9	45.0%	7	2	9	45.0%
G-8	20	20	12	3	15	75.0%	12	3	15	75.0%
G-9	30	30	16	0	16	53.3%	16	0	16	53.3%
G-10	300	300	54	62	116	38.7%	54	62	116	38.7%
G-11	500	500	0	9	9	1.8%	0	9	9	1.8%
G-12	30	30	5	6	11	36.7%	5	6	11	36.7%
G-13	300	300	37	4	41	13.7%	57	6	63	21.1%
G-19	25	25	3	3	6	24.0%	5	5	9	37.1%
G-21	25	25	0	4	4	16.0%	0	9	9	36.6%
G-37	25	25	0	17	17	68.0%	0	17	17	68.0%
G-38	300	300	0	25	25	8.3%	0	36	36	12.0%
G-39	5	5	0	2	2	40.0%	0	2	2	40.0%
ADDITIONAL HUNTS – MUZZLELOADING RIFLE										
M-3	20	20	0	17	17	85.0%	0	18	18	89.5%
M-4	5	5	0	1	1	20.0%	0	1	1	20.0%
M-5	15	15	0	7	7	46.7%	0	8	8	52.3%
M-6	80	80	2	2	4	5.0%	3	3	6	7.7%
M-7	150	150	8	5	13	8.7%	12	7	19	12.7%
M-8	20	20	0	7	7	35.0%	0	10	10	48.3%
M-9	15	15	0	6	6	40.0%	0	6	6	42.6%
M-11	20	20	0	9	9	45.0%	0	9	9	45.0%
MA-1	150	150	10	4	14	9.3%	23	9	32	21.3%
MA-3	150	150	0	7	7	4.7%	0	16	16	10.7%
ADDITIONAL HUNTS – JUNIOR HUNTS										
J-1	25	25	2	3	5	20.0%	2	3	5	20.0%
J-3	15	15	0	4	4	26.7%	0	4	4	26.7%
J-4	15	15	0	12	12	80.0%	0	12	12	80.0%
J-7	15	15	5	2	7	46.7%	5	2	7	46.7%
J-8	15	15	2	0	2	13.3%	2	0	2	13.3%
J-9	5	5	0	0	0	0.0%	0	0	0	0.0%

Appendix 5-1
Summary of 2006 Zone, Hunt and Statewide Reported and Estimated Deer Harvest and Hunter Success (a).

Zone or Hunt Number	2006 Tag Quota	2006 Tags Issued	REPORTED DEER KILL				ESTIMATED DEER KILL (b)			
			Does	Bucks	Total	Percent Hunter Success	Does	Bucks	Total	Percent Hunter Success
J-10	60	60	14	27	41	68.3%	14	27	41	68.3%
J-11	40	40	1	2	3	7.5%	1	2	3	7.5%
J-12	10	10	0	7	7	70.0%	0	7	7	70.0%
J-13	40	40	2	3	5	12.5%	2	3	5	12.5%
J-14	30	30	3	3	6	20.0%	3	3	6	20.0%
J-15	10	10	0	6	6	60.0%	0	6	6	60.0%
J-16	75	75	12	2	14	18.7%	12	2	14	18.7%
J-17	25	25	3	0	3	12.0%	3	0	3	12.0%
J-18	75	75	14	1	15	20.0%	14	1	15	20.0%
J-19	25	25	9	5	14	56.0%	9	5	14	56.0%
J-20	20	20	2	4	6	30.0%	2	4	6	30.0%
J-21	50	50	8	11	19	38.0%	8	11	19	38.0%
FUNDRAISING LICENSE TAGS										
Golden Opportunity (c)	5	5	0	5	5	100.0%	0	5	5	100.0%
Open Zone (c)	5	5	0	4	4	80.0%	0	4	4	80.0%
STATEWIDE										
TOTAL	237141	179208	273	14955	15228	8.5%	341	27028	27369	15.3%

(a) Numbers based on deer tag returns as of 1/12/2007.
(b) Estimated kill numbers and totals may not agree with other tables due to rounding.
(c) Archery Only and Fundraising Tag kill is totaled separate and not included within each specific zone.
(d) Unable to calculate B, C and D3-5 zone success rates due to unknown individual zone effort.

Appendix 5-2
2006 Reported (Actual) Private Lands Management Area (PLM) deer kill.

Private Land Management Area Name (PLM)	Deer Zone	County	Doe Kill	Buck Kill	Total Kill
ABERNATHY RANCH	B-5	Shasta		3	3
BANGOR RANCH	D-3	Yuba		3	3
BAR B6 WILDLIFE MANAGEMENT AREA	A	Kern		1	1
BASIN VIEW	X-2	Modoc		5	5
BELL RANCH	C-4	Tehama		4	4
BIG BLUFF RANCH	B-5	Tehama		2	2
BIG MORONGO SPRINGS RANCH	D-14	San Bernardino			0
BLACK RANCH	C-3	Shasta			0
BUCKEYE RANCH	A	Solano		4	4
BURROWS RANCH	B-5	Tehama		2	2
CAMP 5 OUTFITTERS	A	Monterey			0
CAPISTRAN RANCH	B-1	Mendocino		4	4
CARLEY RANCH	B-1	Mendocino	1	2	3
CHIMNEY ROCK RANCH	A	San Luis Obispo	1	5	6
CHRISTENSEN RANCH	B-1	Mendocino		4	4
CLARKS VALLEY-RED ROCK RANCH	X-3b	Lassen		7	7
CLOUDS WARNER MOUNTAIN RANCH	X-3b	Modoc			0
COON CAMP SPRINGS	X-3a	Lassen		3	3
COON CREEK RANCH	A	Santa Clara		1	1
CORNING LAND AND CATTLE COMPANY	B-5	Tehama	1	8	9
DEFRANCESCO AND EATON RANCH	A	Merced		5	5
DEMERA RANCH	A	Lake		2	2
DIAMOND BACK RANCH	B-5	Tehama		3	3
EAGLE ROCK	A	Mendocino		2	2
EDEN VALLEY RANCH	B-1	Mendocino		12	12
FIVE DOT RANCH	X-3a	Lassen		3	3
FIVE DOT RANCH	X-5a	Lassen		2	2
FIVE DOT RANCH	X-4	Lassen		3	3
FOWLER RANCH	A	Lake	3	1	4
HATHAWAY OAK RUN RANCH	C-3	Shasta		12	12
HEAVEN'S GATE	B5	Tehama		1	1
ISLAND MOUNTAIN TRINITY RANCH	B-1	Mendocino			0
JS RANCH	C-3	Shasta		5	5
LITTLE DRY CREEK RANCH	C-4	Tehama			0
LLANO SECO	C-3	Butte		14	14
LONE RANCH	A	San Benito		2	2
LOOKOUT RANCH	X-1	Modoc			0
MARTIN RANCH	A	Mendocino		3	3
MASUT COVELO RANCH	B-1	Mendocino		13	13

Appendix 5-2
2006 Reported (Actual) Private Lands Management Area (PLM) deer kill.

Private Land Management Area Name (PLM)	Deer Zone	County	Doe Kill	Buck Kill	Total Kill
MASUT REDWOOD VALLEY RANCH	A	Mendocino		5	5
MEISSNER RANCH	B-2	Shasta		5	5
MENDIBOURE RANCH	X-5b	Lassen		1	1
MILLER-ERIKSON RANCH	B-1	Mendocino		6	6
PBM FARMS	C-1	Siskiyou		3	3
PINECREEK CATTLE CO MADELINE RANCH	X-3a	Lassen		3	3
PINE RANCH	A	Yolo		5	5
POCKET RANCH	A	Sonoma	2	4	6
POTTER VALLEY WMA	A	Mendocino	2	8	10
PRATHER RANCH	X-1	Siskiyou		6	6
R MOUNTAIN RANCH	B-1	Mendocino		3	3
RANCHO GARATE	X-5b	Lassen		4	4
RANCHO LA CUESTA	A	San Benito		2	2
ROARING RIVER RANCH	B-5	Shasta			0
ROBINSON CREEK RANCH	A	Mendocino		1	1
ROCK CREEK RANCH	C-4	Butte		15	15
ROOSTER COMB RANCH	A	Stanislaus		2	2
ROSENDAHL RANCH	X-3b	Modoc		1	1
SANTA CATALINA ISLAND	D-15	Los Angeles	118	117	235
SCHNEIDER RANCH	B-1	Mendocino		10	10
SEVEN SPRINGS RANCH	A	Mendocino		2	2
SHAMROCK RANCH	B-1	Mendocino	2	27	29
SILLER RANCH (PEARSON PROPERTY)	D-3	Yuba		2	2
SL RANCH	X-3a	Modoc		3	3
SNOWSTORM RANCH	X-5a	Lassen		2	2
SOUTH KNOB RANCH	X-3a	Lassen		2	2
SPANISH VALLEY RANCH	A	Napa	1	5	6
SPRING VALLEY RANCH	A	Mendocino		6	6
STEWART RANCH	B-1	Trinity	19	34	53
SUGARLOAF LAND AND CATTLE COMPANY	D-3	Yuba		4	4
SUMMER CAMP	B-1	Mendocino	5	35	40
TEJON RANCH	D-10	Kern	22	89	111
TRIPLE B RANCH	C-3	Shasta		3	3
WHITE CLOUD RESOURCES	B-1	Mendocino	1		1
WILLIAMS RANCH	B-5	Shasta		12	12
WORK RANCH	A	Monterey	3	2	5
2006 STATEWIDE PLM KILL:			**181**	**570**	**751**

FINAL
ENVIRONMENTAL DOCUMENT

Section 363, Title 14, California Code of Regulations

Regarding

Pronghorn Antelope Hunting

April 12, 2004

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF FISH AND GAME

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CHAPTER 1. SUMMARY

State law (Section 207 of the Fish and Game Code) requires the Fish and Game Commission (Commission) to review mammal hunting regulations at least once every three years and the Department of Fish and Game (Department) to present recommendations for changes to the mammal hunting regulations to the Commission at a public meeting. However, during any year, the Commission may receive proposals from the Department for changes in mammal hunting regulations. If any major changes occur, the Department will issue a supplemental, amended, or subsequent document in order to present the issues to the Commission. Possible subject matters that may require an amendment include tag quotas based on biological population performance, emergency maintenance of resources, and for content clarity. Mammal hunting regulations adopted by the Commission provide for hunting pronghorn antelope *(Antilocapra americana)* in specific areas of the State [Section 363, Title 14, California Code of Regulations (CCR)]. The project discussed in this document (proposed project) involves pronghorn antelope hunting for 2004 (Section 331, Fish and Game Code, see Appendix 1).

Existing law (Section 3950, Fish and Game Code) designates pronghorn antelope as a game mammal in California. Section 331, Fish and Game Code, provides that the Commission may fix the area or areas, seasons and hours, bag and possession limit, sex, and total number of pronghorn antelope that may be taken pursuant to its regulations. Section 203.1, Fish and Game Code, requires the Commission to consider populations, habitat, food supplies, the welfare of individual animals, and other pertinent facts when establishing hunting regulations for pronghorn antelope.

PROPOSED PROJECT

The proposed project being considered is a proposal to continue regulated hunting as an element of pronghorn antelope management. Regulated pronghorn antelope hunting is proposed for northeastern and central California, including parts of Lassen, Modoc, Plumas, Shasta, Siskiyou, Kern, and Los Angeles counties (figures 1-6) during 2004. Objectives of the proposal are to maintain a viable and healthy statewide pronghorn antelope population and to provide biologically appropriate hunting opportunities.

Specifically, the proposed project provides a tag allocation range (Table 1) based on results from the 2003 annual winter survey, during which a minimum of 3,973 pronghorn was determined to inhabit northeastern California. Tag allocations in Table 1 describe three possible ranges for each zone. The conservative range will be recommended when the statewide pronghorn populations is less than 5,700 animals. The moderate range will be recommended at a statewide pronghorn populations level of 5700-6700 animals. The maximum range will be recommended when the statewide

FIGURE 1

Pronghorn 2 00 4 Hunt Zone 1 - Mount Do

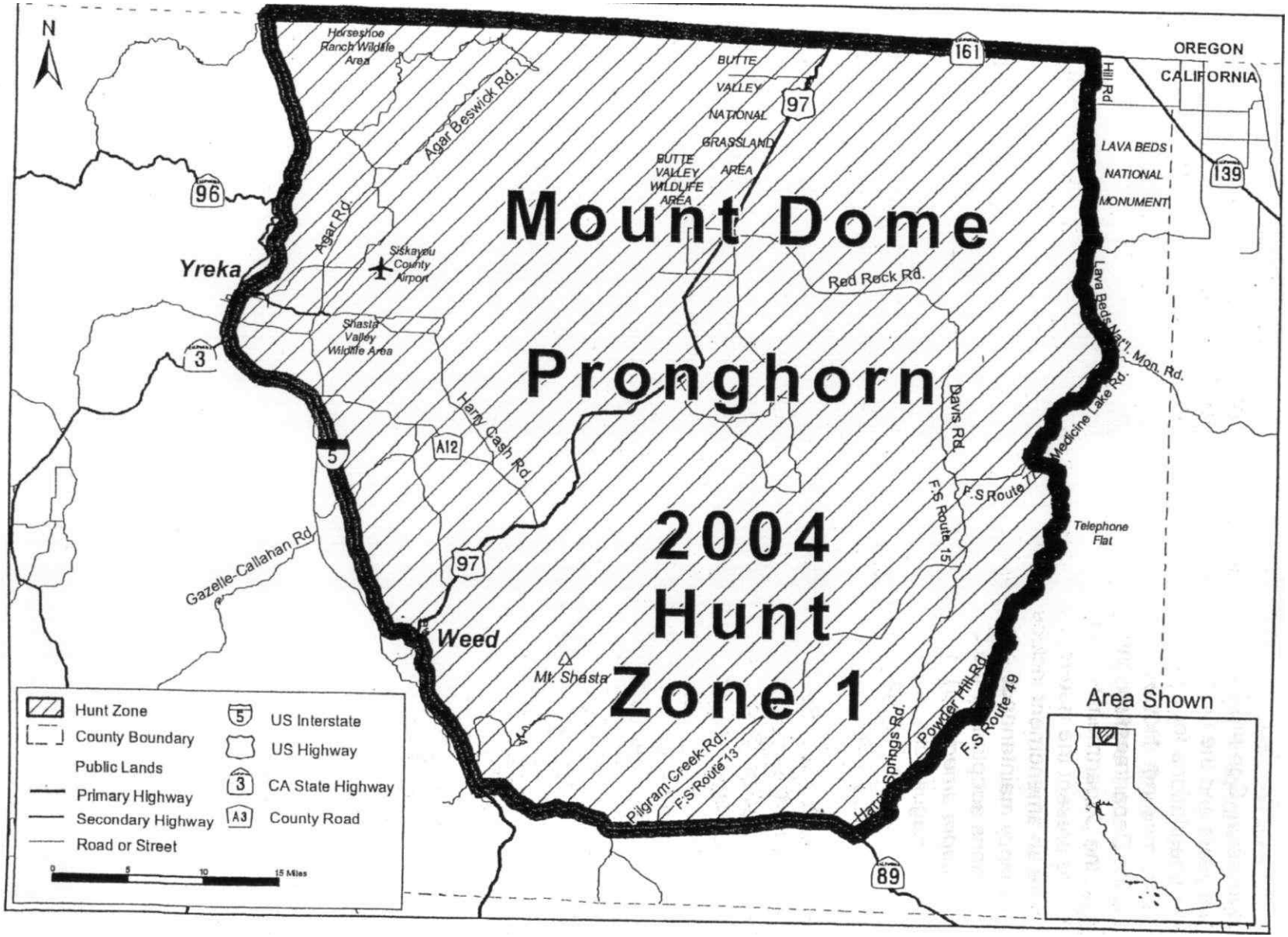

FIGURE 2

Pronghorn 2 004 Hunt Zone 2 - Clear Lake

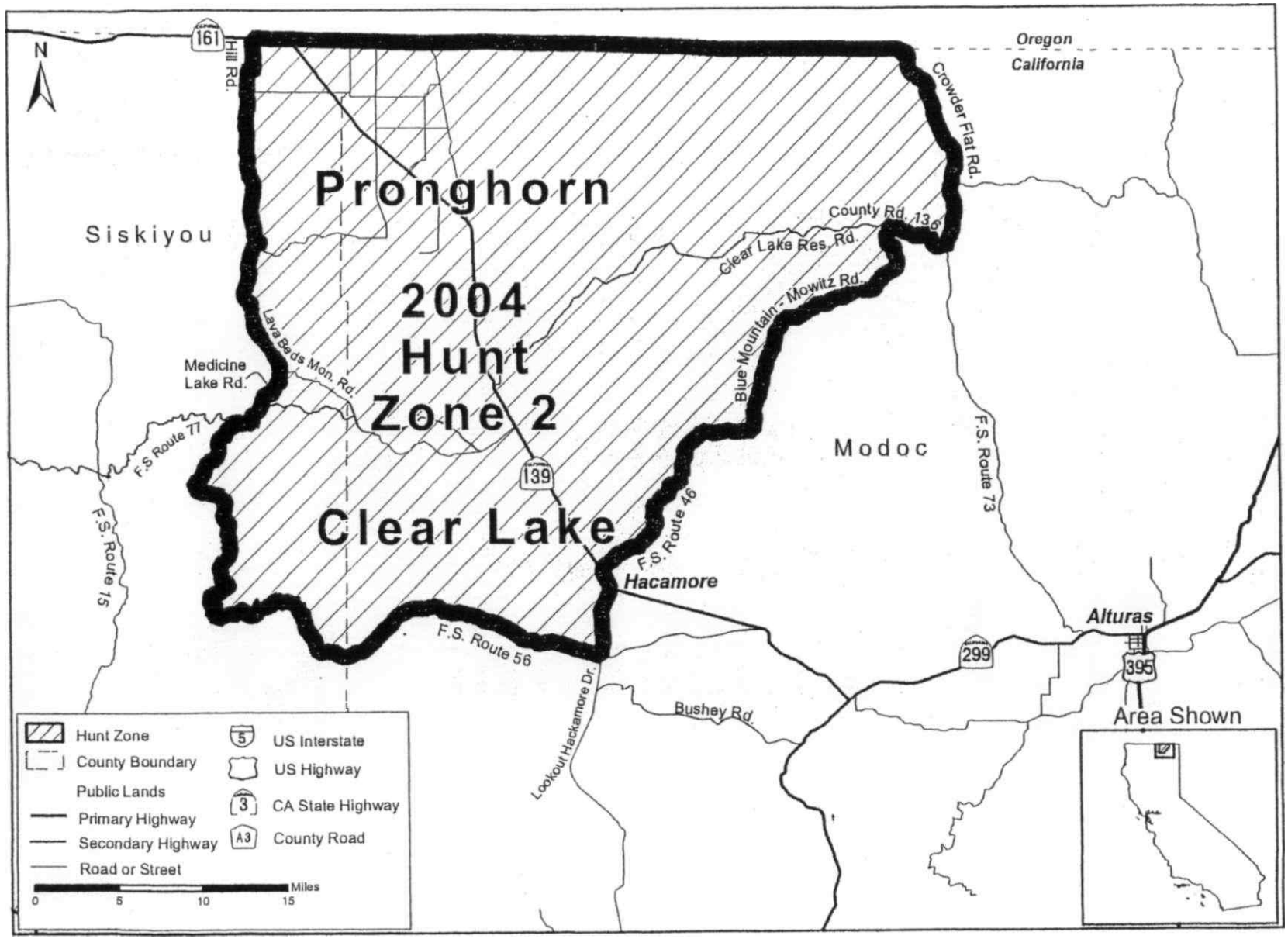

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FIGURE 3

Pronghorn 2004 Hunt Zone 3 - Likely Tables

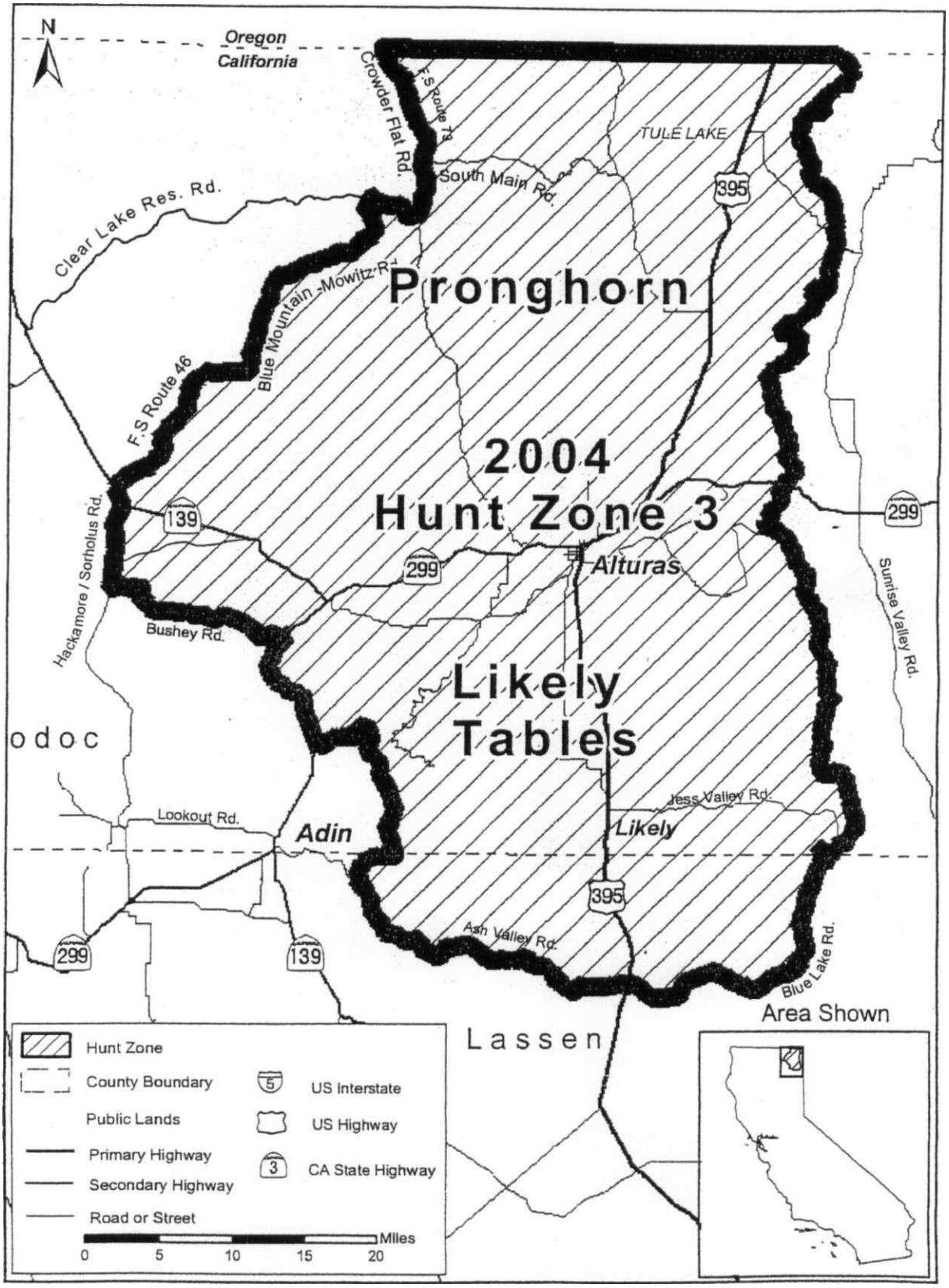


FIGURE 4

Pronghorn 2004 Hunt Zone 4 - Lassen

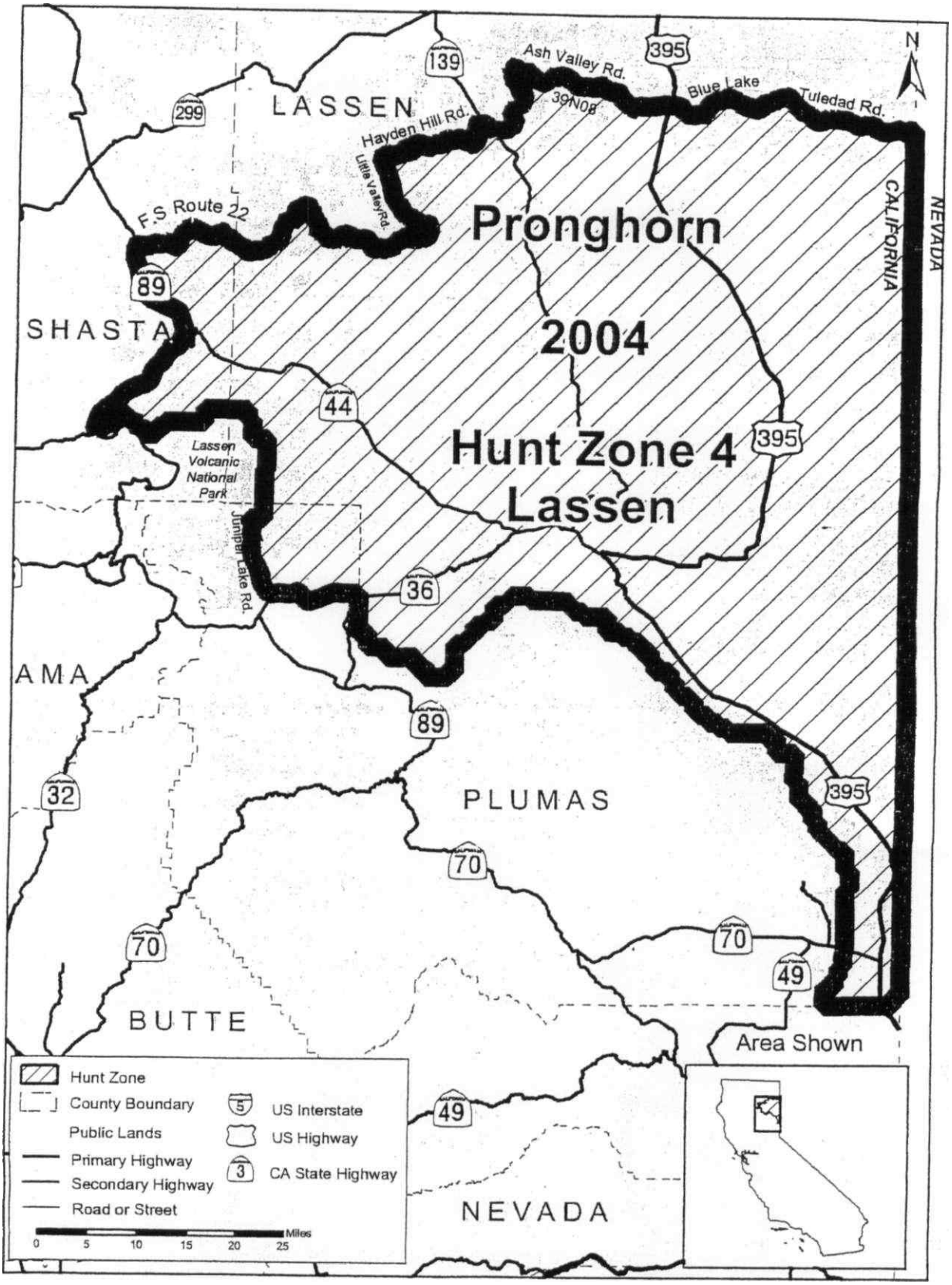


FIGURE 5

Pronghorn 2004 Hunt Zone 5 - Big Valley

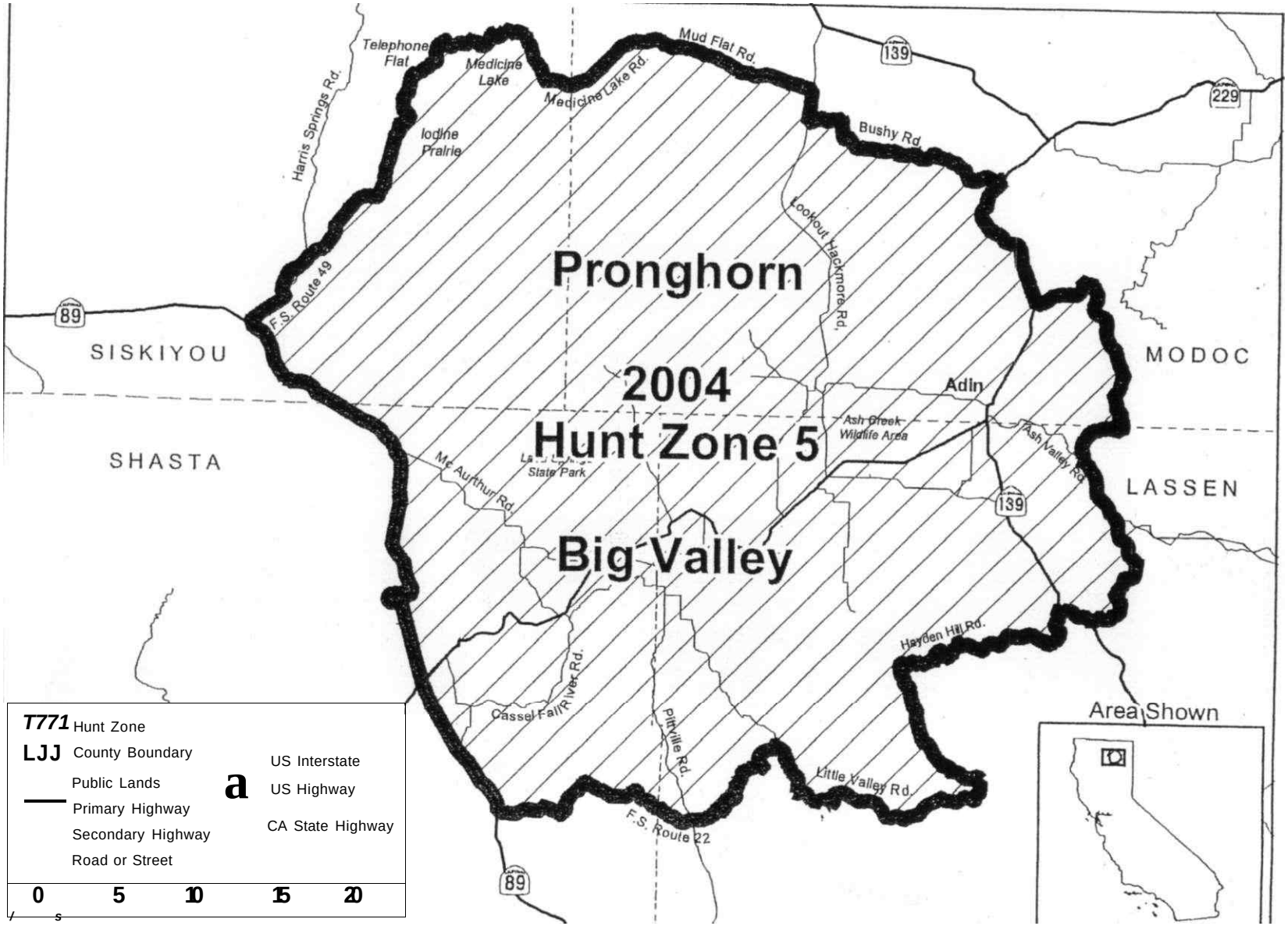


FIGURE 6

Pronghorn 2 00 4 Hunt Zone 6 - Surprise Valley

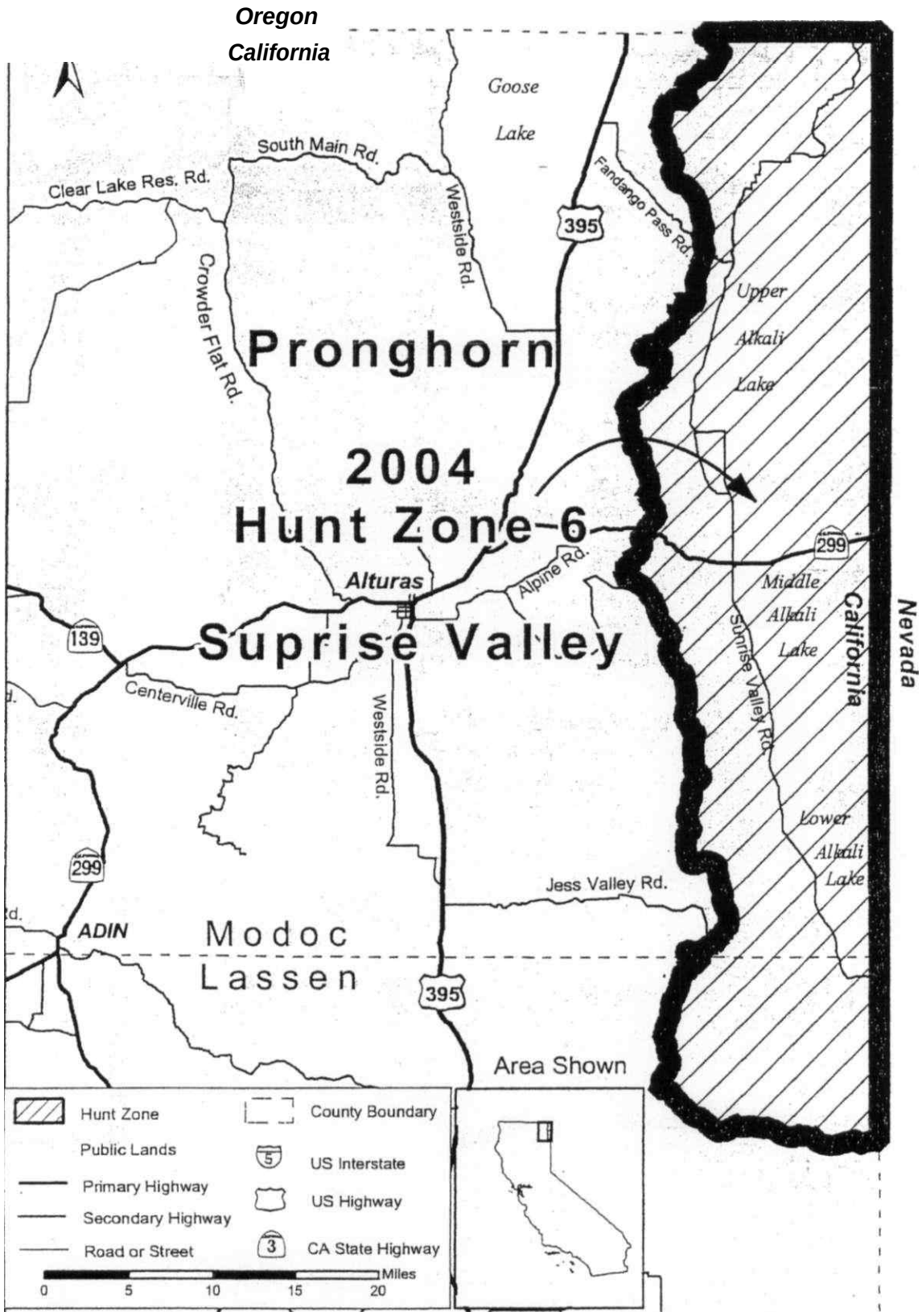


Figure 7
Pronghorn Antelope Private Lands Management Areas

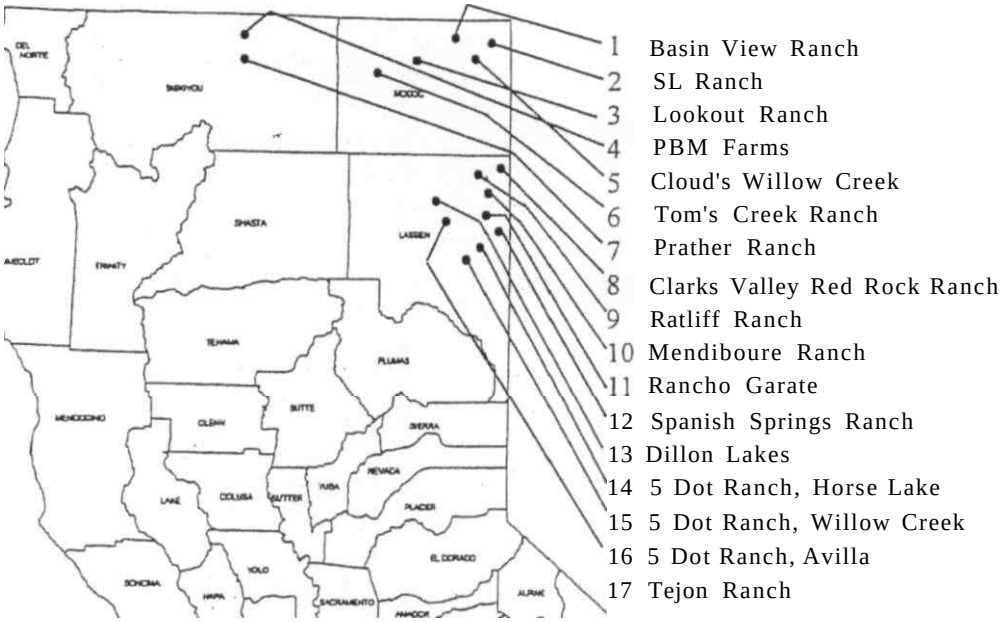
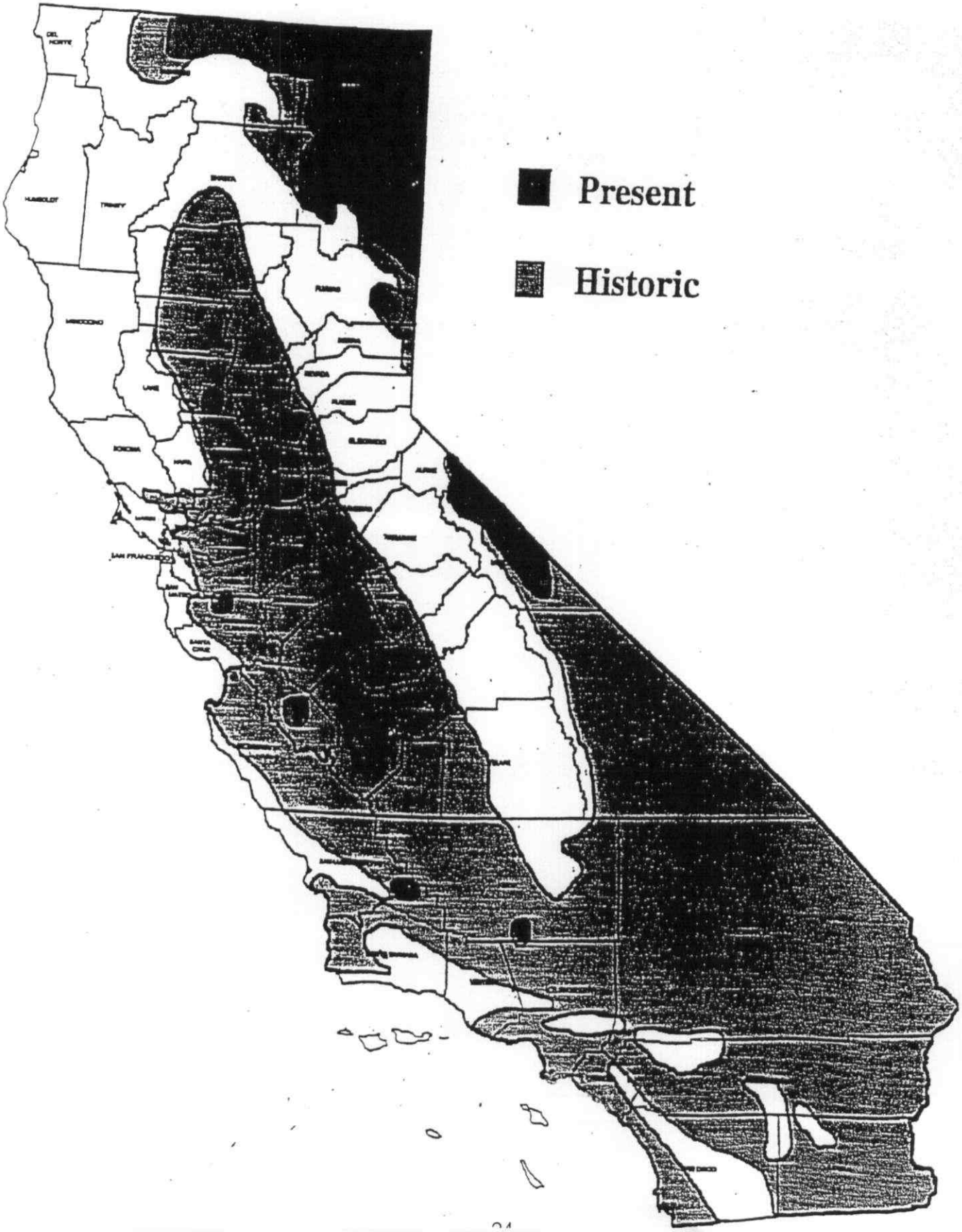


Figure 8
Historic and Present Distribution of Pronghorn Antelope



pronghorn population level exceeds 6700 animals. The proposed project is expected to involve tag quotas within the conservative range for each zone (Table 1). The Department recommends that the Commission adopt a final pronghorn tag quota for 2004 that is within the ranges identified in Table 1 and based on results of the 2004 winter survey (scheduled for late January 2004). The Department analyzed the proposed project and various alternatives and concluded that they will not have a significant adverse impact on the environment.

Based on recommendations from the Department, other agencies, and the public, the Commission may adopt mammal hunting regulations that include pronghorn antelope. In adopting regulations providing for pronghorn antelope hunting, the Commission would be acting pursuant to sections 203, 203.1, 207, 331, 3400-3409, and 3950, Fish and Game Code. The Commission's action would also be consistent with the wildlife conservation policy adopted by the Legislature (Section 1801, Fish and Game Code). The State's wildlife conservation policy contains an objective of providing regulated hunting of wildlife resources where such use is consistent with maintaining healthy and viable wildlife populations.

The Department is recommending that the Commission adopt regulations that provide for limited pronghorn antelope in California. The Department is recommending tag allocations within the ranges listed in Table 1 for each hunt area with the following seasons: archery-only, general, junior, and fund-raising hunts. Based on historic quotas from the past five years, the Department expects that tag quota for 2004 will fall within the conservative harvest range (proposed project).

The proposed project includes the renaming and resetting of boundaries for two junior hunts, and an addition of a third. Existing regulations specify boundaries, season dates, bag/possession limits and the quota for the Ash Creek Junior Pronghorn Antelope Hunt. To improve hunter opportunity and better manage pronghorn antelope, the proposal expands hunt boundaries and extends the season to coincide with boundaries and general season dates for Zone 5 - Big Valley. It renames the hunt as the Big Valley Junior Pronghorn Antelope Hunt. Existing regulations specify boundaries, season dates, bag/possession limits and the quota for Honey Lake Junior Pronghorn Antelope Hunt. To improve hunter opportunity and better manage pronghorn antelope, the proposal expands hunt boundaries and extends the season to coincide with boundaries and general season dates for Zone 4 - Lassen. Because the proposal expands hunt boundaries beyond the Honey Lake Wildlife Area, it renames the Hunt as the Lassen Junior Pronghorn Antelope hunt. Existing regulations make no provision for a Junior Pronghorn Antelope Hunt in Zone 6 - Surprise Valley. The proposal establishes the Surprise Valley Jr. Pronghorn Antelope hunt with boundaries and season dates that coincide with those for Zone 6 - Surprise Valley.

Additionally, up to 120 pronghorn antelope tags will be considered under the Private Lands Wildlife Habitat Enhancement and Management Area (PLM) Program (pursuant to sections 3400-3409, Fish and Game Code, and Section 601, Title 14,

CCR). The PLM quotas will be no more than 10 percent of the allowable harvest for 2004. The expected additional take has been considered in analyzing the effects of the proposed project (see chapters 3 and 4).

The resulting harvest for 2004 will likely be lower than the tag allocation (see Table 1), because hunter success historically has been less than 100 percent. Based on success rates from previous years, the Department expects that the actual harvest will range from 70-80 percent of the pronghorn antelope tag allocation for 2004 (1980-present, Department of Fish and Game data on file in the Wildlife and Inland Fisheries Division, Sacramento, California).

Maximum levels in Table 1 represent the maximum allowable harvest based on an estimated pronghorn antelope population above 6,700 within in the proposed project area. In recent years, post-hunt surveys occurred in the winter and fall and provided a minimum estimate from which to model the current year's tag allocation. It is anticipated that updated population data for 2004 will be available in February to provide the basis for a final tag allocation for 2004.

For northeastern California, the desired population management objective is to maintain a population of 5,600-7,000 pronghorn antelope. A post-hunt buck ratio of at least 24 bucks per 100 does is expected. Population objectives are determined based on the estimated carrying capacity of the available range, productivity of the population (number of fawns produced per 100 does), occurrence and severity of property damage problems, and general health and condition of the animals. The goal statewide is to maintain viable, healthy pronghorn antelope populations with a post-hunt objective ratio of at least 24 bucks per 100 does (see "Project Objectives" section). For PLM areas, an additional goal is to enhance private lands for diverse wildlife species.

The Department is also providing the Commission with a range of alternatives to the proposed project that could feasibly attain the basic objectives of the project. Alternative 1 (no change) would maintain quotas and seasons for each hunt zone without change. Alternative 2 (increased harvest) involves issuing approximately 50 percent more pronghorn antelope license tags than the proposed project. Alternative 3 (reduced harvest) involves issuing approximately 50 percent fewer pronghorn antelope license tags than the proposed project. Except for the junior hunts, this alternative would involve a buck-only harvest. Alternative 4 (increased archery) provides an increased level of archery-only hunting compared to the proposed project. This alternative would increase the archery-only pronghorn antelope tag allocation by approximately 10 percent and reduce the number of general season tags. Alternative 5 (no hunting) would prohibit pronghorn antelope hunting. This alternative would maintain other management activities, such as translocation, at their present level.

EFFECTS ON THE ENVIRONMENT

Table 2 summarizes Department findings that there are no significant long-term adverse impacts associated with the proposed project or any of the project alternatives.

Table 2. Impact Summary:
Proposed Project and Alternative for the 2003 Pronghorn Antelope Hunting Regulations

Alternative	**Significant impact**	**Nature of Impact**	**Mitigation Available**	**Nature of Mitigation**
No Change	No	None	N/A	N/A
Increased Harvest	No	None	N/A	N/A
Reduced Harvest (Bucks Only)	No	None	N/A	N/A
Increased Level of Archery-Only Hunting	No	None	N/A	N/A
No Hunting	No	None	N/A	N/A

PUBLIC INPUT AND AGENCY CONSULTATION

The California Environmental Quality Act (CEQA) encourages public input. One of the primary purposes of the environmental document review process is to obtain public comment, as well as to inform the public and decision makers. It is the intent of the Department to encourage public participation in this environmental review process.

Prior to preparing this environmental document, the Department developed a Notice of Preparation (NOP). In early December, 2003 the NOP was provided to the State Clearinghouse for distribution, as well as to land management agencies in California that have an interest, or play a key role, in pronghorn antelope management [including the U.S. Fish and Wildlife Service (USFWS), Bureau of Land Management (BLM), National Park Service (NPS), and U.S. Forest Service (USFS)]. This NOP was also provided to individuals and/or organizations which expressed an interest in pronghorn antelope management in the past. The NOP requested that any comments regarding the scope of the environmental document be submitted to the Department within 30 days of receipt of the NOP.

The Department has also encouraged public input into the environmental document by scheduling a scoping session to discuss documents prepared in support of mammal hunting and trapping regulations. This scoping session was held in Sacramento on December 11, 2003.

The Department prepared a draft environmental document (DED) regarding pronghorn antelope management (Section 363, Title 14, CCR). The DED was made available for public review on February 2, 2004. It was mailed to 20 individuals and organizations who expressed interest in this issue. The individuals and organizations which received the DED are listed in Appendix 2. Additionally, notice of availability of the DED for public review was provided to the State Clearinghouse, which provided notice of availability to over 880 organizations, including all county governments in California. Notice of availability was also published in 24 major California newspapers. Each of the 24 newspapers has a daily circulation exceeding 50,000. The DED was also made available in the Department's six regional offices and in the Department's Bishop, Eureka, Menlo Park, and San Diego satellite offices. During the 45-day notice period the draft environmental document was available for public review and no comments were received regarding the document. Also, a letter was received from Ms. Terry Roberts, Senior Planner, State Clearinghouse, noting that the Department had complied with the CEQA review requirements for the draft environmental document and that no State agency comments were received.

AREAS OF CONTROVERSY

The Department recognizes that hunting has become a controversial issue opposed by some members of the public because it results in the death of individual animals. On the other hand, hunting provides recreation and food for hunters, and serves as a component of wildlife management. This document addresses the range of public viewpoint (from no hunting to maximum hunting opportunity), as well as intermediate alternatives for managing pronghorn antelope. The areas of controversy that are considered include effects on threatened and endangered species, effects of drought and wildfires, effects of illegal take, effects on individual animals, method of take (e.g., archery equipment), and other factors (see Chapter 4).

ISSUES TO BE RESOLVED

As provided by existing law, the Commission is the decision-making body (lead agency) considering the proposed project, while the Department has responsibility for management activities, such as hunting, translocating pronghorn antelope to suitable historic range, and preparing management plans. It is expected that pronghorn antelope hunts would be considered by the Commission at least once every three years. The primary issue for the Commission to resolve is whether to change pronghorn antelope hunting regulations as an element of pronghorn management. If such changes are authorized, the Commission will specify the areas, seasons, methods of take, bag and possession limit, number of pronghorn antelope to be taken, and other appropriate special conditions.

As proposed, pronghorn antelope hunting (including PLM hunts) would not be independent of other management elements, including providing public viewing opportunities, translocation of animals, natural history study, and interpretive programs

related to pronghorn antelope. Also, hunting could be used in conjunction with translocation to maintain desired population objectives.

CONCLUSION

Adoption of the proposed project by the Commission will result in the death of individual animals. However, surviving individuals in a population may benefit from decreased competition for food and space. Specific safeguards included in the proposed action, such as a limited tag quota, a short season, a public bag limit of one, and close monitoring of the pronghorn antelope population with annual surveys and herd composition counts, should result in a conservative level of hunting mortality. Most significantly, the proposed levels of pronghorn antelope hunting are based on minimum population estimates, age and sex compositions, and pronghorn distribution within hunt zones or areas. Department pronghorn antelope surveys typically underestimate the actual number of animals within an area. Therefore, the proposed tag quotas are biologically conservative, and the removal of individual animals from selected herds (areas) that are considered large and healthy is not expected to significantly reduce population numbers. The proposed project is designed to maintain the herds within the project objectives discussed in this environmental document and the Northeastern California Pronghorn Antelope Management Plan (Department files, Sacramento, California).

Long-term data indicate that production and survival of young animals can replace the animals removed by hunting. The proposed hunting of pronghorn antelope involves a limited number of tags designated for specific areas of California (figures 1-6), and the removal of individual animals will have little influence on the statewide population. Tags will be allocated based on estimated population size, the distribution of pronghorn antelope in the proposed project area, expected hunter success, non-hunting mortality, and the estimated range carrying capacity. The proposed project, which could potentially remove a maximum number of animals as stated in Table 1, is not expected to have a significant adverse impact on either local or statewide populations of pronghorn antelope. The project is expected to only temporarily reduce the number of pronghorn antelope in the project area. The proposed project is consistent with pronghorn management objectives and will help maintain herds in balance with their habitat throughout the State, while providing recreational opportunities for hunters.

The Department's primary management objectives are to conserve and enhance pronghorn antelope and their habitat for the benefit and enjoyment of the people of California; and to maintain healthy, viable pronghorn antelope populations statewide. Pronghorn antelope management guidelines and objectives are discussed in detail in two documents: The Pronghorn Antelope in Northeastern California (Pyshora 1977) and the Northeastern California Pronghorn Antelope Management Plan (Department files, Sacramento, California). These documents were developed to provide management recommendations for pronghorn antelope in northeastern California and to update information on pronghorn antelope translocated to historic range.

CHAPTER 2. PROJECT DESCRIPTION

Management of pronghorn antelope in California is guided by State law, policies of the Commission, and the Department. The underlying goal of pronghorn antelope management is to encourage the conservation, restoration, maintenance, and utilization of the State's pronghorn antelope populations (Section 1801, Fish and Game Code). More specifically, long-term objectives for managing pronghorn antelope in California were developed by the Department (see "Project Objectives").

Discussed in this document is pronghorn antelope hunting. The Department has established specific objectives for population numbers (Northeastern California Pronghorn Management Plan, Department files, Sacramento, California). These objectives are determined based on carrying capacity of the available range, productivity of the population, occurrence and severity of property damage problems, and general health and condition of the animals. These factors were considered in developing the project objectives described in this chapter. Hunting is expected to help dampen the normal, and often large, fluctuations in pronghorn antelope populations that can occur as a result of environmental variation. Hunting is also used to reduce damage to private property, while providing recreational opportunity for some Californians.

PROPOSED PROJECT

The Department proposes to use public hunting to manage pronghorn antelope and provide recreational opportunities. The Department is recommending that the Commission adopt regulations that will provide for limited pronghorn antelope hunting in specific public hunt areas and up to 17 PLM's in California (figures 1-7). Tag quotas for 2004 are based on minimum population estimates, distribution within the proposed project area, mortality, average hunter success, and State law (Section 331, Fish and Game Code).

The proposed project continues hunting as an element of the Department's pronghorn antelope management program. The proposed project is intended to provide a valid recreational opportunity and serve as a mechanism to help maintain population numbers within established objectives or alternatively, to achieve established objectives. The proposed project implements sections 331 and 1801, Fish and Game Code (see Appendix 1 and Department files), as they apply to pronghorn antelope. Pronghorn antelope hunting will not be proposed if the Department determines that pronghorn antelope numbers have declined to a level which may not sustain a healthy and viable population. Regulated hunting is proposed in addition to other management activities that may provide non-consumptive uses of pronghorn antelope. As proposed, hunting is not expected to affect these activities.

The environmental document is intended to provide the Commission and the public with information necessary to evaluate the potential environmental impacts of pronghorn antelope hunting. Although the proposed project considers pronghorn antelope hunting, other aspects of pronghorn antelope management are important to consider. Therefore, this environmental document also addresses other aspects of pronghorn antelope management as they relate to the proposed project and alternatives.

PROJECT LOCATION

The proposed project is located in those portions of Modoc, Lassen, Siskiyou, Shasta, Plumas, and Los Angeles counties described as northeastern California pronghorn antelope hunting zones 1-6, and PLM areas (figures 1-7). The proposed project provides for public hunt areas as follows:

Zone 1: Mount Dome (Figure 1): That portion of Siskiyou County within a line beginning at the junction of Interstate 5 and the California-Oregon state line; east along the California-Oregon state line to the Ainsworth Corners-Lava Beds National Monument Road; south along the Ainsworth Corners-Lava Beds National Monument Road to the Mammoth Crater-Medicine Lake Road; southwest along the Mammoth Crater-Medicine Lake Road to the Medicine Lake-Telephone Flat Road; east and south along the Medicine Lake-Telephone Flat Road to the Telephone Flat-Bartle Road; southwest along the Telephone Flat-Bartle Road to Highway 89; west along Highway 89 to Interstate 5; north along Interstate 5 to the point of beginning.

The Mount Dome area contains 1,518,299 acres of land, of which about half is private and half is public. Primary land uses are livestock grazing and timber production. Development of irrigation has promoted more agricultural crops in this zone, primarily alfalfa and grain. These agricultural developments are highly sought out by pronghorn antelope and have mixed benefits. Pronghorn antelope use of crops as forage can improve the diet, but can also result in increasing the local population above carrying capacity of the native range. Only minor changes in land-use patterns are expected in the next 10 years because of the fairly stable agricultural economy in the project area.

Zone 2: Clear Lake (Figure 2): Those portions of Modoc and Siskiyou counties within a line beginning at the junction of the Lava Beds National Monument Road and the California-Oregon state line at Ainsworth Corners; east along the California-Oregon state line to the Crowder Flat Road; south along the Crowder Flat Road to Modoc County Road 73; south along Modoc County Road 73 to Modoc County Road 136; west along Modoc County Road 136 to the Blue Mountain-Mowitz Road; west and south along the Blue Mountain-Mowitz Road to the Deadhorse Flat-Badger Well Road; southwest along the Deadhorse Flat-Badger Well Road to the Badger Well-Browns Well Road; south along the Badger Well-Browns Well Road to the Sorholus Tank-Hackamore Road; southwest along the Sorholus Tank-Hackamore Road to Highway

139; southeast along Highway 139 to Modoc County Road 91; south along Modoc County Road 91 to the Mud Lake-Mud Springs Road; west along the Mud Lake-Mud Springs Road to the North Main Road; southwest along the North Main Road to the Long Bell-Iodine Prairie Road at Long Bell Forest Service Station; northwest along the Long Bell-Iodine Prairie Road to the Bartle-Telephone Flat Road; north along the Bartle-Telephone Flat Road to the Telephone Flat-Medicine Lake Road; north and west along the Telephone Flat-Medicine Lake Road to the Medicine Lake-Mammoth Crater Road; northeast along the Medicine Lake-Mammoth Crater Road to the Lava Beds National Monument-Ainsworth Corners Road; north along the Lava Beds National Monument-Ainsworth Corners Road to the point of beginning.

The Clear Lake zone contains 715,573 acres of land, of which about 86 percent is public and 14 percent is private. Grazing and farming are the primary uses on private land and, in some instances, can be beneficial to pronghorn antelope. In the past, the Clear Lake population has provided surplus pronghorn antelope for translocation. Future land-use practices likely will enhance conditions for pronghorn antelope because of increased agricultural production.

Zone 3: Likely Tables (Figure 3): Those portions of Modoc and Lassen counties within a line beginning at the junction of the Crowder Flat Road and the California-Oregon state line; east along the California-Oregon state line to the crest of the Warner Mountains; south along the crest of the Warner Mountains to the Summit Trail at Pepperdine Camp; south along the Summit Trail to the South Warner Road near Patterson Forest Service Station; west along the South Warner Road to the Long Valley-Clarks Valley Road; south along the Long Valley-Clarks Valley Road to the Clarks Valley-Madeline Road; west along the Clarks Valley-Madeline Road to Highway 395 at the town of Madeline; north along Highway 395 to the Madeline-Adin Road; northwest along the Madeline-Adin Road to the Hunsinger Draw-Sweagert Flat Road; east and north along the Hunsinger Draw-Sweagert Flat Road to the Sweagert Flat-Hunters Ridge Road; north and west along the Sweagert Flat-Hunters Ridge Road to Highway 299 near Lower Rush Creek Recreation Site; north along Highway 299 to the Canby Bridge-Cottonwood Flat Road; northwest along the Canby Bridge-Cottonwood Flat Road to the Cottonwood Flat-Happy Camp Road; northwest along the Cottonwood Flat-Happy Camp Road to Modoc County Road 91; north along Modoc County Road 91 to Highway 139; north along Highway 139 to the Hackamore-Sorholus Tank Road; northeast along the Hackamore-Sorholus Tank Road to the Browns Well-Badger Well Road; north along the Browns Well-Badger Well Road to the Badger Well-Deadhorse Flat Road; northeast and east along the Badger Well-Deadhorse Flat Road to the Mowitz-Blue Mountain Road; north and east along the Mowitz-Blue Mountain Road to Modoc County Road 136; east along Modoc County Road 136 to Modoc County Road 73; north along Modoc County Road 73 to the Crowder Flat Road; north along the Crowder Flat Road to the point of beginning.

The Likely Tables zone contains 1,453,692 acres of land, of which about 70 percent is public and 30 percent is private. Grazing and alfalfa production are primary agricultural uses. Urban expansion in the Alturas area has eliminated a few square miles of pronghorn antelope range, but with more than one million acres of public land, impacts of urbanization are not yet significant in the Likely Tables zone.

Zone 4: Lassen (Figure 4): Those portions of Lassen, Plumas, and Shasta counties within a line beginning at the junction of Highway 36 and the Juniper Lake Road in the town of Chester; north along the Juniper Lake Road to the Lassen National Park boundary; north and west along the Lassen National Park boundary to Highway 89; north along Highway 89 to U.S. Forest Service Road 22 near the Hat Creek Ranger Station; east along U.S. Forest Service Road 22 to U.S. Forest Service Road 35N06; east and north along U.S. Forest Service Road 35N06 to the State Game Refuge 1S boundary; northwest along the State Game Refuge 1S boundary to the Coyote Canyon-Dixie Valley Road; northwest along the Coyote Canyon-Dixie Valley Road to the Dixie Valley-Boyd Hill Road; northwest along the Dixie Valley-Boyd Hill Road to the Snag Hill-Hayden Hill Road; northeast and north along the Snag Hill-Hayden Hill Road to Highway 139; southeast on Highway 139 to the Willow Creek-Hunsinger Flat Road; northeast and northwest along the Willow Creek-Hunsinger Flat Road to the Adin-Madeline Road; southeast along the Adin-Madeline Road to Highway 395 at the town of Madeline; south along Highway 395 to the Madeline-Clarks Valley Road; east along the Madeline-Clarks Valley Road to the Clarks Valley-Tuledad Road; east and southeast along the Clarks Valley-Tuledad Road to the California-Nevada state line; south along the California-Nevada state line to the Lassen-Sierra County line; west along the Lassen-Sierra County line to the Lassen-Plumas County line; north and west along the Lassen-Plumas County line to Highway 36; west along Highway 36 to the point of beginning.

The Lassen zone contains 2,579,115 acres of land, of which about 60 percent is public and 40 percent is private. Primary land uses are farming and timber production. Pronghorn antelope in this area were severely reduced in number during the winter of 1951-52. The population subsequently recovered, but sharply declined again during the 1992-93 winter. High-quality summer forage, such as on agricultural lands, is not prevalent in this zone. Pronghorn antelope in this zone are more reliant on native range compared to animals in other zones. Because of this, their numbers are expected to vary more with changing environmental conditions.

Zone 5: Big Valley (Figure 5): Those portions of Modoc, Lassen, Shasta, and Siskiyou counties within a line beginning at the intersection of highways 299 and 89; north and northwest along Highway 89 to the Bartle-Telephone Flat Road; northeast along the Bartle-Telephone Flat Road to the Iodine Prairie-Long Bell Road; southeast along the Iodine Prairie-Long Bell Road to the North Main Road at Long Bell Forest Service Station; northeast along the North Main Road and the Mud Springs-Mud Lake Road to Modoc County Road 91; south along Modoc County Road 91 to the Happy Camp-Cottonwood Flat Road; southeast along the Happy Camp-Cottonwood Flat Road

to the Cottonwood Flat-Canby Bridge Road; southeast along the Cottonwood Flat-Canby Bridge Road to Highway 299; south along Highway 299 to the Hunters Ridge-Sweagert Flat Road near Lower Rush Creek Recreation Site; east and south along the Hunters Ridge-Sweagert Flat Road to the Sweagert Flat-Hunsinger Draw Road; south and west along the Sweagert Flat-Hunsinger Draw Road to the Adin-Madeline Road; southeast along the Adin-Madeline Road to the Hunsinger Flat-Willow Creek Road; southeast and southwest along the Hunsinger Flat-Willow Creek Road to Highway 139; northwest along Highway 139 to the Hayden Hill-Snag Hill Road; south and southwest along the Hayden Hill-Snag Hill Road to the Boyd Hill-Dixie Valley Road; southeast along the Boyd Hill-Dixie Valley Road to the Dixie Valley-Coyote Canyon Road; southeast along the Dixie Valley-Coyote Canyon Road to the State Game Refuge 1S boundary; southeast along the State Game Refuge 1S boundary to U.S. Forest Service Road 35N06; south and west along U.S. Forest Service Road 35N06 to U.S. Forest Service Road 22; west along U.S. Forest Service Road 22 to Highway 89 near the Hat Creek Ranger Station; north along Highway 89 to the point of beginning.

The Big Valley zone contains 1,145,627 acres of land, of which about 34 percent is public and 66 percent is private. Agricultural production is high. Alfalfa, grain, and irrigated crops are predominant and the potential to provide food for pronghorn antelope is artificially high, because much of the habitat has been altered by agricultural development. Pronghorn antelope numbers declined sharply in this zone as a result of the 1992-93 winter.

Zone 6: Surprise Valley (Figure 6): Those portions of Modoc and Lassen counties within a line beginning at the intersection of the crest of the Warner Mountains and the California-Oregon state line; east along the California-Oregon state line to the California-Nevada state line; south along the California-Nevada state line to the Tuledad-Clarks Valley Road; west and northwest along the Tuledad-Clarks Valley Road to the Clarks Valley-Long Valley Road; north on the Clarks Valley-Long Valley Road to the South Warner Road; east along the South Warner Road to the Summit Trail near Patterson Guard Station; north along the Summit Trail to the crest of the Warner Mountains at Pepperdine Camp; north along the crest of the Warner Mountains to the point of beginning.

The Surprise Valley zone contains 522,746 acres of land, of which about 85 percent is public and 15 percent is private. Livestock grazing and hay production are the primary uses of private land. Agricultural production is high with alfalfa, grain, and irrigated crops as the major farm operations. No significant changes to the environment are expected in the next several years.

Lassen Junior Pronghorn Antelope Hunt: The proposal expands hunt boundaries and extends the season to coincide with boundaries and general season dates for Zone 4 - Lassen (Figure 4). Because the proposal expands hunt boundaries beyond the Honey Lake Wildlife Area, it renames the hunt as the Lassen Junior Pronghorn Antelope Hunt.

Big Valley Junior Pronghorn Antelope Hunt: The proposal expands hunt boundaries and extends the season to coincide with boundaries and general season dates for Zone 5- Big Valley (Figure 5). It renames the Hunt as the Big Valley Junior Pronghorn Antelope Hunt.

Surprise Valley Junior Pronghorn Antelope Hunt: Boundaries and season dates coincide with those for Zone 6 - Surprise Valley (Figure 6). It is named Surprise Valley Junior Pronghorn Antelope Hunt.

Fund-Raising Hunt Area (figures 1-6): Those areas in northeastern California described as pronghorn antelope management zones 1-6 (as described in "Project Location").

The proposed project also provides for pronghorn antelope hunting under the PLM Program. During 2003, PLM hunts for pronghorn antelope occurred at the following ranches: Ratliff Ranch, Clarks Valley-Red Rock Ranch, 5 Dot Ranch (Horse Lake, Auila, and Willow Creek units), Mendiboure Ranch, Clouds Warner, Toms Creek, and Tejon Ranch (Figure 7). During 2004, the Department does not expect major changes to the PLM participants identified in Figure 7.

PROJECT OBJECTIVES

Objectives of the proposed project are to maintain a healthy pronghorn antelope population statewide and provide biologically appropriate public hunting opportunities. The Department desires to maintain a population of 5,600-7,000 animals in northeastern California, 300 animals within the Carrizo Plains area, and a minimum of 100 animals within the Tejon Ranch area.

Specifically, the Department is recommending that the Commission adopt hunting regulations related to pronghorn antelope that will provide for the following:

1. Allocating tags within the ranges identified in Table 1 for each of the six pronghorn antelope hunt zones in northeastern California (figures 1-6), the Big Valley, Lassen, and Surprise Valley Junior hunts (figures 4-6), and the fund raising hunt.

2. Establish pronghorn antelope hunting season dates as follows. For zones 1, 2, 5, and 6 in northeastern California, the general season shall consist of one period which shall open on the Saturday following the third Wednesday in August and extend for nine consecutive days. For zones 3 and 4, the general season shall consist of two periods, each extending for nine consecutive

days. Period 1 shall open on the Saturday following the third Wednesday in August, whereas period 2 shall open on the first Saturday in September. The season for archery-only tag holders in zones 1-6 shall open 14 days prior to the earliest general season period and extend for nine consecutive days. The junior pronghorn antelope season shall open on the Saturday following the third Wednesday in August and extend for nine consecutive days. Within the Honey Lake Wildlife Area, the Fleming and Dakin units shall only be open to junior hunters on Saturdays and Sundays during the season. The fund-raising hunt season shall open on the Saturday before the first Wednesday in August and continue for 51 consecutive days.

3. Provide a bag and possession limit of one pronghorn antelope per season for public hunts.

4. Establish methods of take for pronghorn antelope hunts. For archery-only pronghorn antelope license tags, only archery equipment as described in Section 354, Title 14, CCR may be used. For all other pronghorn antelope license tags, legal firearms and archery equipment, as described in sections 353 and 354, Title 14, CCR, may be used to take pronghorn antelope.

5. Establish a $7.00 nonrefundable application fee for all pronghorn antelope license tag applicants.

6. Establish a $99.75 pronghorn antelope license tag fee to be paid by successful applicants as required by sections 331 and 713 of the Fish and Game Code.

7. Establish procedures for distributing license tags by public drawing and fund-raising events. For the public drawing, applications must be received at the Department's License and Revenue Branch by 5:00 p.m. the first business day after June 1st. Successful applicants will be determined by random drawing within 10 days of the application deadline. Up to six tags will be sold as fund-raising tags pursuant to Section 331 of the Fish and Game Code.

8. Require both successful and unsuccessful tag holders to return pronghorn antelope tags to the Department within one week of the close of the season.

9. Define buck, doe, and either-sex pronghorn antelope for the purpose of the proposed regulation.

10. Provide up to 120 license tags statewide under the PLM Program. No more than 10 percent of the allowable harvest will be allotted to the PLM Program.

11. Establish other regulations and conditions pertaining to pronghorn antelope hunting as specified in sections 363 and 708, Title 14, CCR.

The Department's pronghorn antelope management strategies and population goals are based on the Northeastern California Pronghorn Antelope Management Plan (Department files, Sacramento, California). The primary objective of the Department's pronghorn antelope management program is to maintain a healthy, productive population.

Specific population goals have been determined by considering recent (since 1982) reproductive rates, herd composition ratios (fawns, bucks, and does), property damage problems (California Department of Fish and Game data and files, Wildlife Programs Branch, Redding and Sacramento, California), and trends in range condition and use as they determine availability and quality of forage and habitat. Population models were used to test population goals and develop harvest strategies for each zone and area (D.O. Smith, California Department of Fish and Game, Redding, California; D.R. Updike, California Department of Fish and Game, Sacramento, California). Harvest recommendations were based on estimated population size, distribution of pronghorn antelope in the project area, desired buck-to-doe ratio, hunting and non-hunting mortality, and the number of animals desired for translocation.

Hunting strategies are designed to achieve and maintain specific herd goals. The harvest strategy for northeastern California for 2004 is intended to allow the take of five to six percent of the population estimate based on the winter survey, and is intended to result in a post-hunt ratio of at least 24 bucks per 100 does. By cautiously working toward management goals, an annual assessment can be made regarding the overall effectiveness of managing pronghorn antelope in California. Desired buck-to-doe ratios in California are slightly higher than many other states. The most often prescribed buck-to-doe ratio goal for managing pronghorn in the western United States is 20 to 100, because it is considered a "biologically safe" post-harvest objective, leaving enough bucks to meet all breeding requirements (Salwasser 1980, Tsukamoto 1983).

The population models (ANTQUOTA and KILLVARY) used to predict effects of harvest strategies include non-hunting mortality factors. However, the Department would not recommend hunting in a given area if the population was not viable and healthy as determined by surveys. Any significant mortality factors occurring after the survey and prior to the proposed hunting season could be at least partially alleviated by the Commission with emergency action if necessary.

THE MANAGEMENT OF PRONGHORN ANTELOPE IN CALIFORNIA

Historical Perspective of Pronghorn Antelope Management

Pronghorn antelope are native to California and western North America. Accounts from journals and diaries of early explorers indicate that pronghorn antelope inhabited much of the grasslands, oak woodlands, and sagebrush-steppe vegetation communities in California. Figure 8 illustrates historic pronghorn antelope distribution in California.

The pronghorn antelope inhabiting northeastern California are believed to be of the subspecies *A. a. oregona* or *A. a. americana* (OGara 1978, Lee et al. 1994). Pronghorn antelope which historically inhabited the Central Valley were described as *A. a. americana* (Hall and Kelson 1959). Possibly two subspecies, Sonoran pronghorn antelope *(A. a. sonoriensis)* and Peninsular pronghorn antelope *{A.* a. *peninsularis),* inhabited southern California during pristine times (Stephens 1921, Arizona Game and Fish Department 1981).

Pronghorn antelope density in the San Joaquin Valley of central California was reported to be greater than in any area west of the Mississippi River (Hjersman 1958). Pronghorn antelope meat was the cheapest available in San Francisco prior to 1855, confirming the species abundance (Hjersman 1958). For a 20 year period following the 1848 discovery of gold, pronghorn antelope numbers statewide were drastically reduced due to market shooting, poaching, livestock competition, changes in land-use patterns, agriculture, and other disturbances brought by European settlers. In 1852, a law enacted by the California Legislature prohibited hunting pronghorn antelope for six months of the year (Chapter LXI, sections 1-4). However, with no enforcement, this law was ineffective. In 1883, pronghorn antelope, elk, and mountain sheep were afforded a further level of protection by the Legislature (Chapter XLIII, Section 626). But again, there was little enforcement.

By the early 1900s, pronghorn antelope numbers in California totaled only a few thousand. By 1923, there were less than 1,000 animals reported in seven areas of the State. By the mid 1940s, they were known to occur only in northeastern California, but their numbers had increased four-fold from levels reported in 1923. With the rapid recovery, complete protection of pronghorn antelope from hunting was repealed in 1941, thereby enabling limited hunting.

Figure 8
Historic and Present Distribution of Pronghorn Antelope

Current Management Activities (1942 through the Present)

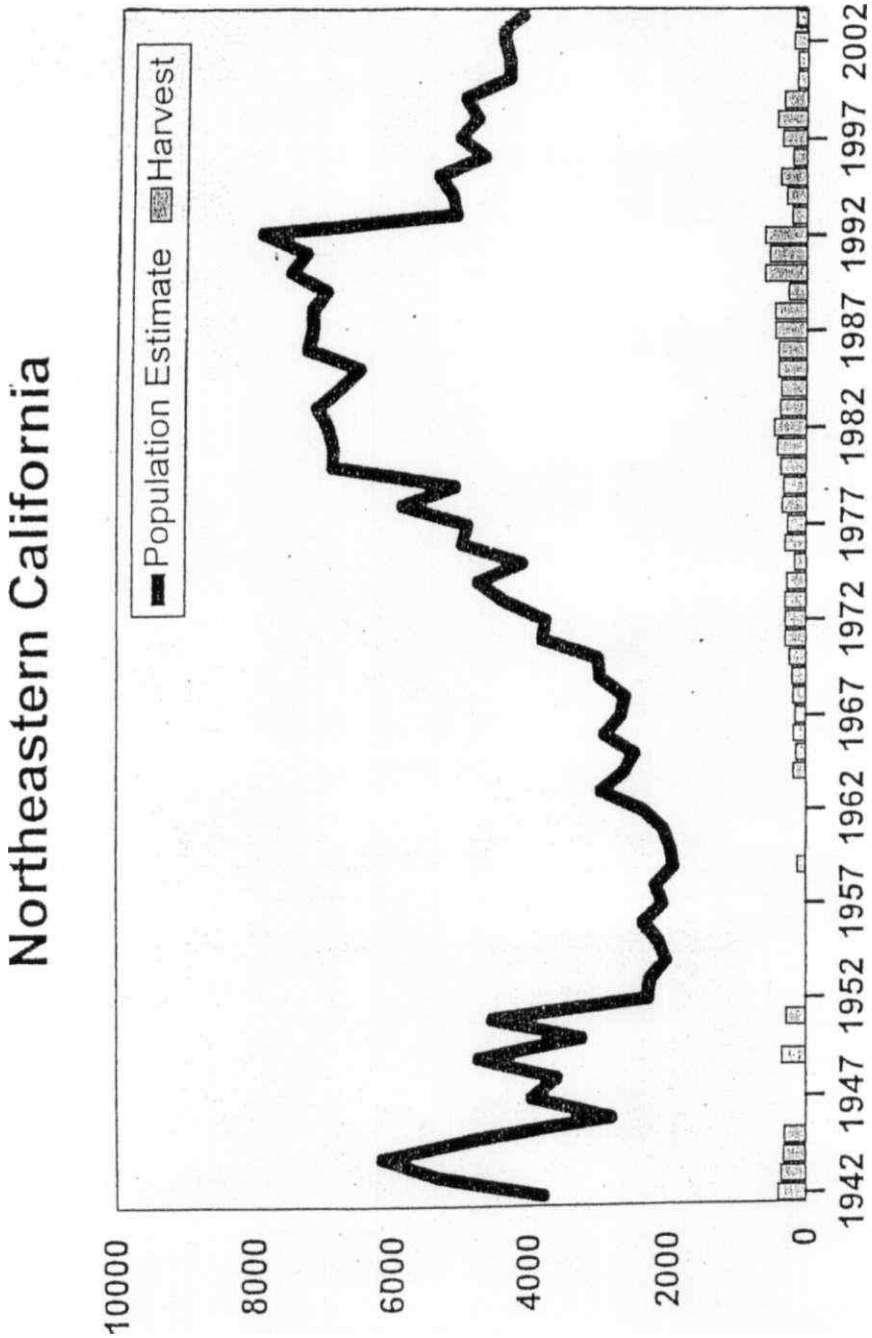
Pronghorn antelope hunts in northeastern California occurred sporadically from 1942-64 (Figure 9), and annually since 1964 (Table 3). Figure 9 shows the pronghorn antelope population trend in northeastern California from 1940-2003, based on annual surveys conducted by the Department. Population numbers declined to approximately 2,000 animals prior to 1960. After 1960, the statewide pronghorn antelope population gradually increased until 1992, when California supported more than 8,000 animals. Population numbers declined as a result of severe conditions in northeastern California during the 1992-93 winter. Although population numbers have not yet recovered to their 1992 levels, the current population is well above levels recorded during the 1950s.

Throughout the western states, pronghorn antelope numbers tend to steadily increase under favorable environmental conditions, with rapid declines under severe weather conditions (i.e., snow). Since the 1950s, the statewide population has more than doubled to approximately 5,500 animals (Department of Fish and Game, Sacramento, California).

Increased agricultural production (alfalfa and grain crops) and water development on public land have likely benefited pronghorn antelope in California by improving forage on private lands (Pyrah 1987). Conservation and law enforcement policies and increased attention toward pronghorn antelope management were possible factors that contributed to the population increase.

Translocation of pronghorn antelope to unoccupied historic range has been ongoing since the 1940s as funding was available and suitable sites were identified (Figure 8). In total, 1,092 pronghorn antelope have successfully been translocated to historic range since 1947 (Table 4). Pronghorn antelope have been reintroduced to seven areas of the State, including Colusa, San Luis Obispo, Mono, Kern, Los Angeles, Santa Clara, San Benito, and Monterey counties (Figure 8). Additional translocation projects are anticipated in the future, pending the availability of surplus animals. Translocation and hunting are the primary means of alleviating property damage problems, because California has no legal provision for issuing depredation permits to kill pronghorn antelope causing damage.

Figure 9
Northeastern California Pronghorn Antelope population numbers, 1942 to present. Population numbers are based on results of annual winter census using fixed-wing aircraft. Harvest numbers are based on tag returns.



Year	Total Harvest	General						Archery-Only	Fund-Raising Hunt	Big Valley Jr. Hunt	Lassen Jr. Hunt	Surprise Valley Jr. Hunt	Carrizo Hunt
		Mt. Dome	Clear Lake	Likely Tables	Lassen	Big Valley	Surprise Valley						
1964	183												
1965	141												
1966	179												
1967	156												
1968	189												
1969	204												
1970	241												
1971	303												
1972	301												
1973	305												
1974	284												
1975	170												
1976	306												
1977	271												
1978	352												
1979	329												
1980	390												
1981	450												
1982	497	99	71	167	74	51	18	17					
1983	448	48	69	155	94	40	26	16					
1984	439	72	65	192	18	51	14	17					
1985	415	60	82	95	110	32	11	21					
1986	505	33	148	131	103	49	18	23					
1987	552	65	158	141	104	53	12	19					
1988	538	78	98	160	109	46	8	29					
1989	303	9	65	148	23	16	24	18					
1990	717	72	70	240	246	49	40	27					
1991	753	76	74	229	244	61	38	31					
1992	1,167	107	114	353	402	107	41	35	8	8			
1993	195	17	19	55	57	14	13	6	4	5	5		
1994	270	25	24	83	84	23	11	10	4	1	5		
1995	371	34	36	125	119	23	10	13	4	3	4		
1996	188	17	18	58	57	8	8	5	2	5	5		5
1997	363	33	35	110	127	24	11	10	3	5	2		3
1998	297	20	19	114	104	12	12	9	3	0	2		2
1999	347	29	23	128	116	17	12	10	3	2	2		5
2000	156	4	11	57	56	9	10	3	1	1	2		2
2001	149	2	9	59	55	6	9	3	1	2	2		1
2002	205	5	10	81	81	5	10	8	2	1	2		
2003	191	5	11	76	73	6	10	4	2	2	2		

"Does not include PLM harvest (See Table 9 for PLM harvest).

Table 4. Pronghorn Antelope Translocation Projects
(modified from Pyshora 1988, Department of Fish and Game files)

Year	Number Trapped	Number Released	Release Site
1947	32	32	Mono County
1949-50	141	113	Mono County
1977	77	74	Mono County
1982	88	82	Mono and Lassen counties
1984	25	24	Mono County
1985	113	110	Mono and Kern counties
1987	125	120	San Luis Obispo and Kern counties
1988	269	261	San Luis Obispo and San Benito counties
1990	288	276	San Luis Obispo, San Benito, Santa Clara, Monterey, and Colusa counties.
TOTAL	1,158	1,092	

PRIVATE LANDS WILDLIFE HABITAT ENHANCEMENT AND MANAGEMENT AREA (PLM) PROGRAM

In addition to public pronghorn antelope hunting, the Commission authorizes pronghorn antelope hunting on PLM's. The PLM Program was authorized by the Legislature (sections 3400-3409, Fish and Game Code) to protect and improve wildlife habitat by encouraging private landowners to manage their property to benefit fish and wildlife. Economic incentives are provided to landowners through biologically sound yet flexible seasons for game species resulting in high-quality hunting opportunities which may be marketed by the landowner in the form of fee hunting or other forms of recreation. Section 601, Title 14, CCR, contains regulations adopted by the Commission and sections 3400-3409, Fish and Game Code, contain the statutes pertaining to the PLM Program.

The Program included 75 licensed properties during 2003, representing wildlife management and protection on about 850,000 acres of important privately owned wildlife habitat. In comparison, the Department owns and manages approximately 750,000 acres statewide. Thirteen licensed properties have participated in the PLM program and offered pronghorn antelope hunting opportunities during recent years

(Figure 7). In total, 12 pronghorn antelope tags were issued through the PLM program in 2003. The Department anticipates the addition of up to two new properties during 2004. Effects of the PLM harvest with regard to the proposed project are discussed in Chapter 4.

Landowners have always had the right to charge access fees for hunting, fishing, and other recreational activities on their property. The PLM Program allows the Commission to further authorize hunting season's specific to licensed PLM areas, pursuant to goals and objectives of the Northeastern California Pronghorn Antelope Management Plan and individual PLM management plans. In addition, hunters wishing to hunt a buck pronghorn antelope on a PLM area are not subject to the 10-year waiting period prescribed in Section 363, Title 14, CCR, after purchasing a buck pronghorn antelope license tag through the public hunting program. The total number of pronghorn antelope taken on PLM areas is set under conditions of each area license. However, individual hunters may obtain a tag for more than one PLM area.

Department staff evaluates habitat improvement proposals during the management plan review process prior to license approval. The Commission also reviews all management plans prior to final approval. Many of the larger improvements which have the potential for significant environmental modification, (e.g. controlled burns designed to benefit early successional stage species) are accomplished under State or Federal cost-sharing assistance programs. These programs often use environmental checklists to provide an environmental review for habitat improvement projects.

INTENDED USES OF THE ENVIRONMENTAL DOCUMENT

This environmental document has been prepared to assess potential impacts of hunting pronghorn antelope in California. The Department prepared the environmental document on behalf of the Commission in accordance with CEQA and the "CEQA Guidelines," consistent with the Commission's certified regulatory program (see Section 781.5, Title 14, CCR, Section 21080.5, Public Resources Code, and Section 15251 (b), CEQA Guidelines). The document is an informational item to aid the Commission in the decision-making process and to inform the public of potential effects of hunting pronghorn antelope. In this regard, the environmental document analyzes and describes the prospect of environmental impacts that might result from the Department's recommendation and alternatives to that proposal, including analysis of issues such as depredation, illegal kill habitat loss, the PLM Program, and other related environmental issues.

The Commission has approved public pronghorn antelope hunting in California annually since 1964, and, since 1990, has done so with the benefit of an environmental document prepared by the Department on its behalf, in accordance with CEQA. From a biological perspective, annual hunting is part of the existing conditions for the pronghorn

antelope population statewide. Against this backdrop, the Department is recommending, in particular, that the Commission adjust the tag quotas for some individual hunts in 2004, which will alter the total public tag quota compared to the level authorized in 2003. The Department is also recommending establishment of a new Junior Pronghorn Hunt (Surprise Valley), and modification of zones, season dates, and other conditions for existing junior Hunts. A more detailed discussion of the Department's recommendations for 2004 can be found in the Project Objectives section.

Finally, where appropriate, the environmental impact analysis that follows may refer to and incorporate by reference information contained in previous environmental documents. Any future recommendations to the Commission by the Department regarding pronghorn antelope hunting may also take the same approach. In addition, if substantial changes occur in the project itself, or if new information reveals new or substantially more severe environmental impacts than previously disclosed or analyzed, a subsequent environmental document or a supplement to a previously adopted environmental document will be prepared [see *Wildlife Alive v. Chickering* (1976) 18 Cal.3d 190; Section 21166, Public Resources Code].

THE FUNCTIONAL EQUIVALENT

CEQA requires public agencies in the State to evaluate environmental impacts of projects that they approve or carry out that may have a potential to significantly affect the environment. Most agencies satisfy this requirement by preparing an environmental impact report (EIR) or a mitigated negative declaration (ND). However, an alternative to the EIR/ND requirement has been created for State agencies whose activities include the protection of the environment within their regulatory programs. Under this alternative, State regulatory agencies may request certification of their regulatory programs from the Secretary for Resources, after which the agency may prepare a functionally equivalent environmental document in lieu of an EIR or ND (Section 21080.5, Public Resources Code; and Section 15251, CEQA Guidelines). The regulatory program of the Commission has been certified by the Secretary for Resources, and the Commission is eligible to submit this environmental document in lieu of an EIR or ND (Section 15252, CEQA Guidelines).

This environmental document contains a description and analysis of the proposed action, cumulative impacts, and alternatives to the proposed project. In addition, it contains a discussion of relevant policies of the Legislature and the Commission. These policies are contained in Section 781.5, Title 14, CCR. The environmental document presents information to allow a comparison of the potential environmental effects of various levels of hunting. Although an alternative may not achieve the proposed project's objectives, it is considered to provide the Commission and the public with additional information related to the options available. Both hunting and non-hunting alternatives are considered.

CHAPTER 3. ENVIRONMENTAL SETTING OF THE PROJECT

The Legislature formulates laws and policies regulating the management offish and wildlife in California. The general wildlife conservation policy of the State is to encourage the conservation and maintenance of wildlife resources under the jurisdiction and influence of the State (Section 1801, Fish and Game Code). The policy includes several objectives, as follows:

1. To provide for the beneficial use and enjoyment of wildlife by all citizens of the State;

2. To perpetuate all species of wildlife for their intrinsic and ecological values, as well as for their direct benefits to man;

3. To provide for aesthetic, educational, and non-appropriative uses of the various wildlife species;

4. To maintain diversified recreational uses of wildlife, including hunting, as proper uses of certain designated species of wildlife, subject to regulations consistent with the maintenance of healthy, viable wildlife resources, the public safety, and a quality outdoor experience;

5. To provide for economic contributions to the citizens of the State through the recognition that wildlife is a renewable resource of the land by which economic return can accrue to the citizens of the State, individually and collectively, through regulated management. Such management shall be consistent with the maintenance of healthy and thriving wildlife resources and the public ownership status of the wildlife resource;

6. To alleviate economic losses or public health and safety problems caused by wildlife; and

7. To maintain sufficient populations of all species of wildlife and the habitat necessary to achieve the above-stated objectives.

The Legislature has delegated authority to regulate the take and possession of wildlife to the Commission, whose members are appointed by the Governor. With respect to pronghorn antelope, the Legislature has established the State's policy regarding hunting in Section 331 of the Fish and Game Code (Appendix 1), which provides that the Commission may determine and fix areas, seasons and hours, bag and possession limits, and the number of pronghorn antelope that may be taken under rules and regulations of the Commission. Additionally, this section specifies that the Department shall authorize tags for the purpose of raising funds for programs and

projects to benefit pronghorn. These fund-raising tags are not subject to fee limitations presented in Section 331. A minimum of one tag and a maximum of one percent of the total pronghorn tag allocation may be designated as fund-raising tags.

The proposed hunt areas are located in northeastern and central California and consist of rural areas with small cities and towns (figures 1-6). The proposed hunt areas are within portions of Lassen, Modoc, Plumas, Shasta, Siskiyou, Kern, and Los Angeles counties; specific descriptions of these areas were provided in Chapter 2. The total size of the proposed project area is approximately 8,100,000 acres.

Cumulatively, land ownership within the proposed hunt areas is in a ratio about two to one public to private acreage, although this proportion varies within each zone (Chapter 2). Public land is administered primarily by the USFS and the BLM. Private land consists primarily of range and agricultural lands.

Pronghorn antelope habitat in northeastern California consists of Great Basin vegetation (Munz and Keck 1973, Barbour and Major 1977), with climate characterized by warm, dry summers and cold winters. These areas are often referred to as "cold deserts" because of the small amount of precipitation received and cold winters. Natural vegetation types inhabited by pronghorn antelope include sagebrush-scrub, sagebrush-grass, and pinyon-juniper communities. Agricultural habitats include annual pastures, and alfalfa and grain fields. Snow covers the ground for much of the winter, and pronghorn antelope migrate to areas with minimal accumulation during the fall.

The pronghorn antelope in central California primarily inhabit valley grasslands and surrounding arid scrub communities (mountain, mixed, and redshank chaparral; Joshua tree; alkali desert scrub) with hot dry summers and cool winters [Wildlife Habitat Relationships (WHR) System, Munz and Keck 1973, and Holland 1986]. Snow, water, and mud may persist during various seasons. As in northern California, the pronghorn antelope may move from areas with snow and water accumulation to areas with nutritious browse or green forage.

Livestock grazing, wildlife habitat, and recreation are primary land uses on public land throughout the proposed project area. About 75,000 acres of public land in the proposed project area are managed as State or Federal wildlife areas/refuges. Some pronghorn antelope inhabit these areas. On other private land in the project area, alfalfa and grain production are primary uses, with livestock grazing an important land-use practice as well. Irrigated crops (especially alfalfa) are very desirable to pronghorn antelope living in these communities, especially during summer for fawning cover and high-quality forage. Events such as drought, wildfires, and severe winters were natural components in the evolution of the State's pronghorn antelope in pristine times.

FACTORS AFFECTING PRONGHORN ANTELOPE HABITAT

Precipitation

California climate is Mediterranean, meaning that over the long term, the State receives the bulk of its precipitation during the cool fall and winter months; whereas warm spring and summer months are generally dry. In other words, California undergoes a "summer drought" each year. Extreme variation in precipitation occurs in the State on an annual basis (Table 5). For example, Northwest California receives a great deal of precipitation, while northeastern and southern parts of the State receive little precipitation. Additionally, topographic features, such as the Sierra Nevada range, influence climate by creating a rain shadow whereby most of the precipitation falls on the west side of the range, extrcting most of the moisture from clouds by the time they reach the east side of the range. The amount of precipitation falling on California is extremely variable on a geographic basis within a year and extremely variable in any one area among years.

Droughts are cyclic over the long term, and California's wildlife species and their habitats have evolved under conditions of periodic drought (Bakker 1972, Munz and Keck 1973, Oruduff 1974, Burcham 1975, Barbour and Majors 1977). According to data available since the late 1800s, California has been in several drought cycles lasting two to five years (Department of Water Resources data, Sacramento, California). Because of this natural variation in available water, vegetation communities have evolved and adapted to deal with the associated changes in soil moisture (Barbour and Majors 1977).

Precipitation and snowfall during the winter of 1992-93 broke the seven-year statewide drought (Department of Water Resources 1993). Northeastern California received near normal precipitation in 1989 and record snowfalls in 1993, whereas southern California received above average rainfall from 1991-93 and in 1995 (Department of Fish and Game files, Sacramento, California). Hence, pronghorn antelope may have been temporarily affected by drought during a portion of the most recent drought episode. However, the climatic conditions in recent years in the project area do not deviate from the normal historical occurrence of periods of drought and extreme precipitation/snowfall under which pronghorn antelope likely evolved (Department of Water Resources, Sacramento, California; Owenby and Ezzell 1992).

Table 5. California Statewide Precipitation - Percent of Normal[a]

Year	Percent	Year	Percent
1967	130	1986	132
1968	75	1987	63
1969	150	1988	80
1970	100	1989	80
1971	105	1990	70
1972	65	1991	76
1973	115	1992	86
1974	130	1993	141
1975	100	1994	65
1976	65	1995	165
1977	45	1996	125
1978	155	1997	174
1979	90	1998	175
1980	135	1999	95
1981	75	2000	98
1982	150	2001	74
1983	190	2002	79
1984	105	2003	111
1985	83		

a = Percentages are for water year ending September 30. For example, water year 1998 is from October 1, 1997 through September 30, 1998. Normal is based on a 50-year average between 1931 and 1981.

Vegetation communities in the project area are drought tolerant. However, this is not to say that prolonged drought will not affect plant species. Growth and vigor of forage species that pronghorn antelope rely on may be severely reduced during a drought, because annual plant seeds may not germinate without adequate moisture, and shrubs could have reduced growth as a water conserving strategy. Consequently, the quantity and quality of forage for herbivores would be reduced. Drought may also weaken plant resistance to disease, fungus, and insect damage. This would be considered part of a natural drought cycle.

In annual grassland vegetation communities (this applies to many areas of the Great Basin and valley grassland), the lack of fall germinating rains or minimal spring rains can preclude germination of annual seeds of forbs and grasses, which are important sources of forage, primarily during the fall, winter, and spring. Seeds of these species would continue to lie dormant in the soil until germinating conditions became suitable. The reduced quantity of vegetative cover due to prolonged drought in some areas could affect thermal and hiding cover important to pronghorn antelope.

Habitats in the project area are, to a large extent, managed and affected by humans. As related to drought and water availability, human management of pronghorn habitat has produced stability in water availability due in part to the development of various water sources, including wells, guzzlers and stock tanks, irrigation, reservoirs, and fire management. Currently, water is more available to pronghorn antelope, regardless of drought, than it would have been prior to settlement in the 1800s. There are no documented cases of pronghorn antelope being unable to obtain water due to drought.

Wildfire

Wildfire in California is extremely variable (Table 6). One aspect of prolonged drought that would affect pronghorn antelope habitat is an increased risk of wildfire due to extremely dry conditions. Prolonged drought affects the woody plant community, in terms of increased plant mortality and decreased moisture content, and may make them more susceptible to wildfire and succession by exotic annual grasses. Wildfires in these arid shrub communities generally convert shrubland to grassland (Pickford 1932). Wildfires may occur during summer months because of lightning strikes. Kindschy et al. (1982) indicated that wildfire can benefit pronghorn antelope by stimulating growth of desirable herbaceous vegetation. However, fires of an extensive size can result in less than desirable shrub cover and invasive growth of exotic annual grasses for several years (Pyrah 1987). Additionally, the reduction of tall shrub vegetation may create a more suitable environment by reducing thick cover, especially dense, decadent woody shrubs. Hence, wildfires can benefit pronghorn antelope by reducing thick shrub cover and stimulating growth of desired forage species. However, wildfires can be detrimental if large areas are burned and shrub cover is eliminated.

Wildfires have always been a natural phenomenon in California wildlife habitats. Consequently, the plant and animal communities are well adapted to the occurrence of fire, and many species far better in months and years following a burn (Shaw 1985, Peek 1986). Many plant species require fire to reproduce. As soon as the habitat regenerates after a fire, rabbits and squirrels will reoccupy it. These animals are some of the first to re-inhabit areas burned by wildlife.

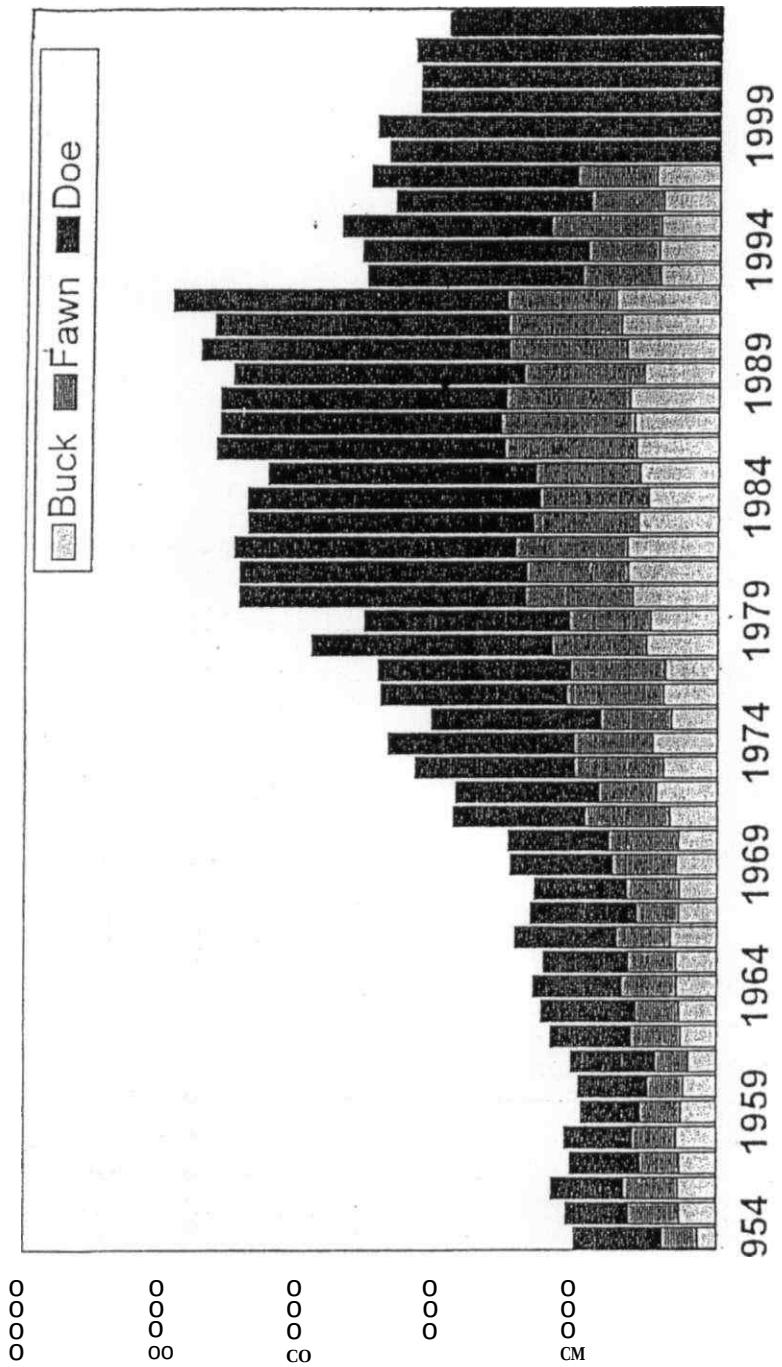
Even though certain individuals of a species may be killed on a local level, there is no evidence to indicate that fire has negative, long-term effects on resident small mammal populations (Johnsgard 1973). Although California experienced an unusually

Table 6. Acres of Wildfire in California - 1980 through 2003

Fire Season	Acres Burned
1982	160,000
1983	128,000
1984	251,000
1985	595,000
1986	119,000
1987	873,000
1988	345,000
1989	173,400
1990	365,200
1991	44,200
1992	282,745
1993	309,779
1994	526,219
1995	209, 815
1996	752,372
1997	283,885
1998	215,412
1999	499,425
2000	295,026
2001	372,506
2002	510,356
2003	*736,146

* Preliminary data.

Figure 10
Northeastern California Pronghorn Antelope Populations and
Estimated Herd Composition from Annual Surveys 1954 -Present


Buck
Fawn
Doe
954
1959
1964
1969
1974
1979
1984
1989
1994
1999
0
0
0

elevated fire season in 2003, the estimate of 736,146 acres accounts for less than one percent of California's acreage. The five-year average for 1998-02 is 378,545 acres burned (California Department of Forestry data).

Severe Winters

Severe winters and late winter snows can result in the death of pronghorn antelope. Pronghorn antelope may move to winter ranges earlier and stay longer during severe winters. Deep winter snows in 1951-52 and 1992-93 apparently adversely impacted pronghorn antelope survival in northeastern California. However, Pronghorn antelope can rapidly recover after such natural disasters (figures 9 and 10).

Subsequent to the severe winter of 1951-52, mild winters coincided with increasing pronghorn antelope numbers until record numbers were counted during 1992 (Figure 9). Pronghorn population levels are expected to increase again under favorable conditions.

The 1992-93 storms brought record snowfall to portions of the project area. Fortunately, many areas which comprise pronghorn antelope winter range were not severely impacted. The winter and summer surveys help the Department determine the severity of the winter kill. The proposed project considers the potential of other non-hunting mortality factors, including a winter kill factor in the ANTQUOTA and KILLVARY models which provide the proposed tag allocation.

Threatened and Endangered Species

The Commission has listed a number of plant and animals species as endangered or threatened. These species are listed in sections 670.2 and 670.5, Title 14, CCR. The California Natural Diversity Database (CNDDB), Rarefind, and the WHR guides were consulted to identify threatened and endangered plants and animals in or adjacent to the project area. Table 7 lists the Federal/State endangered, threatened, or fully protected plant and animal species in the project area. Negative impacts are not expected from the proposed project, because these plants and animals are dispersed or occur marginally, if at all, within pronghorn antelope habitat (CNDDB point locations). It is improbable that pronghorn antelope hunters would have a significant impact on these plant and animal populations (Table 7) because of the limited number of hunters and the short season length. Comparatively, livestock and urban and agricultural development may have a greater impact on some of these populations than either pronghorn antelope or hunters. Historically, there is no evidence that pronghorn antelope hunting will significantly affect these listed species.

Table 7. Federal/State Endangered, Threatened, or Fully Protected Plant and Animal Species in the Project Area

SE = State Endangered **FE = Federal Endangered**
ST = State Threatened **FT = Federal Threatened**

Common Name (Species Name)	**Status**	**/Habitat /Season in Project Area /Identified Threats**
Ashland Thistle *(Cirsium ciliolatum)*	SE	/Found in Cismontane Woodlands; produces from buried rhizome /Not in pronghorn habitat /Livestock grazing and agriculture.
Boggs Lake Hedge-Hyssop *(Gratiola heterosepala)*	SE	/Occurs in vernal pools and at Lake Margins /Present in project area primarily within protected sites /Agriculture, livestock grazing, and urban development.
Slender Orcutt Grass *(Orcuttia tenuis)*	SE, FT	/Occurs in bottom of vernal pools /Within project area but not in areas occupied by hunted pronghorn antelope /Agriculture, development, and "pool hydrology."
Yreka Phlox *(Phlox hirsuta)*	SE, FE	/Occurs in lower Montane Conifer Forest /Occurs beyond the periphery of the project area/Urban development and logging.
Bank Swallow *(Riparia riparia)*	ST	/Inhabits areas near rivers with sandy vertical banks /Seasonal migrant that leaves area generally before hunt season /Modification of river and streams system, especially by altering bank.
Bald Eagle *(Haliaeetus leocephalus)*	SE FE	/Inhabits Wetland and Forest habitats; nests in Mountainous Habitat /Seasonal migrant and resident, generally not present during time of proposed project/Development, agriculture, pesticides, timber harvest, nest disturbance, and shooting; laws provide that shooting is illegal.
Swainson's Hawk *(Buteo swainsoni)*	ST	/Inhabits Valley and Foothill Grasslands /Seasonal migrant, nests in project area and generally leaves before hunt season /Loss of habitat due to residential, commercial, and agricultural development and potentially poisoning of prey.
Greater Sandhill Crane *(Grus canadensis tabida)*	ST	/Inhabits Inland Wetlands; nests in Wet Meadows and Marshes /Seasonal migrants /Habitat destruction, disturbance, and predation and accidental take on breeding grounds.
American Peregrine Falcon *(Falco peregrinus anatum)*	SE	/Inhabits many habitats, especially over water; nests on cliff faces /Seasonal presence /Poisoning, egg collection, and nest disturbance/Federally de-listed in 1999.
Great Gray Owl *(Strix nebulosa)*	SE	/Inhabits Upper Montane Coniferous Forests /Within project area, but located at a higher elevation and utilizes a different habitat than pronghorn antelope /Habitat loss due to logging and lower prey density due to livestock grazing.

Table 7. Cont. Federal/State Endangered, Threatened, or Fully Protected Plant and Animal Species in the Project Area

SE = State Endangered FE = Federal Endangered
ST = State Threatened FT = Federal Threatened

Common Name (Species Name)	**Status**	**/Habitat /Season in Project Area /Identified Threats**
Willow Flycatcher *(Empidonax traillii)*	SE FE	/Inhabits extensive willow thickets (Riparian Scrub) /Seasonal migrant, inhabits periphery of project area during spring and summer for nesting /Loss of riparian habitat, livestock grazing, and nest parasitism by exotic birds.
Modoc Sucker *(Catostomus microps)*	SE FE	/Inhabits Pit River Drainage and tributary streams in Modoc Plateau /Present all year, utilizes a different habitat than would be impacted by proposed project; marginal use of project area /Endangered /Drought, predators, cattle grazing.
Shasta Crayfish *(Pacifastacus fortis)*	FT SE	/Inhabits Hat Creek, Fall River, Pit River Drainage /Present all year, utilizes different habitat than proposed project /Competition with other crayfish species.
Rough Sculpin *(Cottus asperhmus)*	ST	/Inhabits the Pit River Drainage (below Burney Falls), including Hat River and Fall River /All year, but different habitat use than project area /Cattle grazing causing siltation and bank erosion.
Lost River Sucker *(Diltistes luxatus)*	SE FE	/Klamath Drainage, and lakes and streams; spring spawn /Present all year, but utilizes different habitat than proposed project /Loss of spawning habitat, diversions, predation, and hybridization are threats to species.
Shortnose Sucker *(Chasmistes brevirostris)*	SE FE	/Inhabits the Klamath Drainage, lakes, and rivers /All year, spawn in streams in April and May; use a different habitat than proposed project /Water diversion and hybridization.
Sierra Nevada Red Fox *(Vulpes vulpes Necator)*	ST	/Northern California cascades east to northern Sierra Nevada and south along the Sierra Nevada to Tulare County/All year, generally at 5,000-7,000 foot elevation/Threats unknown.
California Condor *(Gymnogyps califomianus)*	SE FE	/Inhabits Chaparral, and Foothill and Valley Grasslands /Extant at this time; once present all year /Predation, poisoning, and development; current regulation does not allow the game entrails to be discarded or the non-target species to be shot; poisoning should not be a factor.
Tehachapi Slender Salamander *(Batrochoseps stebbinsi)*	ST	/Cismontane Woodland and Riparian /Inhabits periphery of project area all year, and not in area occupied by hunted pronghorn antelope /Loss of habitat.
Longhorn Fairy Shrimp *(Branchinecta longiantenna)*	FE	/Alkali Lakebed /present but aestivating/ land and water changes/

(Sources: California Department of Fish and Game, 2001; Zeiner, Laudenslayer, Mayer, and White1990; Tiber, 2001.)

Many species listed in Table 7 are seasonally active in portions of the project area before or after the proposed hunt season and would not be encountered by hunters (e.g., bald eagle, bank swallow, willow flycatcher, sandhill crane, Swainson's hawk, longhorn fairy shrimp, and peregrine falcon). Others have very restricted habitat requirements and are not expected to come in contact with either hunters or pronghorn antelope (e.g., Modoc sucker, shortnose sucker, Shasta crayfish, rough sculpin, slender salamander, great gray owl, Yreka phlox, slender Orcutt grass, Ashland thistle, and Boggs Lake hyssop). Although some species in Table 7 may be widely distributed throughout portions of the project area (e.g., bank swallow, Swainson's hawk), hunting is merely one of many recreational activities that is permitted to occur. To date, there are no documented instances of pronghorn antelope hunters adversely affecting these species.

The Department's analysis concludes that these listed species should not be affected by the proposed project. The proposed project occurs several months after the reproductive period for threatened and endangered species. Impacts on carrion eaters will be insignificant because of the low number of pronghorn antelope (relative to the total population and other food sources) available as a result of the project. Other food sources of carrion (e.g., livestock, lagomorphs, and rodents) will be more abundant due to agricultural development and water projects on these ranges.

The Pacific Coast snowy plover (federally listed) which occurs outside of the project area and the western snowy plover which occurs in the project area are recognized as separate populations of *Charadrius alexandrinus nivosus.* The western snowy plover is not a federally or State-listed species.

The western yellow-billed cuckoo *(Coccyzus americanus occidentalis),* California bighorn sheep (Ow's *canadensis californiana),* California wolverine *(Gulo gulo luteus),* tricolored blackbird *{Agelaius tricolor),* Shasta salamander *(Hydromantes shastae),* idewater goby *(Eucyclogobius newberryi),* and Tuctoria greenei *(Greene's tuctoria)* were listed as extirpated or occur outside the proposed project area. The Department's analysis concludes that these species will not experience adverse effects from the proposed project.

The Sierra Nevada red fox *(Vulpes vulpes necator)* and northern spotted owl *(Strix occidentalis caurina)* may occur in northeastern California within the proposed project area. However, it is unlikely that either of these species will be adversely affected by the proposed project.

CHAPTER 4. THE ENVIRONMENTAL EFFECTS OF THE PROPOSED PROJECT

Direct effects of the proposed project will be the death of individual pronghorn antelope and the presence of hunters distributed within the approximately 8,100,000 -acre project area during portions of a 51 day period beginning in early August. Hunters will not be in the field simultaneously, but will be distributed according to the specified hunt areas and seasons. Only pronghorn antelope in designated hunt areas in California will be affected by the proposed project. The proposed project will bring an influx of hunters into the project area and temporarily increase fuel consumption, dust from dirt roads, public services, and human use of the land.

The Department does not foresee significant adverse impacts resulting from the proposed project, based on the past history of pronghorn antelope hunting (Chapter 2), which has occurred annually since 1964. However, the Department has analyzed the anticipated environmental effects of the proposed project, which is contained herein. Significant adverse effects on the environment have not been identified as a result of the pronghorn antelope hunting that has historically occurred in California. Similar to an initial study (Section 15063, CEQA Guidelines), the hunting that occurred in past years provides a benchmark forjudging whether significant effects will occur. There is no substantial evidence that the project will have significant adverse effects on the environment.

METHODOLOGY

Natural Factors Influencing Pronghorn Antelope

The proposed removal of individual animals from the hunt area is expected to slightly (and only temporarily) reduce population size to help achieve/maintain herd goals. Pronghorn antelope population numbers are above the level that existed when annual hunting began in 1964 (see figures 9 and 10). The proposed hunt is designed to be a management component (along with other mortality factors and translocation) in achieving/maintaining population numbers within objective levels (Chapter 2). This will help assure that the population remains healthy and within limits supportable by the native range.

Data collected since the inception of pronghorn antelope hunting in 1942 suggest that hunting has not had an adverse effect on the pronghorn antelope population (figures 9 and 10). Regulated hunting may have slowed the rate of population increase overtime and helped avoid periodic, localized overpopulation of pronghorn antelope. Population survey data collected on pronghorn antelope are among the highest quality available for large mammal populations, because the species inhabits open range, enabling more accurate and complete herd composition counts (Allen and Samuelson 1987). An annual winter survey involves counting all pronghorn antelope within known wintering areas in the project areas. This can be expected to

result in a minimum population estimate, because some animals are missed. Until 1998, a annual summer herd composition survey was conducted to assess buck, doe, and fawn ratios and trends. After 1998, The Department has conducted summer composition surveys on a periodic basis (most recently in 2002). Data from winter and summer surveys have made it possible to accurately follow changes in pronghorn antelope numbers and to monitor the impacts of hunting and translocations.

THE IMPACT OF HUNTING ON THE PRONGHORN ANTELOPE POPULATION

Additive and Compensatory Mortality

"If hunting is a compensatory form of mortality then populations may be presumed to fluctuate in response to other factors and stocks are little affected by exploitation. However, if hunting is additive to other forms of mortality then it serves as a population depressant" (Peek 1986:286). "Compensatory mortality" describes hunting as only removing excess animals that would die of other mortality factors (e.g., severe winters) and thus compensates for these factors. "Additive mortality" describes hunting as killing animals in addition to the number that normally die of these other mortality factors.

Data indicate that removal of pronghorn antelope from a population, whether by natural- or human-caused factors, results in high fawn production in following years to compensate for animals removed, provided the level of hunting is below the potential to replace (Hess 1986, California Department of Fish and Game translocation and census data 1987-88, 1990-92). The mean age of the population can be expected to become younger as animals are removed from the population through hunting. With fewer adults in the population, proportionately more fawns are born and survive (e.g., Autenreith 1983).

Data from northeastern California for 1990 provide an excellent example of a compensatory population response to removal of individuals (by hunting and translocation). During 1990 approximately 1,000 pronghorn antelope were removed from northeastern California (288 animals were translocated to central California and 717 were killed by hunters), yet survey results (figures 9 and 10) indicate the population was reduced by only 200 animals the following January. It is acknowledged that many pronghorn antelope may not have been counted during the winter survey because of various factors, such as inclement weather (D. Thayer, Alturas, California, unpublished data). However, it is clear that this attempt to reduce population size using hunting and translocation had little effect on the population. Removal of approximately 1,000 pronghorn antelope during 1990 was compensated for by a population increase of approximately 800 pronghorn antelope during 1991 (figures 9 and 10). Examination of harvest, translocation, and population data suggests regulated hunting has not depressed the population consistent with the concept of additive mortality. No significant adverse impacts to the population are expected with the proposed level of hunting (e.g., Tsukamoto 1983, Pyrah 1987).

The ability of pronghorn antelope populations to remain stable or continue to increase under hunting pressure is an indication of their potential productivity when the population is kept below range carrying capacity (Figure 9). University of California researchers Salwasser and Shimamoto (1979) used a computer simulation approach to model effects of management strategies for pronghorn antelope populations in northeastern California and concluded that the population could stabilize at approximately 6,000 animals (based on the 1979 estimate of 5,872 animals) by harvesting 500 bucks and 290 does annually. Historically, the Department's harvest recommendation has involved harvesting both bucks and does to stabilize the population at a level that would not exceed range carrying capacity. It is anticipated that the proposed harvest will result in stabilization or a slight increase in population size measured in 2005. The proposed project should maintain herds at or near objectives described in the Northeastern California Pronghorn Antelope Management Plan and PLM plans (Department files, Sacramento, California).

Sex and Age Structure

Most western states establish objective ratios for sex composition of pronghorn antelope populations. The standard ratio is 20 bucks per 100 does in the presence of hunting to ensure that there are sufficient bucks to meet all the breeding requirements (Salwasser 1980, Tsukamoto 1983). It is expected that a post-hunt sex ratio for California of 24 bucks per 100 does, retains additional bucks for breeding, improves hunting and viewing opportunity, and ensures that age structure diversity is maintained. Historically, annual variation in observed sex ratios exists (Figure 11), but on a long term basis, observed sex ratios for California are well above the standard ratio of 20 bucks per 100 does that is established for most western states.

Average age of the pronghorn antelope harvest in California is summarized in Figure 12. The take of pronghorn antelope through hunting is likely to occur across the entire range of adult age classes. Existing data indicate that no one age class is preferred by hunters over another (California Department of Fish and Game check station data, Alturas office of California Department of Fish and Game). Logically then, even as older animals die, the age structure of the population will be stable. Production and survival of young animals within each herd will replace the animals removed by hunting, resulting in a population that does not fluctuate wildly as would normally occur from the influence of predators and variable weather. Research has shown density-dependent characteristics for summer fawn survival (Salwasser 1980, Hess 1986). For example, when pronghorn antelope populations are at or near range carrying capacity, the number of fawns produced decreases proportionately. This has occurred in

Figure 11
Fawn-to-Doe and Buck-to-Doe Ratios in Northeastern California (1953 to 1997)
(Optimal fawn ratio is 60:100 does, desired buck ratio is 24:100 does)

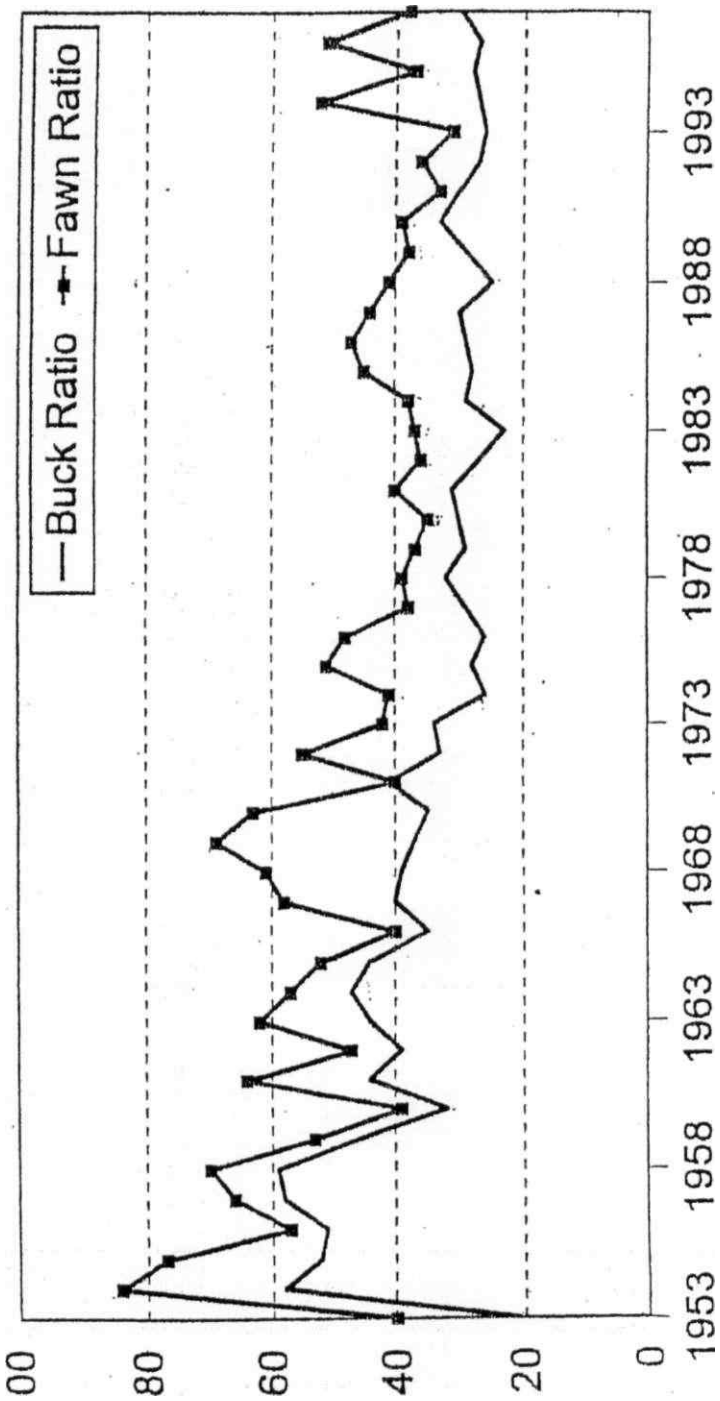
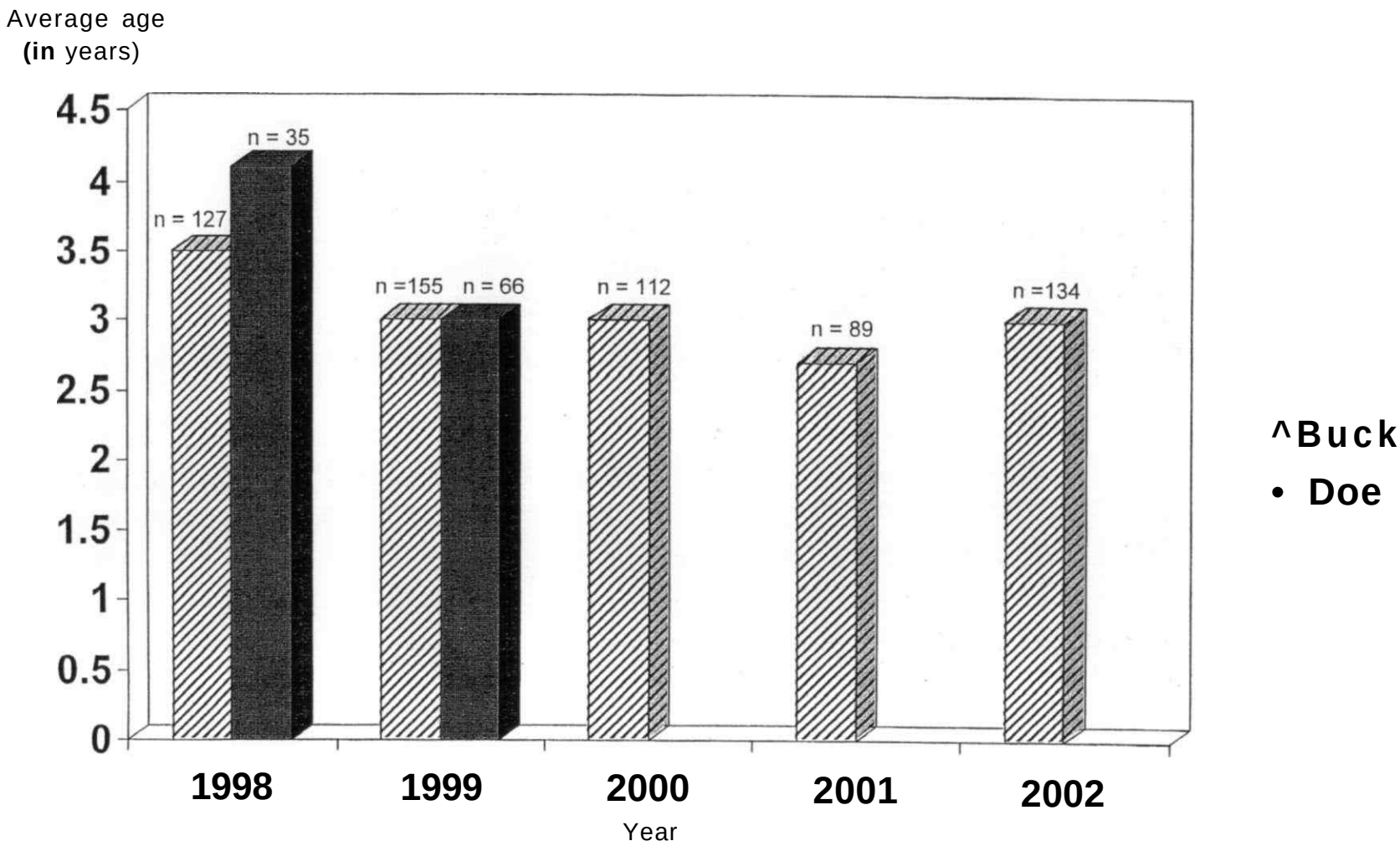
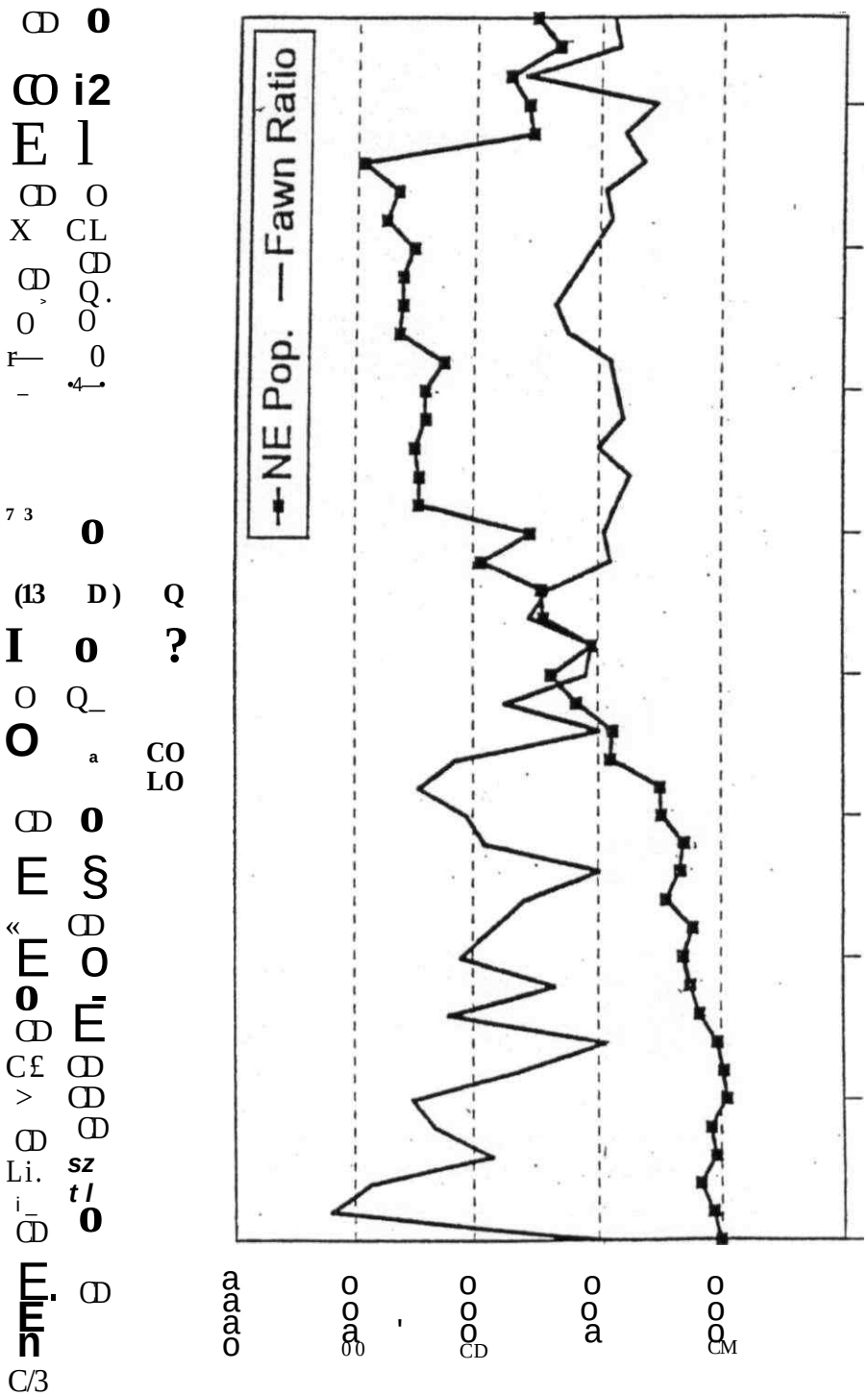


Figure 12. Average Age of Pronghorn Antelope Taken by Hunters in California Based on Analyses of Cementum Annuli.



n = Sample size of individual sexes
Note: No doe hunts authorized after 2000.

Figure 13
Summer Fawn Recruitment Correlated With Total Herd Size
in Northeastern California 1953 - 1997



northeastern California, as fawn production has generally been declining since the 1950s (Figure 13). When adult mortality is high, fawn survival has been shown to proportionately increase in the following year(s). Adult mortality was simulated by the removal of adult pronghorn antelope for translocation purposes in 1987, 1988 and 1990 (Table 4). Significant adult mortality actually occurred during the winter of 1992-93, and fawn recruitment subsequently increased (figures 11 and 13) (California Department of Fish and Game data at Wildlife Programs Branch, Sacramento; Hess 1986).

Agricultural development has decreased pronghorn antelope dependency on native range. Plant productivity and resultant animal carrying capacity can vary significantly from one year to the next on native range as a result of climatic conditions. Hunting pronghorn antelope in California is expected to temporarily reduce the statewide population by five to six percent (based on the proposed tag range in Table 1), which will have little influence on the statewide population (figures 9 and 10). In the past, California has harvested a small percentage of the estimated population annually (Table 8). Most western states harvest 10-25 percent of their entire population annually with no significant adverse effects (Table 8) (see published proceedings of the Biennial Pronghorn Antelope Workshop, Department of Fish and Game, Wildlife and Inland Fisheries Division, Sacramento, California). Since the turn of the century, pronghorn antelope have made a remarkable recovery in the western United States, in the presence of regulated hunting (Yoakum 1968).

From 1990-1992, the Department significantly increased the pronghorn antelope tag quota for northeastern California in an effort to reduce the pronghorn population from over 7,500 to within a range of 5,600-7,000. The population reduction was needed to reduce private property damage (there are no provisions for issuing depredation permits to take pronghorn antelope); and to avoid overpopulation resulting from mild weather conditions and artificially enhanced habitats (i.e. agricultural fields). Despite tag quotas that were more than twice the quotas of previous years (Table 3), the northeastern pronghorn antelope population did not decline until the 1992-1993 winter, when numbers declined significantly as a result of severe winter weather. Under favorable conditions, numbers are expected to again approach the desired range.

Natural Mortality

Some pronghorn antelope killed during the hunting season may have died within the year due to other factors. Therefore, to some extent, natural mortality should decline as hunting mortality increases. In an unhunted state, pronghorn antelope mortality is high for fawns and those over five years of age (Salwasser and Shimamoto 1979). Natural mortality of animals two to five years of age generally is low. Hunting does not significantly affect fawn mortality because fawns usually are not hunted. Hunting can cause slightly higher mortality in age classes above two years. The proposed project is not likely to affect the natural survival of the population as a whole, and the influence of hunting on natural mortality is not expected to be significant.

Table 8. Average Annual Pronghorn Antelope Harvest, 1983-88 for Western States

State	Percent Harvest
California	7.6
Colorado	15.0
Nevada	4.9
North Dakota	18.0
Oregon	12.1
South Dakota	23.0
Texas	2.8
Utah	11.0
Wyoming	25.0

** Harvest is expressed as a percentage of total state population. Low values for Nevada are due to the low human population applying for hunts, and values are low for Texas because the state is 98 percent private land and hunting is limited (data summarized from proceedings of the Biennial Pronghorn Antelope Workshop, on file at the Department of Fish and Game, Sacramento, California).*

Individual Pronghorn Antelope Zones

The proposed project provides buck and doe tag allocation ranges (Table 1) for archery-only, general season, junior hunt, and fund-raising pronghorn antelope tags. The proposed project also provides for hunting under the PLM Program (see chapters 2 and 4), however, specific quotas for each participant in the PLM Program will be authorized at a later time. For northeastern California, the proposed project involves a final buck tag quota for public zones that is intended to result in harvest of five to six percent of the pronghorn antelope population estimate based on 2004 winter survey results. Northeastern California doe tag quotas for 1998 and 1999 (100 tags in 1998, and 196 tags in 1999) allowed for collection of biological information related to the female portion of the population. However, when winter survey results indicate the northeastern California pronghorn antelope population is at a low level, the doe tag quota will be significantly reduced or eliminated (doe tags have not been issued since 1999). Conversely at a high level, the doe tag quota will be increased.

Based on hunter success rates from previous years, the harvest for 2004 is expected to be less than the number of tags issued. Hunter success rates, objective age and sex ratios, and distribution in each hunt area have been used in developing the proposed project, along with winter survey results for known non-hunting mortality factors (winter kill, losses due to vehicles, predation, illegal take, disease, etc).

For each zone in northeastern California, numbers of pronghorn antelope and proportions of bucks, does, and fawns have been counted during aerial surveys, which have occurred annually since the 1940s (figures 10,11 and 13; and Department of Fish and Game files, Wildlife Programs Branch, Sacramento, California). During winter aerial census, the Department has attempted to count every pronghorn antelope in the project area.

Aerial surveys provide one of the more reliable pronghorn antelope population estimators, provided standardized and consistent techniques are used (e.g. Tsukamoto 1983). In northeastern California, the same basic technique has been used since 1942.

Management decisions and proposed hunting quotas are based on the number of animals counted (Allen and Samuelson 1987). Population estimates based on these surveys represent minimum numbers in each zone. Because they are based on conservative population estimates, the tag quotas themselves tend to be conservative also (Table 1).

Results of the 1997 composition survey (completed prior to the hunting season) for northeastern California indicate a buck to doe ratio of 30 bucks per 100 does, based on a sample size of 1,948 animals classified. Winter survey data for 2004 (available in February) will be used with the model to determine final tag quotas for northeastern California. The allowable buck harvest for northeastern California should approach five to six percent of the population estimate resulting from the winter survey. The total PLM harvest in northeastern California will not be greater than 10 percent of the total allowable harvest for 2004. The proposed project is designed to harvest pronghorn antelope and meet population goals as established in the Northeastern Pronghorn Antelope Management Plan and the PLM management plans (see Chapter 2; also Department files, Sacramento, California). On a long-term basis, the harvest for northeastern California should result in a population of between 5,600-7,000 animals, with a post-hunt ratio of at least 24 bucks per 100 does. The Department expects that pronghorn antelope density within northeastern California will vary according to geographical location and habitat conditions. Tag quotas for each zone in northeastern California will be adjusted to correlate with pronghorn density.

Teion Ranch Private Lands Management Area

The Tejon Ranch herd contains approximately 100 animals. Surveys have been conducted annually since 1985. Surveys during the fall provide a minimum population estimate and composition data. The Department estimates that less than half of the population was observed during the most recent survey (Fall 2001) when observed buck:fawn:doe ratios were 42:16:100 based on a sample of 35 animals.

Buck- and fawn-to-doe ratios increased after the drought was broken by recent years of above average rainfall. The objective for this herd is to maintain at least 85 animals and a buck-to-doe ratio of 20 to 100. Using the KILLVARY model, the

Department has determined that the proposed harvest would allow for an annual population increase, in conjunction with an increasing carrying capacity (Department files, Sacramento, California). The proposal provides for a growing herd while removing surplus bucks. Based on the analysis of the impact of hunting on the pronghorn antelope population, the proposed project is not expected to have significant adverse impacts on the population.

EFFECTS OF CHANGES IN HUNTING REGULATIONS BY ADJOINING STATES

Very few non-residents choose California as a hunting destination. Regulations of adjoining states do not affect California because pronghorn hunting is restricted to California residents (except for fund-raising and PLM tags). In fact, the five-year average (1998-2002) for out-of-state license sales was merely 2.3% of total sales (Department files). Accordingly, the Department believes that any changes in hunting regulations by adjoining states would need to be drastic (e.g., closure of an entire season for a particular species) in order to produce a potentially significant increase in non-resident license sales and any associated potential increase in harvest. A survey of 2003 game laws for Oregon, Nevada, and Arizona revealed no major changes in large game mammal hunting regulations for these states. Consequently, the Department concludes the hunting regulations of adjoining states will have no significant impact on California's mammal populations.

IMPACTS ON THE GENE POOL

Pronghorn antelope in California are descendants from a remnant stock of approximately 1,000 animals that, in the early 1800s, numbered 500,000 or more. Throughout much of the western United States, pronghorn were similarly decimated (Yoakum 1968). Some research has been conducted on pronghorn antelope genetics, but the successful recovery experienced by the species since it was afforded protection suggests no significant genetic problems associated with the California antelope population. The hunting strategy generally distributes hunters across a wide geographic area. The California pronghorn antelope population is widely distributed. Much of it undergoes seasonal mixing on fall and winter range. The proposed level of hunting is not expected to adversely affect the genetic integrity of pronghorn antelope in California.

IMPACTS ON THE SOCIAL STRUCTURE

Research has shown that light hunting as proposed here does not cause pronghorn antelope to abandon their territories (Copeland and Autenreith 1982). Even under heavy hunting, fawn-to-doe ratios the following year can be as high, or higher than, respective ratios under light hunting, because breeding is spread among more of the males (Copeland and Autenreith 1982). When older age animals were killed as a result of hunting, Byers (1989) suggested that territoriality decreased because males did not defend territories until they were three years old. However, Byers (1989) also

reported that many fawns (especially males) were born in years immediately after high hunting harvests until sex ratios became similar to the observed ratio prior to the high harvests.

Under the proposed project, minor disruption of social groups may occur during the hunting season, but long-term adverse effects on the social structure are not expected. Harassment problems would be more severe during other times such as winter and the fawning season (Autenreith 1983, Yoakum and Ogara 1994). The proposed hunt seasons will occur outside the peak of the breeding season.

IMPACTS ON HABITAT

The removal of a maximum number (see Table 1) of pronghorn antelope during the proposed hunt season (given the expected hunter success rates) could result in a slight increase in availability of forage plants fed on specifically by pronghorn antelope. Generally, other wildlife species and livestock can be expected to consume palatable forage that would be made available by the loss of pronghorn antelope through hunting. Historically, the carrying capacity of pronghorn rangeland was reduced and transferred to livestock use. Native pronghorn habitats may remain stabilized or improve slightly with implementation of the proposed project. Pronghorn antelope damage to agricultural crops will likely decrease as a result of the proposed project.

The proposed project will result in the presence of hunters in the project area during the hunt seasons. The majority of pronghorn antelope range is public rangeland administered by the BLM and USFS, with livestock grazing as the primary use. These areas are open year-round to the public. Many pronghorn antelope hunters regard the proposed hunt as a premier event and have been very ethical and environmentally aware during their hunting experience. Based on previous observations of hunter use of these areas, hunting will not have significant adverse impacts on the habitat. Most of the proposed hunt areas currently are open to the public on a year-round basis for a variety of recreational uses, including hunting.

No lasting impacts are expected as a result of the proposed project. The post-hunt population size will be sufficient to maintain or improve herd health and habitat condition.

EFFECTS ON RECREATIONAL OPPORTUNITIES

Hunting Opportunities

The proposed project will continue to provide pronghorn antelope hunting opportunities in California. Opportunities to hunt pronghorn antelope should increase as the statewide pronghorn population increases. The opportunity to hunt pronghorn antelope is a popular one, with 8,000-14,000 applications being received each year. In recent years, about 75 percent of the successful applicants harvested a pronghorn

antelope. The proposed project will provide hunting opportunities consistent with sections 203.1, 207(d), and 331, Fish and Game Code, as well as the wildlife conservation policy in Section 1801, Fish and Game Code.

However, should the pronghorn antelope population decline suddenly, hunter opportunity may be temporarily reduced or eliminated. In the unlikely event of a significant decline that jeopardizes the future of pronghorn antelope in California, the Commission may take emergency action to curtail or eliminate pronghorn antelope hunting.

Non-Hunting Opportunities

Non-hunting uses of pronghorn antelope (i.e. viewing, photography, nature study) are not likely to be significantly affected by regulated pronghorn antelope hunting. Nor is the proposed project likely to impair the non-hunter's ability to enjoy the outdoors, the pronghorn antelope resource, or its habitat, because the non-hunter is not excluded from the project area. Also, the non-hunting user will have the opportunity to enjoy pronghorn antelope under non-hunting conditions in the project area for at least 10 months of the year and for the entire year in areas of the State where pronghorn antelope hunting is not proposed.

The proposed project should not significantly affect the non-hunting public, because the number of hunters in the field at any one time (established by quotas for each season and area) will result in very low hunter density in the limited areas open to hunting.

EFFECTS ON OTHER WILDLIFE AND PLANT SPECIES

The Commission has listed a number of plant and animal species as threatened or endangered (sections 670.2 and 670.5, Title 14, CCR; also see Table 7). Based on the following information, no significant effect on listed species or their habitat is expected from the proposed project.

Listed threatened and endangered plant species are largely absent from habitats occupied by pronghorn antelope in the project area (Chapter 3). Any browsing pressure that may occur on such plants would likely be temporarily reduced by the harvest of pronghorn antelope resulting from the proposed project. The proposed project is not expected to have measurable short- or long-term impacts on listed avian or mammalian species. Threatened and endangered animals and natural communities in the project area were considered in the evaluation of significant impacts. Historically, no conflicts have been identified involving pronghorn antelope hunting and listed (or other) species. Because of the short hunting season, the limited number of hunters in the field, the specific location and time of the hunts, and an optional pre-hunt orientation, it is unlikely that threatened or endangered plants and animals will be adversely impacted as a result of the proposed project.

The small number of pronghorn antelope taken will not remove a significant food supply for carnivores. The only significant predators of pronghorn are coyotes and, to a small degree, bobcats and golden eagles (Salwasser 1980). Proposed harvest strategies may benefit golden eagles and coyotes by increasing fawn production and availability (fawns are susceptible to predation by raptors while adults generally are not). Lead poisoning has been a chronic and significant cause of migratory bird (primarily waterfowl) mortality associated with hunting in some areas of North America. Birds ingest spent lead shotgun pellets and scavengers may ingest fragments of lead bullets in carcasses or gut piles (Fry 2003). The ingested lead is converted to soluble form, and absorbed into tissues, which can have lethal effects. Secondary poisoning of predatory birds can also occur when they feed on birds carrying lead pellets embedded in body tissues (Fry 2003). The USFWS has mandated the use of nontoxic shot for waterfowl hunting. The use of nontoxic bullets is not required for the hunting of pronghorn antelope. Zones 1-6 are not within condor range; however, the areas are with in the range of bald eagles. Since the hunts occur in August and September, the Department believes it will have no impact upon the bald eagles although hunters in the condor range are urged to use nontoxic bullets.

The dispersed hunting effort and resulting scattered bullet deposition over vast acreage make it unlikely that lead bullets would ever become concentrated enough to present any significant hazard to wildlife. Therefore, the Department does not believe that the use of lead bullets for hunting pronghorn antelope will result in any significant adverse environmental impacts.

Impacts on carrion eaters will be insignificant because of the low number of pronghorn antelope taken to provide a source of carrion on these ranges. Some forage overlap exists between pronghorn antelope and other herbivores, but the proposed project is not expected to affect this relationship. Impacts of livestock grazing greatly overshadow hunter impact in the proposed project area. The Department has analyzed potential adverse threats to endangered and threatened species and concluded there would be no significant effects from the proposed project on endangered or threatened species. Historically there have been no adverse affects on endangered or threatened species resulting from pronghorn antelope hunting.

EFFECTS ON ECONOMICS

The proposed project has the potential to result in minor beneficial economic impacts to small communities near the proposed hunt areas. Local effects may involve minor increases in economic activity, resulting from hunters purchasing goods and services from local merchants. This spending is likely to generate additional retail sales, income, and possibly short-term employment in businesses such as motels, restaurants, and retail stores. It is logical to assume that effects would be more substantial and measurable in small communities near hunt areas, such as Alturas and

Susanville, than they would be in large cities. However, the proposed project is not expected to result in significant physical change, either direct or indirect, which would produce significant negative environmental impacts.

Fiscal effects include direct public expenditures and revenue generation associated with the proposed project. The project will be administered by the State. Revenue will be generated by the fees from public applications ($7.00) and license tags ($99.75), the sale of PLM license tags ($150 for buck antelope), and fund-raising tags. In recent years, the Department has received an average of over 10,000 applications per year for pronghorn antelope license tags (1988-present data, Department of Fish and Game, Sacramento, California). Direct revenue from applications and license tags is expected to exceed $125,000 in 2004. Since 1992, the sale of 43 fund-raising license tags and 303 PLM license tags provided approximately $158,350 and $36,375, respectively. Revenue generated from the proposed project would be greater than the State's costs to administer the program. The revenues shall be expended for the management of pronghorn antelope (i.e. surveys, studies, translocations, etc.), enforcing Section 331, Fish and Game Code, and processing of hunting applications (Appendix 1).

Recreational use benefits measure the dollar value that hunters place on having the opportunity to hunt pronghorn antelope (Loomis et al. 1985). These benefits are equivalent to the dollar amount that hunters would be willing to pay for this activity over and above what they have to pay in expenses (license, application, and tag fees). Because the demand for pronghorn antelope tags exceeds the supply, most hunters in California will not have the opportunity to hunt pronghorn antelope. If provided the opportunity, however, the activity value to hunters would be measured as their collective or aggregate willingness to pay, less the cost required to participate. Although no specific data are available to measure the recreational use benefits associated with the proposed project, the existence of these benefits should be recognized. In Montana, for example, hunters spent an average of $114 per trip in 1985, or about $50 per day (Loomis and Cooper 1988). In Idaho, the net value to hunters for 90 permits was estimated at $265,000 (Loomis et al. 1985).

Although direct revenue to the state (from licenses, applications and tags) resulting from the proposal project appears insignificant, the cumulative economic effect of big game hunting nationwide is very significant. During 2001, trip and equipment expenditures for big game hunting nationwide totaled 10.1 billion dollars (United States Fish and Wildlife Service, 2002). Thus, the proposed project is a small part of a national recreational activity of great economic value.

EFFECTS ON PUBLIC SAFETY

Since 1978, the Department has received no reports of deaths and only one report of an injury related to hunting pronghorn antelope in California. This does not diminish the fact that people have died or been wounded while hunting other big game

animals, such as deer (Department of Fish and Game, Conservation Education and Enforcement Branch files). Data indicate, based on the total number of licensed hunters in California and the annual number of accidents, there is roughly a .0015-.00425 percent chance of being killed or wounded while hunting deer and a much lower chance of being killed or wounded while hunting pronghorn antelope. Additionally, Department records show that no non-hunting injuries or deaths have occurred as a result of pronghorn antelope hunting. As with any outdoor activity, there is always a risk of injury or death. However, the probability of being injured while hunting pronghorn antelope is extremely low. This good safety record is due, in part, to the requirement that all hunters must successfully pass a hunter safety education course prior to receiving a hunting license.

GROWTH-INDUCING IMPACTS

The proposed project is not likely to foster economic or human population growth in the area because of the short-term, transient nature of the project and its wide distribution in the area (see "Effects on Economics"). Rather, the project should provide a limited amount of economic benefit to local economies for services. This would be maintaining the level of impact as in previous years.

SHORT-TERM USES AND LONG-TERM PRODUCTIVITY

The proposed project allows for a limited pronghorn antelope harvest, intended to stabilize the population within levels identified by the Department's management objectives. The actual harvest will likely be less than the final tag quota because hunter success is expected to be less than 100 percent. This short-term use will remove individuals and reduce competition for forage, but will not reduce long-term productivity. Long-term productivity is maintained by reducing the herd to below habitat carrying capacity through regulated hunter harvest.

If the proposed project is delayed, overtime the pronghorn antelope population may increase and exceed management objectives. Delaying the proposed project could cause range deterioration, increase depredation problems and increase competition with livestock, feral horses, and deer. It is expected that fawn-to-doe ratios will decline if the proposed project is delayed for a significant time.

CUMULATIVE IMPACTS

Discussion of potential cumulative impacts is addressed for the project area as a whole. Plant communities within the project area are influenced by similar ecological factors (wildfire, precipitation, and drought). Land uses are similar throughout, and potential impacts generally are the same. Thus, any specific cumulative impacts which could occur in any one area are also expected for other areas under the same conditions. Cumulative effects discussed herein are effects of the proposed project in combination with other factors that affect pronghorn antelope and the environment.

Effects of Habitat Loss and Degradation

Negative effects of livestock grazing have decreased since the adoption of the Taylor Grazing Act for Federal land management agencies in the 1930s. Range livestock grazing has become less destructive since the 1930s because of more environmentally sound management. Pronghorn antelope populations have responded favorably to this change in management practices, and while pronghorn antelope numbers would likely increase with complete removal of livestock from the public range, that is not the Department's objective.

Changes in habitat are not expected to be significant in the project area during the next 10 years (Northeastern California Pronghorn Antelope Management Plan, Department files). About one-half to two-thirds of the pronghorn antelope range is public land administered by the BLM and USFS. The majority of pronghorn antelope habitat on public land consists of Great Basin sagebrush-scrub, Alkali desert scrub, Pinyon-juniper, and annual grassland vegetation communities. The Department, USFS, and BLM have habitat improvement and acquisition projects and plans in place. Land-use practices that could affect pronghorn antelope range, such as livestock grazing and vegetation conversion on public lands, are not expected to change significantly in the near future. The fact that most of the project area is publicly owned and managed by Federal agencies will help ensure that land-use changes are minimal.

On private land, increased alfalfa production would likely benefit pronghorn antelope, whereas residential development would have a negative effect. No major changes in private land-use patterns are expected in the near future. The long-term outlook for pronghorn antelope habitat on public land in California is stable to improving, as evidenced by the pronghorn antelope population trend and management priorities of the BLM and USFS. In conjunction with the proposed project, cumulative impacts of habitat degradation are not expected to have significant adverse impacts on pronghorn antelope populations. In combination with the proposed project, grazing by livestock and potential habitat changes will not likely have significant cumulative adverse effects. In fact the removal of individual animals as a result of the project may improve the pronghorn antelope habitat and decrease degradation in the project area.

Effects of Private Lands Wildlife Habitat Enhancement and Management Areas Program

The PLM Program was authorized by the Legislature to protect and improve wildlife habitat by encouraging landowners to manage their property to benefit fish and wildlife (sections 3400-3409, Fish and Game Code). The PLM Program is administered by the Commission (Section 601, Title 14, CCR). Economic incentives are provided to landowners through biologically sound, yet flexible, seasons for game species, resulting in high-quality hunting opportunities which may be marketed by the landowner in the form of fee hunting or other forms of outdoor recreation.

To become licensed for the PLM Program, a landowner must submit an application package, which includes a comprehensive management plan and a nonrefundable processing fee designed to meet all costs of program review. Department personnel review the package and management plan to ensure that proposed habitat enhancements benefit wildlife and harvest strategies comply with accepted goals for the management of the game species involved. After Department approval, the application package is heard by the Commission for final consideration and approval. Once approved, a license is valid for five years.

However, at the end of each calendar year, participants must submit an annual renewal package which includes a report of the completed habitat management activities and the number of animals harvested during the previous year. In addition, Department staff conducts annual inspections of each PLM to determine compliance with regulations and completion of required habitat improvements specified in the management plan and annual report. The Department and the Commission evaluate the renewal package and the compliance inspection report. The Commission then provides final approval and authorizes PLM hunting license tags for the next year.

Habitat Modification

Management plans developed by each participant in the PLM Program contain habitat enhancement goals and objectives to be accomplished over the term of the five-year license. Habitat projects outlined in such plans are directed toward improving habitat for game and non-game species alike. The ultimate goal of these habitat improvement practices is to enhance or stabilize (under adverse ecological conditions) wildlife populations on the area.

The PLM program has been successful as an incentive for landowners to protect or improve wildlife. Habitat improvements implemented on licensed areas include controlled burns, reduced or deferred grazing, water source improvement, planting of forage or cover crops, construction of brush piles as escape cover for smaller species, and development of wetlands, marshes and riparian areas. Such habitat improvements directly benefit numerous non-game wildlife species. Numerous pronghorn antelope habitat improvements have been accomplished, as evidenced by the results of the yearly PLM habitat inspections conducted by the Department (Department of Fish and Game, Wildlife Programs Branch, Sacramento, California).

Harvest Discussion

Some members of the public do not readily accept fee hunting as an appropriate use of wildlife resources and are concerned that fee hunting and special season privileges are provided to landowners to the detriment of the State's wildlife resources. Harvests from both the PLM Program and public hunts are included in the Department's analysis of the effects of harvest on the project areas.

Table 9 lists pronghorn antelope tag allocations and harvests under the PLM and Public hunting programs. Since 1990, approximately five percent of California's pronghorn antelope tags have been allocated to the PLM Program. Within a given year, the PLM tag allocation in northeastern California may not exceed 10 percent of the total allowable harvest for public hunts. The PLM pronghorn antelope tag allocation and harvest is small compared to the total California pronghorn antelope tag allocation and harvest.

Based on the number of pronghorn antelope harvested on PLM's and the licensees' management plans and habitat improvements, no negative cumulative effects are attributed to the PLM harvest. Moreover, the PLM harvest was considered by the Department when evaluating the effects of the proposed project and alternatives in chapters 4 and 5, respectively.

Table 9. Pronghorn Antelope Tag Authorization and Harvest on Private Lands Wildlife Habitat Enhancement and Management Areas and Public Hunts, 1990 through 2003

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
PLM Tags	27	40	70	25	32	40	25	41	30	23	15	11	12	12
PLM Reported Harvest	15	26	47	23	26	28	17	30	20	16	14	10	10	6
PLM Hunter Success %	56	65	67	92	84	70	68	73	67	70	93	91	83	50
Public Tags	915	905	1,578	259	368	533	226	493	454	559	199	192	275	250
Public Reported Harvest	717	753	1,167	195	270	371	188	363	297	347	156	149	205	191
Public Hunter Success%	78	83	72	75	73	69	83	74	65	62	78	78	74	76

The limited PLM harvest, together with the habitat improvement and maintenance activities conducted on each area, suggests that there have been no negative cumulative effects on pronghorn antelope populations. Rather, habitat improvements accomplished specifically for pronghorn antelope and other species have had a positive net effect. Based on its analysis, the Department has determined that the PLM Program, as part of the proposed project, will not have a significant adverse cumulative effect on pronghorn antelope populations.

Effects of Drought

Regions of California periodically receive less than normal precipitation or snowfall (i.e. undergo drought periods). These drought cycles are eventually broken, and in intervening years, record snow and precipitation levels can be recorded. Hence, pronghorn antelope may be periodically and temporarily affected by drought. This does not deviate from the normal historical occurrence of drought. With the pronghorn antelope's proximity to agricultural development and water development on public land in the project area, adverse effects of drought on pronghorn antelope populations have been minimized. Severe changes in agricultural use can occur in an area as a result of drought, which may subsequently affect pronghorn antelope. However, the possibility of drought impairing an established pronghorn antelope population from maintaining itself in a healthy, viable condition is unlikely.

If drought has significant adverse effects on pronghorn antelope, these will be shown by poor condition and decreased survival of individuals, declining production and survival of young and declining population numbers. Such trends can occur periodically with some populations. But, there are no data to indicate that drought has significantly impacted pronghorn antelope in the project area.

Effects of Wildfires

There is a possibility that, under prolonged drought, fire could become more prevalent in the project area. However, it is also possible that fire would become less prevalent in pronghorn antelope habitat if drought inhibits growth of annual plant species. Annual plants serve as the fine fuels which are necessary to carry a fire through sagebrush range. Impacts of wildfire may be positive or negative for pronghorn antelope. While they may derive forage benefits from the conversion of shrubland to grassland as a result of fire, if the fire is too large in area, the reduction in low shrub cover (for hiding fawns or winter feed) can be detrimental.

In 1999 there were numerous wildfires caused by lightning within the project area during the hunting season. Although these wildfires and the resulting suppression actions may have disrupted hunting activities, the pronghorn antelope population was not adversely affected.

Based on a review of historical records from agencies such as the BLM, USFS, and California Department of Forestry and Fire Protection, the possibility of wildfires impairing the statewide pronghorn antelope population from maintaining itself in a healthy, viable condition is unlikely. The Department has excellent long term population data for pronghorn in northeastern California (Figure 9), which document population growth since the 1940s and are strongly indicative that events such as wildfires, severe winters and drought have not had long term adverse effects on pronghorn antelope. No significant effects of fire in concert with hunting are expected to affect the pronghorn antelope population.

Effects of Disease

Historical data indicate that pronghorn antelope are remarkably free of disease (Department of Fish and Game, Wildlife Investigations Lab data, Rancho Cordova, California). The Department routinely collects blood samples from captured pronghorn antelope. During the past 20 years, the Department has analyzed pronghorn antelope blood samples to systematically determine the prevalence of disease and to assess the general health of the State's pronghorn antelope resource.

Currently, some members of the public are concerned about the importance of chronic wasting disease (CWD) to wildlife. CWD has been detected in cervids (primarily deer) from several other states, but to date, has not been detected in California. It appears that the potential for pronghorn antelope in California to be affected by CWD is minimal, at present.

There are no data available to indicate a potential for pronghorn antelope in the project area to be significantly impacted by a major disease outbreak. The proposed hunts were developed using information collected over a very long time frame (1942-present.) The information was collected from herds that were experiencing mortality from the limited impacts of disease and other non hunting factors. Disease, in conjunction with the mortalities associated with hunting and other factors does not adversely impact pronghorn antelope (Salwasser 1980, Autenreith 1983, Department of Fish and Game, Wildlife Investigations Lab, Rancho Cordova, California).

Effects of Illegal Harvest

Illegal take of pronghorn antelope is low and is considered to have no significant impact on the population (Lt. Mike Wolters, Alturas, California, unpublished data, January 1996). The Department's field patrol officers only issue a few citations each year for the illegal take or possession of a pronghorn antelope (see Table 10).

Table 11 shows the number of warden and lieutenant positions in 2003 listed by selected Fish and Game divisions/regions. The project area is within regions 1, 4, and 5. The wardens and lieutenants are usually assigned to particular areas and duties, but may be assigned to cover special projects, including aerial and ground surveillance during hunt periods. Numbers in Table 11 represent decrease in enforcement staff over the prior year, due primarily to budgetary reductions. However, this reduction is not expected to have a significant impact on enforcement procedures. Although the number of Department enforcement personnel may have declined from levels of previous years, the overall numbers of hunters in the field has declined concomitantly, as shown by the decline in license sales. Pronghorn antelope hunting occurs primarily in Region 1, where the reduction in enforcement personnel is minimal. Therefore, the project is not likely to have a significant effect on large game mammal populations when combined with the effects of poaching and fewer wardens in the field.

Table 10. Citations Involving Hunting Pronghorn or Illegal Take of Pronghorn

Year	Citations
1991	1
1992	4
1993	0
1994	3
1995	2
1996	0
1997	0
1998	0
1999	1
2000	5
2001	1
2002	0
2003	0

(Department of Fish and Game, Redding, California)

Table 11. Number of Warden and Lieutenant Positions Listed by Region, 2003 Region/Division

Class	Region 1	Region 2	Region 3	Region 4	Region 5	Region 6	OSPR	HQ	Total
Warden	26	34	38	28	33	21	13	17	210
Lieutenant	6	9	8	5	8	3	4	3	46
Captain/ Chief	3	5	3	5	3	3	3	7	32

HQ=Headquarters, OSPR=Oil Spill Prevention and Response

In addition to Department personnel, other Federal, State, and local law enforcement officers have the authority to enforce the Fish and Game Code and Title 14, CCR. Approximately half of the proposed project area is within lands patrolled by BLM and USFS law enforcement personnel. The county Sheriff, local police, and other State peace officers (California Highway Patrol, State Park Rangers, State Foresters) may be called upon to respond to violations regarding illegal take of California wildlife. In addition, the Department provides a well-publicized, toll-free phone number (1-800-952-5400) for citizens to anonymously report possible violations. This program may encourage a reluctant individual to report a violation.

More pronghorn antelope appear to be lost to freak accidents (e.g., collisions with vehicles or trains) than to illegal take. Illegal harvest, especially out of season, is a rare occurrence and is not a significant adverse impact on the pronghorn antelope population.

Effects of Depredation

The Department does not have the authority to issue permits to kill pronghorn antelope causing property damage (Section 4181, Fish and Game Code). Because of this, management activities such as hunting and translocating pronghorn antelope are used to minimize private property damage problems.

Effects of Vehicle-Caused Mortality

The number of pronghorn antelope killed by vehicles is not well documented. Unlike deer, very few pronghorn antelope appear to be killed by automobiles (although at least 10 pronghorn were killed by a vehicle on Interstate Highway 5 outside the proposed hunt areas in Glenn County during 2001). During severe winters in northeastern California, pronghorn antelope have utilized the cleared railroad tracks for bedding areas and trails. Trains have killed pronghorn antelope that were on the tracks (Stone, Department of Fish and Game, Redding, California, unpublished data, January 1993). No significant effects of vehicle-caused mortality in concert with hunting are expected to adversely affect the pronghorn antelope population.

WELFARE OF THE INDIVIDUAL ANIMAL

Introduction

Section 203.1, Fish and Game Code, provides as follows: "When adopting regulations pursuant to Section 203, the Commission shall consider populations, habitat, food supplies, the welfare of individual animals, and other pertinent facts and testimony."

Consideration of pronghorn antelope populations, habitats, food supply, and other facts pertinent to the anticipated effects of the project on pronghorn antelope are contained in this environmental document that the Department has prepared to satisfy its obligation to comply with CEQA. This section deals only with considerations of individual animal welfare. This subject is discrete and distinct from those included in the CEQA-mandated environmental analysis. It is an additional obligation imposed on the Department by the Fish and Game Code. This chapter is included in this document for convenience and to permit the public and interested persons to consult a single document in order to read and evaluate the Department's analysis.

Effects of Various Methods of Take

Section 353, Title 14, CCR, describes the methods authorized for taking pronghorn antelope. The Commission has authorized the use of rifles using center fire cartridges with soft nose or expanding bullets; bow and arrow; and wheel lock, matchlock, flintlock, or percussion type muzzle-loading rifles of at least .40 caliber. Historically, these methods have been used to take a variety of big game species throughout North America. With the Commission's specified equipment restrictions these methods are efficient and effective for taking pronghorn antelope.

Section 354, Title 14, CCR, contains provisions for the use of archery equipment as a method of take. It restricts arrows to those with a broad head type blade that, when open, will not pass through a whole seven-eight of an inch in diameter. In addition, bows used for pronghorn antelope must be sufficient to cast a legal hunting arrow a horizontal distance of 130 yards. These restrictions are designed to ensure that animals are shot with equipment capable of killing efficiently. Recently, the efficacy of archery equipment for the take of big game has been questioned. In particular, concern has been expressed that animals taken with archery equipment experience undue suffering. In order to fully disclose the various aspects of the controversy about the use of archery equipment to take big game, the Department has conducted a thorough review of the archery wounding issues and archery literature later in this section ("Effects of Wounding").

Few premises are more obvious than that animals can feel pain [Journal of the American Veterinary Medical Association (JAVMA) 1987, page 1,186], regardless of the method of take. Determining whether an animal is experiencing pain or suffering is difficult. Despite this difficulty, many manifestations of pain are shared by many animal species (JAVMA 1987, page 1,186). The intensity of pain perceived by animals could be judged by the same criteria that apply to its recognition and to its physiologic and behavioral observations in human beings. If a condition causes pain in a human being, it probably causes pain in other animals (JAVMA 1987, page 1,188).

Suffering is a much used and abused colloquial term that is not defined in most medical dictionaries. Neither medical nor veterinary curricula explicitly address suffering or its relief. Therefore, there are many problems in attempting a definition.

Nevertheless, suffering may be defined as a highly unpleasant emotional response usually associated with pain and distress. Suffering is not a modality, such as pain or temperature. Thus, suffering can occur without pain; and, although it might seem counter-intuitive, pain can occur without suffering (JAVMA 1987, page 1,188).

There are anecdotal accounts of pronghorn antelope being shot and exhibiting no visible signs of pain. However, the Department assumes that pain results from substantially all incidents of animals being shot, either by arrows or bullets. The degree of pain experienced by individual animals probably ranges from little or no pain to significant pain.

Bullets

In the case of bullets, it has been determined that center fire bullets transfer sufficient energy to the animal to cause fatal wounds and traumatic shock adequate to bring about quick death. Despite these performance standards, time to death is affected by shot placement. An animal shot with a firearm in the heart-lung area or a critical portion of the central nervous system, such as the brain or spinal cord, will generally die in less than 22.3 seconds, with a range from one to 26.4 seconds (Ludbrook and Tomkinson 1985, page 13). An animal shot in a less vital area may not die for a considerably longer period of time, ranging from 240 to 360 seconds, depending on the location (Ludbrook and Tomkinson 1985, page 13). Some shots in non-vital areas wound but do not kill the animal (Benke 1989).

Archery

In the case of archery equipment, it has been determined that bows transfer sufficient energy to an arrow (fitted with a razor-sharp broadhead) to cause a fatal wound by cutting arteries and veins resulting in blood loss. In addition to severing the blood supply, arrows shot through the lungs cause the lungs to collapse, causing rapid death. Broadheads can also cut through softer bones, such as ribs. However, arrows shot from even a very heavy bow (draw weight) will rarely penetrate large bones found in the shoulder, hips, head, and neck.

Despite these performance standards, time to death is affected by shot placement. An animal shot with an arrow in the heart-lung area or spinal cord will generally die in less than 29.7 seconds, with a range from one to 36.2 seconds (Ludbrook and Tomkinson 1985, page 13). An animal shot in a less vital area may not die for a considerably longer period of time, ranging from 18 to 397 seconds, depending on the location (Ludbrook and Tomkinson 1985, page 13). Some shots in nonvital areas wound but do not kill the animal (Benke 1989). Archery wounding issues will be discussed later in this section ("Effects of Wounding").

Much public controversy exists over the effects of using archery equipment for taking pronghorn antelope. This is evidenced by the successful legal action taken in

1990 to stop the archery bear season. In an effort to disclose the available information regarding the effects of archery hunting, the Department has reviewed the archery literature. While little specific information has been published on archery take of pronghorn antelope, information is available on the effectiveness of archery equipment for taking deer (primarily white-tailed deer). The effectiveness of archery equipment for taking mammals such as pronghorn antelope and deer is discussed further in the "effects of wounding" section.

The Commission has authorized an archery-only season for pronghorn bucks annually since 1982. An archery-only season was authorized for does in 1991, 1992, 1998 and 1999. Average hunter success during the archery-only season is relatively low, and the harvest has been a minor portion of the total pronghorn antelope harvest (i.e. less than three percent; see Table 3). Based on the archery analysis and the low level of archery hunting, the Department does not expect significant effects due to archery or rifle as a method of take.

Use of Dogs

California law (Section 357.1, Title 14, CCR) prohibits the use of dogs while hunting pronghorn antelope. The use of dogs is not applicable to this issue.

Chase Related Effects

It is possible that an individual pronghorn antelope will be chased by hunters. Such a chase would probably cause the animal to suffer anxiety, fear, and stress. Anxiety is generally defined as an unfocused response to the unknown (JAVMA 1987). Fear is a focused response to a known object or previous experience (JAVMA 1987, page 1,187). Stress is commonly defined as the effect of physical, physiologic, or emotional factors that induce an alteration in an animal's homeostasis or adaptive state.

Stress and its subsequent responses may be categorized in three ways. These are: (1) neutral stress - this form of stress is not intrinsically harmful and evokes responses that neither improve nor threaten the animal's well being; (2) eustress - stress that involves environmental alterations that in themselves are not harmful to the animal but which initiate responses that may in turn have potentially beneficial effects; and (3) distress - stress that creates a state in which the animal is unable to adapt to an altered environment or to altered internal stimuli (JAVMA 1987, pages 1,187-1,188).

Animals may experience anxiety and fear in response to naturally occurring stimuli. For example, pronghorn antelope are naturally chased by predators. Hunt-related pursuit by humans may subject the individual to anxieties or fears that are qualitatively different from naturally occurring anxieties and fears. It is assumed that pronghorn antelope, if given a choice, would choose not to be pursued. In this sense, pursuit may be viewed as having an adverse effect on individual animal welfare.

The three recognized forms of stress (JAVMA 1987, pages 1,186-1,187) have different manifestations. Eustress is not applicable. The project will not alter the individual pronghorn antelope's environment. Pronghorn antelope have evolved an exceptional physical ability to flee from pursuers. Consequently, pursuit by hunters does not represent a change to the pronghorn antelope's natural environment sufficient to prompt further evolutionary responses.

Neutral stress and distress are both potentially relevant and adverse. Neutral stress would be exhibited by an animal fleeing from hunters and would probably continue up to the point at which the pursuit ended. Presumably, the pursuit would end when the animal evaded its pursuers or was shot by the hunter. Effects of wounding will be discussed separately.

Additionally, behavior exhibited by pronghorn antelope during pursuit may indicate that the stress of the pursuit is lessened by its own curiosity. Pronghorn antelope are known to approach a hunter after the pursuit. Although pronghorn antelope may quickly leave an area during pursuit, they often immediately return.

A pursued animal could experience some degree of distress. The distress could become more acute if the animal were cornered or otherwise became unable to successfully flee. If the stress-inducing stimuli are short-term, the animal's responses should not result in long-term harmful effects. Prolonged or excessive stress may result in harmful responses, such as abnormal feeding and social interaction behavior and lowered reproductive success. It has been reported that long-term distress in animals can result in pathologic conditions, such as gastric and intestinal lesions, hypertension, and immuno-suppression (JAVMA 1987, page 1,188).

Both neutral stress and distress may be viewed as adverse effects on the welfare of individual animals. Neutral stress resulting from the project may be different from naturally occurring neutral stress because of the possibility of pursuit by hunters. However, this potential stress is not expected to have long-lasting effects, because each chase presumably terminates with the pronghorn antelope's escape or death. Although distress is capable of producing long-term adverse effects, the project is not expected to have that result, because the hunting season is of limited duration and any distress-inducing conditions will be temporary.

Effects of Wounding

Because pronghorn antelope inhabit open range, wounding loss is extremely low. Animals shot do not often escape from the view of the hunter. A summary of wounding loss, as reported by California pronghorn antelope hunters, indicates that less than 10 percent of the animals shot are wounded and lost in a given year (Figure 14).

Cumulatively, wounding loss has been less than two percent of all animals shot. The following is a detailed summary of the effects of wounding. Its inclusion here is to

address the issue of wounding by archery and rifle equipment. To the Department's knowledge, there have been no recent scientific studies from other states of wounding effects on pronghorn antelope under the conditions of the pronghorn hunts in California.

Wounding is the most significant adverse effect that the project will have on the welfare of individual animals. As a result of the project, individual animals may be wounded.

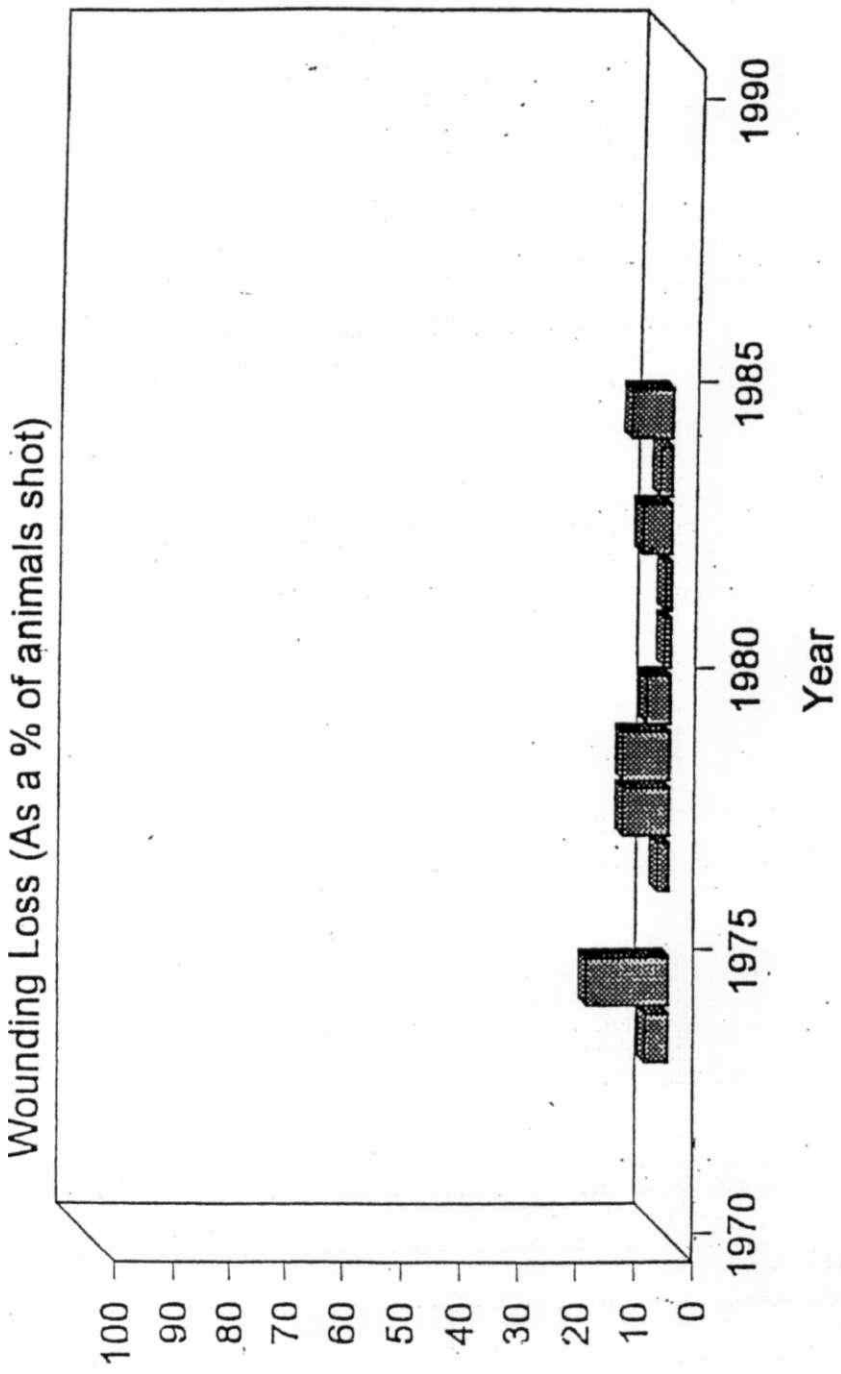
Wounding is a generic term that refers to any nonlethal injury (McCaffery 1985). The nature of the specific wounds ranges from superficial to seriously disabling (Nettles et al. 1976, Burke et al. 1976, Lohfeld 1979). In many cases, a seriously disabling wound may lead to the animal's death from secondary causes, such as infection or disability that prevents the animal from successfully foraging for food, evading natural predators, or performing other functions necessary to its survival (Nettles et al. 1976). The wounding of animals is an unavoidable result of hunting. Wounding rates vary considerably, depending on the type of equipment used (guns or archery equipment). Death caused as a result of these wounds (wounding loss) varies as well.

Some authors suggest that archery wounding rates and loss are as high as 80 to 100 percent of the legal take (Boydston and Gore 1987, Benke 1989, Pacelle 1990). Others believe that, while archery wounding rates can be as high as 50 percent of harvest (Downing 1971, Herron 1984), wounding loss is less than 15 percent (Lohfeld 1979, Herron 1984, Ludbrook and Tomkinson 1985, Fuller 1990).

The effects of wounds on the individual animal are the subject of much debate. Benke (1989) states that broadheads are ineffective in killing deer and thus cause much pain and suffering. The contrary view of this effect is offered by Georen (1990a) and Dr. Bruce Stringer (International Bowhunter Educational Manual 1989, pages 33-34). They believe that lethal wounds result in quick, near painless death due to blood loss. Moreover, Nettles et al. (1976) asserts that long-term suffering resulting from traumatic injury probably affects very few deer.

Existing evidence is inconclusive as to the extent to which archery wounds lead to infection. Benke (1989) and Pacelle (1990) state that a common cause of death is septic infection caused by arrow wounds. They contend that arrows generally inflict dirty wounds, because numerous hairs are drawn into the wound. Bacteria from the clipped hairs begin multiplying in the wound channel and eventually cause death.

Figure 14
Reported Pronghorn Antelope Wounding Loss 1970-90,
as a Percentage of Animals Shot



Blanks - no reported wounding loss
(California Department of Fish and Game Files, Redding, California)

The Department was unable to identify studies that have been published that measure or evaluate whether these wounds cause septic conditions. It has been suggested (Georen 1990a), however, that non-lethal wounds cause relatively clean wounds and that such wounds bleed profusely.

It is clear that wounding causes pain. The extent or level of this pain (considering the type of wounds) felt by the animal is unclear and the information available is inconclusive.

Archery Wounding Issues

The public, as well as wildlife managers and scientists, have raised numerous questions regarding archery wounding. The issue of archery wounding is controversial. These questions have created public concern over the effects of archery wounding on big game populations and the welfare of individual animals. In order to address these concerns, the Department has identified and analyzed the key archery wounding issues. These issues were identified based on the concerns raised in scoping sessions, past testimony at Commission meetings, previous lawsuits, and the literature (scientific and popular). The major archery wounding issues are as follows:

1. **Fewer Animals are Taken with Archery Equipment than with Firearms** - In California, the archery-only pronghorn antelope harvest constitutes less than 3 percent of the total harvest (Table 3). Studies by Downing (1971), Stormer et al. (1979), Langenau and Aho (1983), Fuller (1990), and others have found similar results. They report that fewer animals are taken with bows than with guns.

2. **There are Fewer Bowhunters than Firearm Hunters** - Approximately three percent of the applications for pronghorn antelope hunts are from hunters wanting to hunt in the archery-only season. While hunters possessing a general season pronghorn antelope tag can hunt with either bow and arrow or rifle, tag returns indicate few, if any, elect to use archery equipment during the general season (California Department of Fish and Game data, Sacramento, California).

3. **Bowhunters Have a Lower Success Rate than Firearm Hunters** - General season pronghorn antelope hunters have averaged above 70 percent success for bucks. Archery-only season hunters have averaged less than 30 percent success for bucks (1980-present Department of Fish and Game data, Sacramento, California). Similar results were found for other states by Downing (1971), Stormer et al. (1979), Langenau and Aho (1983), Benke (1989), Fuller (1990), Lemke (1990), and others.

4. **Bowhunters Generally Spend More Time in the Field Per Animal than Firearm Hunters Do** - During the 2001 pronghorn antelope season in California, archers spent 7.7 days in the field per animal taken (based on report cards; n=7),

whereas rifle/black powder hunters spent 3.3 days in the field per animal taken (n=176 report cards). Studies in other states have established several relationships related to archery deer hunting. Research by Herron (1984) found an average of 7.5 deer was harvested per 100 bowhunter days. Similarly, Severinghaus (1963) found that deer harvested per 100 hunter days for archery hunting on the Howland Island Game Management Area in New York ranged from one to 16, depending on the year. Conversely, he found that firearm hunting resulted in a range of 13-66 deer per 100 hunter days in the same area. Langenau and Aho (1983), in their review of the relative impact of firearms and archery hunting on deer populations, reported that "about 17 percent of all deer hunting in the United States during 1976 was done with bows: 11.4 million days of archery deer hunting and 54.6 million days of firearm deer hunting."

5. **Archery Wounding Losses are Higher than Firearm Wounding Losses -** Existing information is inadequate to establish exact percentages. Publications by Boydston and Gore (1987), Benke (1989), Pacelle (1990), and others state that broadheads (bowhunting in general) are an ineffective method of taking big game, and hence result in excessive (50-100 percent) wounding loss. Benke (1989) notes "that he personally wounded three or four animals for each one he killed." In addition, Benke contends that "archery wounding is the most denied problem in bowhunting and the most ignored problem in wildlife science." An opposite perspective on this issue is presented by Lohfeld (1979), Herron (1984), Ludbrook and Tomkinson (1985), and Fuller (1990). Ground search studies conducted by these researchers found that archery wounding rates ranged from seven to 40 percent. However, field verification to determine actual wounding loss for these hunts ranged from zero to 14 percent.

6. **Animals Generally Live Longer After Being Shot With an Arrow than After Being Shot With a Bullet** - Existing information is inadequate to establish exact "time-to-death" measurements. Benke (1989) states that broadheads are very ineffective in killing deer. Specifically, he relates a personal experience where he watched and waited for 20 to 30 minutes for a spine/lung-shot buck to die. Being unable to "handle it any longer" he dispatched the animal with an arrow through the heart. Moreover, Pacelle (1990) states that animals shot with arrows routinely contract peritonitis or a septic infection, hence suggesting that death is slow. He also reiterates Benke's (1989) assertion that the average killing time of hunting arrows must be measured in days rather than hours or minutes.

Ludbrook and Tomkinson (1985) provide data on immobilization time of animals shot with broadheads and rifles. They report that immobilization time of 17 animals shot with 60-pound compound bows with broadheads in the chest cavity averaged 30 seconds. This compares to 28 animals shot in the chest cavity with rifles becoming immobilized in 22.3 seconds. Compound bows dropped 32 animals within an average of 100 meters, while 17 animals shot with a .30/06 rifle died within an average of 70 meters. It is important to note that the

range of immobilization time from "drug-free" arrow hits found by Ludbrook and Tomkinson (1985) is similar to the findings of Causey et al. (1978), where succinylcholine chloride (SCC) tipped arrows were used (ranged from zero to 45 seconds).

Additional data on distance traveled after being hit by arrows is provided by Georen (1990a). Distances covered by the animals after being shot were correlated to shot placement. Hits in the head, neck, and spine had the highest frequency of animals covering less than 50 meters, while hits in the heart/lung area had the highest frequency of animals covering less than 100 meters.

7. **Broadhead Arrows Cause Less Trauma to Surrounding Tissues than Bullets** - Little disagreement exists on this issue. Work by Ludbrook and Tomkinson (1985) shows that, when an arrow fitted with a sharp broadhead strikes a nonvital area, a minimum of surrounding tissue damage occurs. They state that arrow wounds sustained by animals in nonvital places are most likely to heal completely because of the lack of extensive tissue damage compared to gunshot wounds. Similar conclusions can be drawn from data collected by the Lonestar Bowhunter Association (1989), where archers experienced "through" shots (total pass through of the arrow) on 46 of the 102 deer killed.

8. **There is Evidence that Slotted Broadhead Arrows Carry Hair and Other Surface Materials into the Wound Channel** - Existing evidence is inconclusive as to the extent to which this leads to infection. Benke (1989) and Pacelle (1990) state that a common cause of death is septic infection caused by arrow wounds. They assert that "arrows generally inflict dirty wounds, due in part to the structure of the most popular, multibladed broadheads." They suggest that slotted, multibladed broadheads drag numerous hairs into the wound channel. Thus, the bacteria from the clipped hairs begin multiplying in the wound channel and eventually cause death. Similarly, Boydston and Gore (1987) contend that "about all abdominally shot deer die a slow death due to peritonitis." However, in their technical report, Boydston and Gore (1987) do not provide any data where death by peritonitis is measured.

Wegner's (1990) article on wounded deer behavior in *Deer and Deer Hunting* states that "it should be pointed out that university researchers at Auburn University are currently studying the broadhead wound channels of eighty-six euthanized white-tailed deer. Their findings indicated that in 100 percent of the wounds clipped hairs are present that can lead to serious infection, thus casting doubt on this whole notion of clean wounds and unique survivability."

In an effort to gain more information on this study, a representative of the Department contacted the researcher at Auburn University (Dr. Causey). The work at Auburn University is concentrated on studying the broadhead wound

channel inflicted on carcasses of wild white-tailed deer (depredation kills). No data on infection were collected; hence no preliminary conclusions were reached. Information collected on these wound channels was restricted to the depth of penetration and amount of hair in the wound.

Dr. Causey's work concentrated solely on examining the ability of smooth-blade versus slotted-blade broadheads to carry hair into the wound. No assessment was made on the type or amount of bacteria associated with the hairs in the wounds. He stated that "anything written about his work beyond the results of the simple test of the two broadhead types was purely 'poetic license' on the part of the author." He made no attempt to determine if the wounds caused a septic condition or to speculate on deaths caused by hairs being drawn into the wound (Causey pers. comm.). He did state, however, that both types of broadheads did draw hair into the wound, with more hair being present with the slotted-type broadhead, but that the ultimate effect of this is unknown.

A contrary view of the notion that arrow wounds cause septic conditions is presented by Georen (1990a). Dr. Georen notes that "non-lethal broadhead wounds can cause a relatively clean wound." Such wounds bleed profusely, "with an inner cleaning effect" before bleeding is impeded by thrombosis, arterial spasm, coagulation, etc. He states that the local damage is free of contusion and normally heals quickly and without complications. Geist (1987) provides a biological perspective on the ability of cervids (deer family) to deal with infections caused by puncture wounds. This popular magazine article was based on his peer-reviewed journal article entitled New Evidence of High Frequency of Antler Wounding in Cervids (Geist 1986). The author examined hides from dead deer, elk, and moose. He found that the average buck deer or bull elk received 20-30 wounds per year. Wounds ranged from zero on young of the year to 225 on a 10.5-year-old moose. He concluded that puncture wounds are a very common natural occurrence. Geist (pers. comm.), commenting further on his results, noted that he doubts the relevance of his study to the problem of hair entering deep body wounds. However, he believes that "no doubt antler wounds are 'well inoculated' with dirt." Thus, antler wounds can be badly infected.

There is Evidence that Lethal Arrow Wound Channels Bleed Profusely, and Hence Animals Bleed to Death - Generally, animals must lose about 35 percent of their total blood volume in order to succumb to death. There is approximately one ounce of blood per pound of body weight in the circulatory system of animals like deer. Thus, a 100-pound pronghorn antelope would have about 100 ounces of blood in its system and would have to lose about 35 ounces (2.125 pints of blood) in order for death to occur. According to Dr. Bruce Stringer, veterinarian and Director of the Rio Grande Zoological Park, broadheads cause some level of shock. "Shock produces a numbing effect and the razor sharp broadhead probably causes little discomfort. As blood loss occurs, a near painless death follows."

Georen (1990a), in his article on the Mechanism of the Hunting Arrow, states that "An arrow with a broadbladed razorsharp point has a rapid mortal effect when penetrating the chest of game. This effect derives from a quick clearing of blood causing acute hypoxia, from suspended lung function or a combination of both." Dr. Georen states that "in the case of an arrow hit in the central lung area several of the lung arteries will invariably be cut. To some extent the bleeding time can be illustrated by water running from three hoses with an inner diameter of 0.5 cm and the pressure of the lung arteries of 0.5 liters will last six seconds."

10. **Evidence from Necropsy Studies Indicate that Relatively Few Animals Suffer from Crippling injuries, Whether Caused Naturally or from Hunting -** Animals with natural or hunting-caused wounds appear to recover with little or no external manifestation of the injury. Nettles et al. (1976) reported on frequency of chronic debilitation of white-tailed deer from necropsy records on 1,002 animals collected for scientific purposes throughout the southeastern United States. The evidence of previous injury was only present in 76 deer (7.6 percent). Percentages of injured deer did not vary significantly according to sex, physical condition, or six-month periods associated with high or low hunting pressure. They stated that "the few deer which survive injury do not become debilitated, as evidenced by the fact that deer in poor physical condition comprised only 6.6 percent of all injured animals. Thus, long-term suffering resultant to traumatic injury probably affects very few white-tailed deer." They reported that five of the 1,002 deer examined (0.5 percent) showed signs of previous arrowhead wounds. Similar effects would be expected for pronghorn antelope. Similar results were reported by Burke et al. (1976) and Lohfeld (1979), where less than one percent of the animals taken by hunters showed signs of debilitating hunting wounds.

11. **In Order to Make Arrows More Lethal and Lessen Archery Wounding Losses, it has been Proposed that Archery Hunters be Required to Use SCC as an Alternative or Adjunct to Broadheads** - Causey et al. (1978), Boydston and Gore (1987), Benke (1989), and Pacelle (1990) all support the use of SCC as an alternative to render arrows more lethal, hence reducing wounding loss. Benke (1989), in The Bowhunting Alternative, presents the idea that using the drug SCC on broadheads will reduce wounding losses. The author utilizes personal opinion, personal experiences, and selected references from the literature to establish his conclusion.

"To render bowhunting even minimally humane," Benke advocates "the use of the tranquilizer SCC as a means of ensuring that the target animals will die quickly without needless misery." He was contemptuous of "elitists" who,

arguing that using such a drug diminishes the primal pleasure and athletic challenge of the sport, are willing to inflict needless suffering on their hopeless prey.

Causey et al. (1978), in a study of bowhunting white-tailed deer with SCC-treated arrows, found that the average elapsed time to knock-down time was 13 (ranged from zero to 45) seconds. This result was based on 42 observations of the 88 deer shot with SCC-treated broadheads (16 percent wound rate and three percent known crippling losses with SCC-treated arrows). The authors found that wounded deer traveled an average of 112 (ranged from zero to 376) paces (approximately 100 meters) after being struck by a treated arrow. They conclude that "the addition of SCC to the broadhead hunting arrow in the manner described herein greatly increases the killing efficiency of the bow and arrow. The question is whether the decreased crippling rate and increased recovery rate of deer shot with drug-treated arrows adequately compensates for any undesirable aspects of using these arrows."

There are several aspects of the drug issue, such as legality, humaneness, public safety, and ethics that need further discussion. There is some question about whether the use of such drugs is legal under Federal law, pending testing of the delivery system (SCC pod) by the Food and Drug Administration. Also, SCC is an extremely dangerous drug. Placing chemical substances on arrows could lead to the accidental death of a person coming into contact with the arrow.

Dr. Edward Often, Director of Toxicology in the Department of Emergency Medicine at the University of Cincinnati Medical Center and a member of the Board of Directors of the Wilderness Medical Society, suggests that using SCC would make death less humane, because it kills by suffocation (unpublished data). Postoperative muscle pain occurred in 60 percent of patients given SCC (Waters and Mapleson 1971, Verma et al. 1978).

Research conducted by Dr. E. Murl Bailey, a Professor of Toxicology, Experimental Surgery, and Pharmacology at Texas A&M University, has found that drugs such as SCC cause a very cruel death (M.R. James, Bowhunter April/May 1990). Dr. Bailey's research shows that massive doses of SCC cause very painful death, as consciousness continues long after respiration ceases. He concludes, therefore, that the drug can cause inhumane deaths and is dangerous for use in bow and arrow sport hunting.

Gutierrez et al. (1979) discuss the ethics of using SCC in a paper on hunting ethics, self-limitation, and the role of SCC in bowhunting. Although they strongly believe that the incidence of wounding deer should be decreased, they do not subscribe to the use of drug-treated arrows to accomplish this goal for the following reasons.

a. "The concept of bowhunting as a primitive sport placed emphasis on hunting skills rather than equipment sophistication. Adding drugs to modern archery tackle eliminates much of the primitive aspect of the sport-the aspect giving bowhunting its greatest appeal to many archers."

b. "The potential danger of increasing the incidence of fatal human accidents from drugged arrows must be considered carefully once the entire animal becomes a vital area, as shot selection and good arrow placement are less important. Under these conditions we feel there will be a tendency for less cautious target identification, thus increasing the potential for human error and accidents."

c. "Crippling rate (more accurately wounding rate) and crippling loss are not equivalent, but with drug-treated arrows more wounded deer would die."

d. "As Leopold (1943) warned and Kozicky (1977) reemphasized, the modern hunter is quickly becoming a gadgeteer. Some sportsmen have refused to become a part of this gadget-oriented hunting trend; they choose to use muzzle-loading firearms and archery equipment (although there certainly are gadgeteer archers). Their attempt at self-limitation is evidence of their efforts to increase the sport in sportsmanship. Wildlife managers should be encouraged by, and should encourage this attitude. The use of drug-treated arrows would likely encourage less competent archers to go a field unless more stringent requirements were set to qualify for an archery license."

The project has been designed to limit wounding through the specification of minimum performance requirements for archery equipment and firearms. It is expected that some wounding will nevertheless occur. The methods of take are not 100 percent lethal. Lethality is largely a function of hunter skill and accuracy.

Conclusion

The successful hunting of an animal results in the death of that individual. This is an adverse effect on the individual animal's welfare. Data and experience indicate that some animals killed as a result of the project would have died from other non-hunt-related causes. Nevertheless, in order to adequately analyze the effects that the project will have on an individual animal's welfare, the Department assumed that all animals killed by the project would have survived in its absence. Although some impacts may have a minor temporary effect on the environment, none of these impacts, either singly or in combination, will be significant.

CHAPTER 5. ANALYSIS OF ALTERNATIVES TO THE PROJECT

INTRODUCTION

In addition to the proposed project, the Department is providing the Commission with a range of five alternatives to the project which could feasibly attain the basic project objectives for pronghorn antelope management. They were selected to provide the Commission with a range of hunting alternatives to consider.

There is some public sentiment against hunting, and that segment of the public may consider other alternatives as viable means to achieve some management objectives. An alternative that does not include hunting is provided to the Commission for consideration. Consideration of such alternatives "foster informed decision-making and informed public participation" [CEQA Guidelines Section 15126(d)] towards meeting management objectives for pronghorn antelope. These alternatives are:

Alternative 1. No Change

The no change alternative would maintain quotas, season dates, boundaries and other special conditions for each hunt without change. It is unlikely that significant irreversible impacts would occur immediately or statewide as a result of selecting the no change alterative. However, this alternative is not recommended because it does not provide hunting opportunities that would maintain pronghorn antelope populations at desired levels, consistent with biological/environmental conditions. Retaining existing tag quotas for each zone is not responsive to biologically-based changes in the status of various herds. Management plans specify desired sex and age ratios which are attained/maintained in part by modifying tag quotas on an annual basis. In order to maintain hunting quality in accordance with management goals and objectives, it is periodically necessary to adjust quotas.

Alternative 2. Increased Harvest

This alternative would result in a significant increase in the pronghorn antelope harvest by issuing 50 percent more tags than the maximum in Table 1. Additionally, approximately 50 percent more PLM tags would be authorized under this alternative. Resulting harvest quotas would likely reduce and/or keep population numbers in the project area well below the objective level established by the Department.

Initially, hunter opportunity would significantly increase under this alternative because 50 percent more pronghorn antelope tags would be issued compared to the proposed project. This alternative would provide the most recreational (hunting) and economic benefits of any alternative in that it would provide the highest number of hunting opportunities, for the immediate future. Due to the short season, this alternative would not have a significant effect on non-consumptive recreational opportunities. However, it would reduce the quality of the hunt because of increased

hunter densities. Presently, hunters describe the pronghorn antelope hunt as a premier experience, partly due to the relatively low hunter densities. In addition, the significant increase in the harvest would likely cause an equally significant decrease in the number of tags in following years.

Pronghorn antelope population levels would be immediately reduced but might recover based on increased survival of young the following year(s) (Hess 1986). It is likely that habitat quality would improve somewhat as grazing and browsing is reduced. This alternative has the potential to improve the general health of the hunted pronghorn antelope populations in that it results in more rapid turnover of the population and increased fawn production and survival, as well as a younger age structure in the population. This alternative would not significantly affect the environment.

This alternative initially provides the highest level of pronghorn antelope hunting opportunity. But at current population levels, local, regional, and statewide pronghorn antelope populations may eventually experience significant negative impacts. Coordination with Oregon and Nevada biologists for the interstate portion of the northeastern California population has provided an agreement to manage pronghorn antelope for a minimum post-harvest buck-to-doe ratio of 20 to 100. However, based on simulation modeling, this alternative would result in a lower buck-to-doe ratio than any other state. A 50 percent increase in a buck-only harvest would eventually reduce buck-to-doe ratios in each hunt area well below 24 bucks to 100 does. A post-harvest ratio of 24 bucks per 100 does will maintain a healthy and viable population by assuring a sufficient number of bucks for breeding.

The increased harvest alternative would likely necessitate a dramatic reduction in the number of license tags in subsequent years to compensate for the significantly increased harvest expected under this alternative. The Department recommends the proposed project over this alternative so that pronghorn antelope can be managed consistently in a cautious and biologically conservative manner. Therefore, this alternative was judged less desirable by the Department than the proposed project.

Alternative 3. Reduced Harvest (Bucks Only)

Under the reduced harvest alternative, only 50 percent of the number of tags in the proposed action would be issued (see Table 1). These would be buck only tags. The total PLM tag allocation would also be reduced. This alternative would reduce hunter opportunity and provide only minimal herd reductions in areas where depredation and range overuse could be causing damage. Fawn-to-doe ratios, an indicator of population health, are negatively correlated with density of pronghorn antelope (Figure 11) (Pyrah 1987). As the population reaches or exceeds carrying capacity, further range degradation would be expected and, ultimately, a lowered carrying capacity for pronghorn antelope would result. Thereafter, lowered fawn recruitment and higher natural mortality would be expected to occur under this alternative.

Regular harvest of buck pronghorn antelope should result in a slight decrease in the buck-to-doe ratio similar to the proposed project. However, the reduced take of bucks under this alternative would not adjust the ratio as rapidly as the proposed action. The decrease in the number of tags issued for this alternative would likely result in an increase in the number of tags issued in subsequent years. A significant increase in pronghorn antelope numbers under this alternative would not necessarily be expected. The quantity/quality of pronghorn antelope forage would not improve under this alternative; however, implementing the lower harvest level would not cause significant adverse impacts to the environment.

Implementing this alternative would limit opportunity for junior hunts which typically involve either-sex tags. This alternative does not meet objectives of the pronghorn antelope management program to reduce property damage, maintain healthy, viable herds, and provide optimal hunting opportunity. Although there would be no significant effect on non-consumptive recreational opportunities, it would unnecessarily reduce hunting opportunities compared to the proposed action. The Department recommends the proposed project over this alternative.

Alternative 4. Increased Archery

The increased archery alternative would allocate a similar number of tags as the proposed project, with an increase in archery-only tags. Additional PLM license tags might also be authorized. The additional archery-only tags would significantly increase the archery-only tag allocation, although this alternative would not significantly increase the harvest of pronghorn antelope, because archery-only hunter success rate is approximately 30 percent. The increased harvest of buck pronghorn antelope would not be expected to adversely affect the population, particularly if the archery-only tags were distributed in zones with buck-to-doe ratios above the Department's population goals described in the Northeastern California Pronghorn Antelope Management Plan.

This alternative would slightly increase hunter opportunity for archery-only hunters, with a concomitant reduction in opportunity for general season hunters. Under this alternative, fewer general season tags would be allocated to account for the higher archery harvest. In 1992, the Commission selected this alternative, increased the archery-only tag allocation by 10, and decreased the general season allocation by four. The percentage of archery-only applicants did not increase compared to applications for other pronghorn hunts in 1992. In 1993, the Department received the lowest percentage of archery-only license tag applications since initiation of the archery-only season. This alternative would provide an unfair advantage for archers by further increasing the probability of an archery-only applicant being drawn for an archery-only tag, and consequently decreasing the probability of a general season applicant being drawn for a general season tag.

Under the increased archery alternative, a few additional hunters will be in the field, but other recreational opportunities, such as photography, viewing, and nature study, would not be affected. The archery-only season is one of the first hunts to occur. Archery-only hunters are distributed throughout zones 1-6. Due to the limited number of hunters in the field at one time and the amount of public land which is open to the public for diverse recreational uses, the increased archery alternative would not cause a significant adverse effect on the environment.

The Department recommends the proposed project as a tool for the management of pronghorn antelope and to provide an equitable and diverse use of the resources. The Department does not recommend this alternative, because it would provide an unfair advantage for archery-only season applicants over general season applicants.

Alternative 5. No Hunting

The no hunting alternative would prohibit pronghorn antelope hunting and return pronghorn antelope management activities to levels similar to those practiced prior to 1942 (see Chapter 2). The Commission and the Department have broad authority for a wide range of pronghorn antelope management activities, including public hunting. This alternative would eliminate public hunting as an element of the Department's pronghorn antelope management program. Translocation efforts would continue as surplus pronghorn become available and suitable sites are identified. Overtime, suitable sites for releasing animals eventually would become increasingly scarce. The lack of suitable release sites would limit the activity of translocating pronghorn antelope to only a few new areas.

Pronghorn antelope are translocated only to suitable historic habitat. Such areas are rare in California today. Therefore, the rate of translocation projects is expected to remain slow. The fact that approximately 1,100 pronghorn antelope have been captured and relocated since 1947 to only 10 sites is an indicator of the difficulty in finding additional suitable sites. It is important to recognize that translocation efforts would not increase under the no-project alternative.

Under the no hunting alternative, the Department would continue to survey pronghorn antelope populations annually and update management plans as appropriate. In accordance with current statutes, pronghorn antelope would not be taken by depredation permits; consequently, the effectiveness of management actions to eliminate conflicts (i.e., property damage) and to maintain herd sizes at the identified objective levels would be limited. Ability to provide biologically sound public use of

pronghorn antelope in the form of hunting would be eliminated. Overall efforts to gather data on pronghorn antelope would be less intensive in the future, because most are now done in conjunction with the hunting program.

From 1987 until 1993, the northeastern California pronghorn antelope population often exceeded the management plan's objective of 5,600-7,000 animals. Although the population currently appears to be below this objective, there is potential that this objective again will be exceeded during the next several years. The Department needs to address real and potential conflicts resulting from excessive pronghorn antelope population numbers, such as property damage and habitat degradation. Pronghorn antelope intensively use alfalfa fields in mid summer. The no hunting alternative would likely increase crop damage (Cole 1956) and fail to adequately resolve existing conflicts and management problems. Legislative actions might be initiated to provide for depredation permits.

Under existing regulations hunting is used as a mechanism to reduce private property depredation conflicts attributed to pronghorn antelope. Thus, some private landowners are assured that a cost effective means exists to reduce localized damage and dampen sharp population increases. The existence of a cost effective means of reducing conflicts may improve the tolerance of private landowners for pronghorn antelope and enhance the prospect for reintroduction to suitable portions of their historic range that currently are unoccupied. Without a means of resolving existing or potential conflicts, it is unlikely that large areas of privately owned land within suitable historic range will become available to pronghorn antelope in the future.

The no hunting alternative may affect the PLM Program, which enhances wildlife habitat to benefit numerous wildlife species while permitting the limited hunting of selected species to achieve specific management goals. Implementing this alternative could potentially terminate PLM agreements for habitat enhancement projects. Cancellation of these projects on private lands could affect several wildlife species, including threatened and endangered species (e.g., bald eagle, Swainson's hawk, and greater sandhill crane). Several projects have been implemented that will benefit these species. This alternative may dissuade private landowners from becoming involved in such programs to enhance private property for the benefit of wildlife if the State is not able to provide efficient and economical means to manage wildlife species.

Non hunting public uses of pronghorn antelope, including viewing, photography, and natural history study, would not be expected to change appreciably as a result of implementing the no-hunting alternative. There are no restrictions on these activities at present. Ecological and behavioral studies may still be proposed and would not be greatly affected. Under this alternative, population size would be expected to fluctuate more as a result of weather and periodic die-offs associated with overuse of the range. Analysis indicates there would not be a significant impact on the environment if the no project alternative is selected (Chapter 4). However, in the future the use of more intensive management alternatives would be considered to achieve the Department's management objectives in the project area.

The no hunting alternative forgoes a number of cost-effective (see "Impacts on Economics" in Chapter 4) and biologically sound (Loft 1989) management activities. This alternative also fails to meet the objective of providing public hunting opportunities as an element of pronghorn antelope management. Because of the above considerations, the Department recommends the proposed action over this alternative.

CHAPTER 6. CONSULTATION

An integral part of the Department's wildlife management program is consultation with other agencies and qualified professionals in the wildlife management field. To this end, Department staff involved with pronghorn antelope management are continually interacting with other agencies and professional biologists involved with pronghorn antelope management in other states. An interstate (California, Nevada, and Oregon) antelope meeting is conducted annually to discuss management activities of each state. A biennial pronghorn antelope workshop is attended to exchange information and ideas on management of pronghorn antelope with biologists from other western states and provinces.

In addition to maintaining close informal contact with personnel from other agencies involved in pronghorn antelope management, Department personnel also maintain formal contact with personnel representing wildlife management agencies, universities, and the private sector (both inside and outside of California) by attending professional wildlife management workshops, conferences, and seminars.

CEQA encourages public input. One of the primary purposes of the environmental document review process is to obtain public comment, as well as to inform the public and decision makers. It is the intent of the Department to encourage public participation in this environmental review process.

Prior to preparing this environmental document, the Department developed an NOP. In early December, the NOP was provided to the State Clearinghouse for distribution, as well as to land management agencies in California that have an interest, or play a key role, in pronghorn antelope management (including the USFWS, BLM, NPS, and USFS). This NOP was also provided to individuals and/or organizations which expressed an interest in pronghorn antelope management in the past. The NOP requested that any comments regarding the scope of the environmental document be submitted to the Department within 30 days of receipt of the NOP.

CHAPTER 7. RESPONSE TO COMMENTS REGARDING THE PROPOSED PROJECT

In accordance with CEQA, Public input and agency consultation were encouraged during the environmental review process. An NOP was provided to the State Clearinghouse, land management agencies having a key role in pronghorn antelope management, and all individuals and organizations which expressed an interest in pronghorn antelope management. The draft environmental document examined a variety of alternatives. The proposed project was recommended by the Department because it provided the public with the widest range of recreational opportunities related to wild pig populations, either state wide or locally. Every effort was made to avoid a biased analyses of issues. In general, the Department attempted to make the draft environmental document understandable to the public and to objectively summarize a large amount technical information. The Department reviewed and summarized a great deal for scientific literature, which is cited in the document.

No comments regarding the draft environmental document were received.

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Appendix 1 -
State and Federal Laws and Regulations Relating to Pronghorn Antelope

SECTION 1. Section 206 of the Fish and Game Code is amended to read:

-206. (a) In addition to, or in conjunction with, other regular or special meetings the commission shall, at least every three years, hold meetings in the first 10 days of August, October, November, and December for the purpose of considering and adopting revisions to regulations relating to fish, amphibians, and reptiles. The commission shall alternate the locations of the August and December meetings between Los Angeles or Long Beach and Sacramento, and the October and November meetings between San Diego and Redding or Red Bluff.

(b) At the August meeting, the commission shall receive recommendations for regulations from its own members and staff, the department, other public agencies, and the public.

(c) At the October and November meetings, the commission shall devote time for open public discussion of proposed regulations presented at the August meeting. The department shall participate in this discussion by reviewing and presenting its findings regarding each regulation proposed by the public and by responding to objections raised pertaining to its proposed regulations. After considering the public discussion, the commission shall announce, prior to adjournment of the November meeting, the regulations it intends to add, amend, or repeal relating to fish, amphibia, and reptiles.

(d) At the December meeting, the commission may choose to hear additional public discussion regarding the regulations it intends to adopt. At, or within 20 days after, the meeting, the commission shall add, amend, or repeal regulations relating to any recommendation received at the August meeting regarding fish, amphibia, and reptiles it deems necessary to preserve, properly utilize, and maintain each species or subspecies.

(e) Within 45 days after adoption, the department shall publish and distribute regulations adopted pursuant to this section.

SEC. 2. Section 207 of the Fish and Game Code is amended to read:

207. (a) In addition to, or in conjunction with, other regular or special meetings, the commission shall hold meetings in the first 10 days of the months of February, March, and April at least once every three years for the purpose of considering and adopting revisions to regulations relating to mammals. The commission shall alternate the location of the February meeting between Sacramento and Los Angeles or Long Beach. The commission shall alternate the location of the March meeting between San Diego and Redding or Red Bluff. The commission shall alternate the location of the April meeting between Sacramento and Los Angeles or Long Beach.

(b) At the February meeting, the commission shall receive recommendations for regulations from its own members and staff, the department, other public agencies, and the public.

(c) At the March meeting, the commission shall devote time for open public discussion of proposed regulations presented at the February meeting. The department shall participate in this discussion by reviewing and presenting its findings regarding each regulation proposed by the public and by responding to objections raised pertaining to its proposed regulations. After considering the public discussion, the commission shall announce, prior to adjournment of the March meeting, the regulations it intends to add, amend, or repeal relating to mammals.

(d) At, or within 20 days after, the April meeting, the commission may choose to hear additional public discussion regarding the regulations it intends to adopt. At, or within 20 days after, the meeting, the commission shall add, amend, or repeal regulations relating to any recommendations received at the February meeting regarding mammals that it deems necessary to preserve, properly utilize, and maintain each species or subspecies.

(e) Within 45 days after adoption, the department shall publish and distribute regulations adopted pursuant to this section.

SEC. 3. Section 208 of the Fish and Game Code is amended to read:

208. (a) In addition to, or in conjunction with, other regular or special meetings, the commission shall hold meetings in June and August at least once every three years for the purpose of considering and adopting revisions to regulations relating to resident game birds.

(b) At the June meeting, the commission shall receive recommendations for regulations from its own members and staff, the department, other public agencies, and the public.

(c) At, or within 20 days after, the August meeting, the commission shall devote time for open public discussion of proposed regulations presented at the June meeting. The department shall participate in this discussion by reviewing and presenting its findings regarding each regulation proposed by the public and by responding to objections raised pertaining to its proposed regulations. After considering the public discussion, the commission, at, or within 20 days after, the August meeting, shall add, amend, or repeal regulations relating to any recommendation received at the June meeting regarding resident game birds that it deems necessary to preserve, properly utilize, and maintain each species or subspecies.

(d) Within 45 days after adoption, the department shall publish and distribute regulations adopted pursuant to this section.

316. Pacilic Halibut Regulations

The commission may prohibit the taking or possessing of Pacific halibut (Hippoglossus) in the same manner as the taking or possessing or Pacific halibut is prohibited by federal law or by rules or regulations adopted by the International Pacilic Halibut Commission, notwithstanding any other provision of this code.

316.5. Federal Laws For Taking, etc., Salmon; Applicability [Added Stats 1996]

The commission may prohibit the talcing or possessing ol salmon in the same manner as the taking or possessing of salmon is prohibited by federal law or by rules or i egulations adopted by the UnitedStates Secretary of Commerce, notwithstanding any other provision of this code.

(Added by Statues 1996 Chap. 870)

317. Game Taking Permits For Organizations Hunting For Servicemen or Veterans

Any organization conducting a special hunt Tor set vicemen or veterans residing in or assigned to a United States veterans or armed services medical Facility may apply to the commission Tor, and the commission may issue, under such terms and conditions as it may impose, a per mi t to take birds and mammals notwithstanding the provisions of Sections 2006 and 3002.

Article 2. Special Seasons

325. Surplus Game Hunling Season; Establishment ol

Whenever after due investigation the commission finds that game mammals, other than deer, and fur-bearing mammals and resident game birds have increased in numbers in any areas, districts, or portions thereof other than a refuge or preserve established by statute, to such an extent that a surplus exists, or to such an extent that the mammals or birds are damaging public or private property, or are overgrazing their range, the commission may provide by regulation, for a special huntingseason for the mammals and birds, additional to, or concurrent with any other open season specified by law; or provide for increased bag limits; or remove sex restrictions specified by law.

326. Public Hearing

Prior to the making of such a regulation the commission at an open meeting shall publicly announce the contents of the proposed regulation and fix a time and place at which a hearing on the proposed order shall be held. The time shall be not less than 21 days from flic day of the meeting and the placeshall be the county seat or each or the counties affected.

327. Hearing Nolice

Notice of the hearingsball be published at least once, and at least 10 days prior to the healing, in a newspaper of general circulation in each or the counties in which the hearing is to be held, or if nosuch newspaper is published in that county or counties then in such a newspaper in an adjoining county. The hearing shall be conducted by either (a) the commission, (b) a member or the commission designated by it, or (c) the director if requested so to do by the commission.

At least 10 days prior to the holding of any such hearing the commission shall notify each member of the board of supervisors, at his home address, or each county affected or the details of its proposed order affecting such county and the time and date of the hearing.

328. Mandatory Presence ol Dept. Employees At Hearing; Modification ol Proposals

Such employees of the department as may be necessary or are requested by any interested group of persons, shall be present at the hearing. A lter the hearing the commission may abandon the proposal or make a final regulation, with any modifications it deems appropriate, or without modification.

329. Contents ol Regulations

The regulation may Ex a license fee for special hunting and designate the number of special licenses to be issued, tbeareain which such hunting will be permitted, the number and sex or animals or buds that may be killed by each holder of a special license, and the conditions and regulations to govern such hunting.

330. Cooperative Hunting Areas

Cooperative bunting areas, as described in Sections 1570 to 1372, may be established in connection with any area opened to hunting under the foregoing provisions of this article.

Article 2.1. Antelope and Elk

331. Antelope; Limits and License Fees

(a) The commission may determine and fix the area or areas, the seasons and hours, the bag and possession limit, and the sex and total number or antelope (Antilocapra americana) that may be taken under regulations which tbe commission may adopt from time to time. Only a resident of the State of California possessing a valid bunting license, who bas not received an antelope license tag under these provisions during a period or time specified by tbe commission, may obtain a license tag for tbe taking or aotelope.

(b) A license lag may be issned upon payment of a fee of fifty-five dollars ($55), as adjusted under Section 7 13.Tbe Tee shall be deposited in the Fish and Game Preservation Fund and shall be expended, in addition to money budgeted for salaries or persons in the department, for the expense or implementing this section.

(c) The commission shall direct the department to annually authorize not less than one antelope tag or more than 1 percent or the total number or tags available for the purpose of raising funds for programs and projects tn benefit antelope. These tags may be sold at auction to residents or nonresidents of tbe Stale of California or by another method and are not subject to the Tee limitation prescribed in subdivision (b).

(Amended by Statutes 1996 Chap. 870) *(A second icrsion of Section 331, to become effective 1-1-1997, was repealed by Statutes 1996. Chap. 870.)*

332. Elk; Limits and License Fees

(a) Tbe commission may determine and fix the area or areas, the seasons and hours, tbe bag and possession limit, and the number or elk that may be taken under rules and regulations which tbe commission may adopt from time to time. The commission may authorize the taking or tule elk if the average of tbe department'sstatewide tule elk papulation estimates exceeds 2,000 animals, or tbe Legislature determines, pursuant to the reports required by Section 3951, that suitable areas cannot be found in California to accommodate that populatioo in a healthy condition.

(b) Only a resident of tbeState of California possessiog a valid hunting license may obtain a license lag for the taking nf elk.

(c) The department may issue an elk license tag upon payment of a fee or one hundred sixty-five dollars |S 165), as adjusted under Section 713. The Tees shall be deposited in the Fish and Game Preservation Fund and shall be expended, in addition to money budgeted for salaries of the department, for the expense or implementing this section and Section 3951.

(d) The commission shall annually direct the department to authorize not more than three elk hunting license tags for the purpose or raising funds for programs and projects to benefit elk. These license lags may be sold at auction to residents or nonresidents or the State of California or by other method and are nnt subject to tbe fee limitation prescribed in subdivision (c).

(Amendedby Statutes 1992 Chap. 13701

Article 3. Migratory Birds

355. Regulations - Annual Promulgation

The commission may, annually, adopt regulations pertaining to migratory birds to conform with or to fiirther restrict tbe rules and regulations prescribed pursuant to the Migratory Bird Treaty Act.

Regulations adopted under this sectioo are not subject to Sections 11343.4, 11346.1, 11346.4, and 1 1346.8 of the Government Code.

Every regulation of the commission adopted pursuant to this article shall be filed with the Secretary of State, and shall become effective upon filing unless otherwise specified in the regulations.

(A mended by Statutes 1996 Chap. 870)

Any study relating to funding of programs administered or conducted by the department shall include express findings of whether the program is related to the protection or propagation of fish and game and shall describe the relationship.

(Amended by Statues 1990 Chap. 1706)

713. License Fees - How and When To Determine

(a) The changes in the Implicit Price Deflator for Stale and Local Government Purchases of Goods and Services, as published by the United States Department of Commerce, shall be used as the inclei to determine an annual rate of increase or decrease in the fees for licenses, stamps, permits, and tags issued by the department, except commercial fishing fees.

(b) The department shall determine the change in the Implicit Price Deflator for State and Local Government Purchases of Goods and Services, as published by the United S tates Department of Commerce, for the quarter ending March 31 of the current year compared to the quarter ending March 31 of the previous year. The relative amount of the change shall be multiplied by the current fee for each license, stamp, permit, or tag issued by the department. The product shall be rounded to the nearest twenty-five cents (SO. 25), and the resulting amount shall be added to the fee for the current year. The resulting amount shall be the fee for the license year beginning on or after January 1 or the next succeeding calendar year for the license, stamp, permit, or tag which is adjusted under this section.

(c) Notwithstanding any other provision of law, the department may recalculate the current fees charged for each license, stamp, permit, or tag issued by the department, eicept commercial fishing fees, lo determine thai all appropriate indexing has been included in the current fees. This section shall apply to all licenses, stamps, permits, or lags, eicept commercial fishing fees, that have not been increased each year since the base year of the 1985 -86 fiscal year.

(d) The calculations provided for in this section shall be reported to the Legislature with the Governor's Budget Bill.

(e) The Legislature finds that all revenues generated by fees for licenses, stamps, permits, and tags, computed under this section and used for the purposes for which they were imposed, are not subject to Article XTflB of the California Constitution.

(t) The department shall, at least every five years, analyze all fees for permits, licenses, stamps, and tags issued by it to ensure the appropriate fee amount is charged. Where appropriate, the department shall recommend to the Legislature or the commission that fees established by the commission or the Legislature be adjusted to ensure that those fees are appropriate.

(Amended by Slaiulcs 1991 Chap. 732)

714. Lifetime Sportsman's Licenses; Fees, Age Requirements, Etc.

(a) fn addition lo Section 3031, 3031.2, 7149, or 7149.2 and notwithstanding Section 3037, the department shall issue lifetime sportsman's licenses pursuant to this section. A lifetime sportsman's license authorizes the talcing of birds, mammals, fish, reptiles, or amphibia anywhere in this state in accordance with law for purposes other than profit for the life of the person to whom issued unless revoked for a violation of this code or regulations adapted pursuant to this code. A lifetime sportsman's license is not transferable. A lifetime sportsman's license does not include any special tags, stamps, or other entitlements.

(b) A lifetime sportsman's license may be issued to residents of this state, as follows:

(1) To a person 62 years of age or over upon payment of a fee of six hundred dollars ($600) in 1998.

(2) To a person 40 years of age or over and less than 62 years of age upon payment of a fee of eight hundred ninety dollars ($890) in 1998.

(3) To a person 10 years of age or over and less than 40 years of age upon payment of a fee of nine hundred ninety dollars ($990) in 1998.

(4) To a person less than 10 years of age upon payment of afeeof sir bundled dollars ($600) in 1998.

(5) The department shall establish the fee for each license authorized under this section in 1999 and subsequent years. The license fee shall not be less than the fee authorized in 1998, and the fee shall not exceed the cost of a license if the license fee was adjusted pursuant to Section 713 with the base year of 1998.

(c) Nothing in this section requires a person under the age nf 16 to obtain a license to take fish, reptiles, or amphibia for purposes other than profit or to obtain a license to take birds or mammals eicept as required by law.

(d) Nothing in this section exempts as applicant for a license from meeting other qualifications or requirements otherwise established by law for the privilege of sport hunting or sport fishing.

(e) Upon payment of a fee of three hundred ten dollars ($310), a person holding a lifetime hunting license or lifetime sportsman's license shall be issued annually one deer tag pursuant to subdivision (a) of Section 4332 and five wild pig tags issued pursuant to Section 4654.

(0 Upon payment of afeeof twu liuudred dollars (S200), a person holding a lifetime hunting license or lifetime sportsman's license shall be entitled annually to the privileges afforded to a person holding a state duck stamp or validation issued pursuant to Section 3700 or 3700.1 and an upland game bird stamp or validation issued pursuant to Section 3682 or 3682.1.

(Amended by Slaluia 2001 Chop. 112)

715. National Wildlife Violator Compact - Feasibility Report

The department shall report on or before January 30, 1996, to the Senate Committee on Natural Re- - sources and Wildlife and the Assembly Committee on Water, Parks and Wildlife on the feasibility of the department entering into the National Wildlife Violator Compact. The report shall include an analysis of the steps needed for implementation and the fiscal Impact of participation in the National Wildlife Violator Compact. The depar lineut shall not enter into the National Wildlife Violator Compact without further authorization by statute.

(A ddtd bf Si aii, ies 1995 Chap. 82 7)

CHAPTER 1.5. WILDLIFE VIOLATOR COMPACT

(Added by Siaimes 2001 Chap.398)

Article 1. General Provisions

716. Wildlife Violator Compact

The Wildlife Violator Compact is hereby enacted into law and entered into with all other participating states.

(Added by Siatttia 2001 Chap. 398)

716.1. Statement ol Policy

It is the policy of this state in enteric g into the compact to da all of the following:

(a) Promote compliance with the statutes, ordinances, and administrative rules and regulations relating to the management of wildlile resources in this stale.

(b) Recognize the suspension of wildlife license privileges of any person whose license privileges have been suspended by a participating slate and treat that suspension as if it had occurred in the licensee's home state if the violation that resulted in the suspension could have been the basis Tor suspension in the home state.

(c) Allow a violator, except as provided in subdivision (b) of Section 716.4, to accept a wildlife citation and, without delay or detention, proceed on his or her way whether or not the violator is a resident of the state in which the citation was issued, if the violator's home state is a party to this compact.

(d) Report to the appropriate participating states, as provided in the compact manual, any conviction recorded against any person whose home state was not the issuing state.

(e) Allow the home state to recognize and treat convictions recorded against its residents, if those convictions occurred in a participating state, as though they had occurred in the home state.

(0 Extend cooperation to its fullest eitent among the participating states for enforcing compliance with the terms of a wildlife citation issued in one participating state to a resident of another participating state,

(g) Maximize effective use nf law enforcement personnel and information,

(b) Assist court systems in the efficient disposition of wildlife violations.

(Added by Srnlula 2001 Chap. 398)

(e) Costs inclined by tbe department in establishing the bank site, and the direct cost of necessary ongoing monitoring and oversight.

(0 Any other information relevant to a determination of thecosl of preserving tbe wetlands in perpetuity.

(Added by Statutes 1993 Chap. 1154,

1792.5. Reimbursement For Expenses

The department shall be reimbursed for those expenses of tbe department identified in Section 1792 according to a schedule contained in an agreement with tbe person establishing a wetland mitigation bank. Tbe agreement shall be approved by all parties prior to the commencement or planning activities.

(Added by Statutes 1993 Chap. 1154)

Article 5. Discharge Into Wetlands. 1793-1796

1793. Compensation by Permittee

A permittee shall provide compensation pursuant to Section 404 or the federal Clean Water Act (3] U.S.C. Sec. 1344 etseq.). The department shall classify the wetlands that the permittee will remove according to wetland type, consistent with Article 4 (commencing with Section 1790).

(Added by Statutes 1993 Chap. 1254)

1794. Compensation Conditions

Compensation pursuant to Section 1793 is subject to the conditioo that tbe operator establish tbe trust or bond required by subparagraph (B) of paragraph (3) of subdivision (h) of Section 1786 and, in addition, is subject lo the following conditions:

(a) The full payment shall be used to purchase credits in the mitigation bank site.

(b) The payment shall provide for purchase or bank site wetland acreage required by Section 1793 thai has tbesame hydrologic, vegetative, and other characteristics as tbe system for which it wdl serve as mitigation.

(c) A permittee shall not participate io a wetlands mitigation bank if a net loss of wetland babitat values or acreage occurs.

(Wed by SalMM / *993 Chap. 1154)*

1795. Obligations ol Permittee

After payment to tbe operator pursuant to this article, tbe permittee has no further obligations with respect to the operation of the bank site to which payment was made, unless the permittee has an equity involvement in tbe bank.

(Addedby Slawles 1993 Chap. 1154)

1796. Bank Sites; Qualification Time Limit, Reports

No bank site shall be qualified under Section 1785 on or after Jaouary 1,2010.

(Amendedby Slawles 1001 Chap. 745)

CHAPTER 8. CONSERVATION OF WILDLIFE RESOURCES

Article 1. Definitions

1800. Wildlife

As used io this chapter "wi]dlife"means birds, mammals, and reptiles not raised in captivity.

Article 2. Policy

1801. Policies and Objectives

It is hereby declared to be the policy of theslate to eccourage the preservation, conservation, and maintenance of wildlife resources under the jurisdiction and influence of the state. This policy shall include the following objectives'.

(a) To maintain sufficient populations of all species or wildlife and the habitat necessary lo achieve the objectives stated in subdivisions (b), (c), and (d).

fli) To provide for the beneficial use and enjoyment of wildlife by all citizens of the state.

(c) To perpetuate all species of wildlife for their intrinsic and ecological values, as well as Tor their direct benefits to all persons.

(d) To provide for aesthetic, educational, and nonappropriative uses of the various wildlife species.

(e) To maintain diversified recreational uses of wildlife, including the sport of hunting, as proper uses ***of*** certain designated species or wildlife, subject to regulations consistent with the maintenance of healthy, liable wildlife resouices, the public safety, and a quality outdoor experience.

(l) To provide for economic contributions to tbecitizensof tbe state, through tbe recognition that wildlife is a renewable resource of the land by which economic return can accrue to the citizens of tbe state, individually and collectively, through regulated management. Such management shall be consistent with the maintenance of healthy and thriving wildlife resources and tbe public ownership status **of** the wildlife resources.

(g) To alleviate economic bsses or public health or safety problem] caused by wUdbTe to the people **or** die state either individually or collectively. Such resolution shall be in a manner designed to bring tbe problem within tolerable limits consistent with economic and public health considerations and the objectives slated in subdivisions (a), (b) and (c).

(b) It is not intended tbat this policy shall provide any power to regulate natural resources or commercial or other activities connected therewith, except as specifically provided by the Legislature.

(A mended by Statutes 1992 Chap. 279)

1802. Jurisdiction ol Department

Tbe department has jui isdictioD over tbe conservation, protection, and management ol fish, wildlife, native plants, and habitat necessary for biologically sustainable populations of tbose species. The department, as trustee for fish and wildlife resources, shall consult with lead and responsible agencies aod shall provide, as available, tbe requisite biological expertise to review and comment upon environmental documents and impacts arising from project activities, as those terms are used in tbe California Environmental Protection Act (Division 13 (commencing with Section 21000) or the Pubbc Resources Code).

(Added by Statutes !990Chap. 1706)

CHAPTER 9. WETLANDS MITIGATION BANKING

Article 1. General Provisions

1850. Database of Wetlands Mitigation Banks Required

On or berore Jaouary 1,2002, the department shall establish an updated data base or all existing and operating wetlands mitigation banks that sell credits to tbe public in California. To the extent feasible, the department shall use all existing information in compiling this data base and shall utilize tbe CERES Environmental Data Catalog to make this information available to the public. The department shall update this data base on an annual basis andshall include all relevant information required by Section 1851.

(Added by Statutes 2000 Chap. 950)

1851. Biennial Review

On or before January 1,2002, and biennially thereafter, tbe depaitment shall review the data base and the data catalog described in Section 1850, and shall provide a report to the Legislature with a description and tbestatus of each existing wetlands mitigation bank site in operation as of January 1,2001, and each mitigation bank site approved thereafter. Tbe report sball include, but not be limited to, all of the following information:

(a) The name, address, and telephone number of theperson or agency who created the wetlands mitigation bank site.

(b) The name, address, and telephone number of the wetlands mitigation bank operator and tbe address or other appropriate physical description of the location of the wetlands mitigation bank site.

(c) The date the wetlands mitigation bank site was created.

(d) A description of tbe wetlands mitigation bank site's service area.

3246. License Revocation

Any license issued under this article may be revoked by the commission at one of the commission's regularly scheduled meetings, or by a court of competent jurisdiction, upon the licensee's conviction of a violation of this code, and no new license may be issued lo the licensee during the same license year.

(Amended by Statutes 1986 Chap. 1244)

Article 3. Licensed Domesticated Game Bird Hunting Clubs

(Amended by Statutes 1994 Chap. 849)

3270. Pheasant Club License Conditions

(a) In order to provide additiooal bunting by stocking domestically propagated game birds, and to permit the taking of game birds under conditions that will not conflict with the public interest, any person who owns or controls the hunting rights on a tract of land may apply to the department for a game bird club bcense authorizing the taking of game birds upon that land in accordance with the regulations of the commission for the administration, including the implementation and enforcement, of this section.

(b) This section shall become operative on July 1, 1995.

(Added by Statutes 1994 Chap. 849)

Article 4. Licensed Domesticated Migratory Game Bird Shooting Areas

3300. Raise and Release Domesticated Migratory Game Birds; License Required

It is unlawful for any person to engage in the raising and releasing, or the releasing, of domesticated migratory game birds for shooting by persons wbo pay for that privilege, unless the person has a revocable nontransferable license issued by the department. The licenses may be issued annually by the department and shall be valid from July 1 through the following June 30, upon payment of abase fee of eighty dollars (S80), as adjusted under Section 713.

Any bird of a species included in the definition of migratory game birds, as defined in Section 3500, which has been held live in captivity is a "domesticated migratory game bird'Tor purposes of this section, eicept such a bird that has been released fromcaptivity and any control befpreattainingsisweeksof age.

(Amended by Statutes 1986 Chap. 1368)

3301. Posting ol Boundaries o(Licensed Area

Tbeapplication for a license shall show thesize and location of the area to be licensed. If an application is approved and a license is issued, the licensee shall post the boundaries of the licensed area with signs, at intervals of not more than 500 feet, which shall indicate that the area is licensed for the shooting of domesticated migratory game birds. Such signs shall be of a size not less than 12 by 18 inches.

3302. Additional License Regulations; Revocation

The commission may prescribe additional regulations deemed necessary for the releasing and shooting of domesticated migratory game birds and shall set the season and areas where such birds may be taken. If the licensee violates any of the provisions of this article or any regulations made pursuant thereto, the commission may cancel or revoke the license provided ootice has been given to the licensee and he has been given an opportunity to be heard by the commission

3303. Proper and Adequate Care al Game Birds Required

Wbere domesticated migratory game birds are reared or held for release by the licensee, the licensee shall provide proper and adequate care for the birds and shall raise and hold them only under sanitary conditions. Conditions for proper care and raising shall be prescribed by the commission. The licensee shall provide for the inspection of birds and facilities upon the request of the department.

3304. Minimum Number of Birds Required Per License Period - 500

The licensee shall raise or use a minimum of 500 birds during the annual license period.

3305. Condition and Age Requirement of Game Birds at Time ol Release

All domesticated migratory game birds at time of release for shooting shall be at least 14 weeks of age, capable of strong and sustained flight, fully feathered, and otherwise in condition to survive in the wild. Birds that are altered in any manner which would, in the opinion of the department, render them incapable of normal sustained flight, or which are diseased, or show evidence of malnutrition or injury, shall not be released.

3306. Shooting Requirements

Shooting shall be confined to blinds, except for shooting necessary to recover a downed and injured bird, and not more than three shooters shall occupy or use each blind. Such blinds shail be constructed to prevent the shooting of domestic migratory game birds over water and to insure maiimum safety lo nccupants of adjoining blinds.

The blinds shall be so situated that the occupants of the blinds cannot see the release site.

The licensee shall not permit any shooting within 500 feet of a point where the birds are released, nor shall any birds be taken within such distance from the point of release.

3307. Killed or Injured Bird Retrieval; Retrieval Dog Availability

AU birds killed or injured by shooters shall be retrieved without delay, and aU injured birds shall be humanely dispatched. The licensee shall not permit injured birds to remain on a pond or feeding area, nor shall he knowingly permit such birds to be used in any subsequent release.

In order to prevent the loss of any dead or injured birds, the licensee shaU provide the use of a retrieving dog, without cost, to all shooters, eicept that shooters may provide their own retrieving dogs. The Utensee shall not permit the shooting of any birds unless a retrieving dog is immediately available for use by all shooters.

3308. Inspection Fee - Maximum

Licensees shall pay the department an inspection fee not to exceed five cents (S0.05) for each domesticated migratory game bird raised or used on a licensed area to insure proper adherence to these regulations.

3309. Seal Attachment to Dead Birds

No dead, domesticated migratory game bird shaU be removed from the premises of a licensed area until there is securely attached to the carcass a seal, and such seal shall remain attached to the carcass until it is finally prepared for coosumplion. Each such seal shall be supplied by the department at a fee set by the commission not to exceed five cents (JO 05).

3310. Valid Hunting License Required

It shall be unlawful for any persoo to shoot domesticated migratory game birds on a licensed area without having a valid hunting license as provided by Section 3031.

3311. Licensee - Must Comply with Federal Laws and Regulations

The licensee shall comply with all applicable federal laws or regulations relating to the releasing and shooting of domesticated migratory game birds.

Article 5. Enhancement and Management al Fish and Wildlife and Their Habital on Private Lands

(Amended by Statutes 1992 Chap. 313)

3400. Stale Policy - Improvement ol Wildlife Habitat on Private Land

It is the policy of the state actively to ensure the improvement of wddlife habitat on private land in nrder to encourage the propagation, utilization, and conservation of fish and wildlife resources on those lands now and for the future in cooperation with private landowners. The commissinn and the department may develop a private wildlife habitat enhancement and management program for the implementation of this article.

(Amended by Statutes 1992 Chap. 818)

3401. Licenses - Wildlife Enhancement and Management Areas; Rul Hunting

(a) The commission may authorize (he department to issue revocable, nontransferable licenses for the operation of wildlife habitat enhancement and management areas on any private lands it determines are suitable for habitat enhancement, management, utilization, propagation, and conservation of fish and wildlife resources of those lands. Any private lands affected by a habilal enhancement and management

plan licensed pursuant to this article shall not he available for use by the general public wi thout the consent of tbe landholders. No public access roadsball be closed to the public under this article as a result of licensing a wudlife habitat enhancement and management area or implementing tbe wddlife habitat enhancement and management plan.

(b) The commission shall authorize hunting during the rut only in a wildlife habitat enhancemect and management area when that hunting is consistent with the management plans prepared for tbat area or herd and cbes not result in an overaU negative efTect on tbe deer herd population in that area.

(Amended by SiaWIis 1991 Chap. 818)

3402. License Requirements

(a) A license for a wudlife habitat enhancement and management area may be issued to any landholder or combination of landholders upon approval by the commission of an application submitted by the landholder. As used in this article," landholder 'means any person who owns, leases, or has a possessory interest in land.

(h) Each bcense application shall be accompanied by a nonrefundable fee in an amount established by the commission which, in conjunction with tbe fees collected pursuant to Section 3407, is calculated to meet the departments actual costs in administering all aspects of the habitat enhancement and management program. The application shall be accompanied by a wildlife babitat enhancement and management plan and such other information about the proposed wildlife habitat enhancement and management area as may be required by tbe commission.

(c) An appUcation Tor a Ucense may be submitted by any number nf landholders if all parcels to be included in the wildlife habitat enhancement and management area are contiguous and, in combination, are of a size suitable for tbe management of tbe species included in the wildlife habitat enhancement and management plan. Tbe landholders shall designateone landholder who shall represent them in all dealings with the commission and the department. The designated landholder shall be responsible for the operation of tbe wildlife habitat enhancement and management area.

(d) A landholder who cbes not own the Tee to the land may apply for a license pursuant to this article only if the owner signs tbe application.

(Amended by Statutes 1991 Chap.818)

3403. Posting ol Area Boundaries Required

The commission shall require the landowners of a wildlife habitat enhancement and management area to post all or part of its boundaries with pubbc land. Tbe commission may require the owners of a wildlife habitat enhancement and management area to post all or part of its boundaries with private land.

(Amended by Statutes 1992 Chap. 818)

3404. Commission May Adopt Regulations

(a) Tbe commission may adopt regulations necessary for the administration of this article.

(b) Alter notice and a hearing, the commission may revoke the license for any violation of any provision or this code or any regulations adopted pursuant thereto or for any violation of tbe terms of the license.

(Amended by Statutes 1992 Chap. 818)

3406. License Term; Authorizations; Regulations; Restrictions

(a) Upon approval of tbe wildlife babitat enhancement and management plan, tbe department shall issue a license, which shaU be vabd for five calendar years, authorizing tbe talcing of those species of fish, game birds, and game mammals desipated in the Wildlife babitat enhancement and management plan, pursuant to tbe plan and regulations of the commission for the operation of the wildlife habitat enhancement and management area. Regulations adopted pursuant to this section may supersede any provision of this code designated by number in the regulation, but shall do so only to the eitent specifically provided in the regulation.

(b) During tbe first year of operation of a wildlife babitat enhancement and management area under a wddlife habitat enhancement and management plan and, thereafter, until tbe operator demonstrates babitat enhancement in tbe area acceptable to the department, no person shall take, and the plan shall not authorize the taking, of deer except during the general open season and consistent with the bag and

possession limits for tbe fish and game district or the zone in which tbe wildlife habitat enhancement and management area is located.

(c) Tbe activities conducted pursuant to each wildlife babitat enhancement and management plan shall be reviewed annually by the department and reviewed by the commission at a public hearing. Each licensee shall annually submit information to the department about past activities and the activities intended to be conducted in the succeeding year. Any change to the wildlife habitat enhancement and management plan or tbe regulations applicable to the wildlife habitat enhancement and management area shall be proposed to the commission by the department or the licensee at the license review hearing.

(A mended by Statutes 1992 Chap. 818)

3407. Mark with Tag or Seal Fish, Birds, or Mammals Taken

The commission may require that any fish, bird, or mammal taken in a wildlife habitat enhancement and management area licensed pursuant to this article be marked for identification with a dis tinctive tag or seal issued by the department prior to being removed from tbe area. A deer tag shall be countersigned by a person who is authorized to countersign deer tags pursuant to Section 372 of Title 14 of the California Code of Regulations. Any fish, bud, or mammal so identified may be possessed and transported at any time during the period for which the tag or seal is valid. The fees for Iap and seals shall be established by the commission in amounts which, in conjunction with fees collected pursuant to Section 3402, are calculated to meet the actual costs incurred by the department in administering all aspects of the babitat enhancement and management program.

(Amended by Statutes 1992 Chap. 818)

3408. Exemptions frnm Fees or License; Exceptions

Any landholder who has paid the fee required by this article, has a valid license issued pursuant to this article, and who is conducting activities pursuant to an approved wildlife habitat enhancement and management plan that could be licensed or permitted pursuant to another provision of this code shall be exempt torn any requirement to obtain that other license or permit or to pay any other fee. This section shall not, however, be construed to exempt anyone from any requirement pertaining to hunting and sport fishing licenses and stamps.

(A mended by Statutes 1992 Chap. 818)

3409. Annual Report by Department

The department shall report every three yean on the wildlife habitat enhancement and management program conducted pursuant to this article. The report shall include a listing of landholders participating in the wildlife habitat enhancement and management program, the wildlife babitat enhancement and management activities undertaken, tbe wildlife species managed, and harvest data. The report shall be submitted to tbe Speaker of tbe Assembly, tbe Chairperson of tbe Senate Committee on Rules, and tbe chairpersoos of the policy committees in each bouse that have jurisdiction over the subject of this article. The report shall also be made available tq the public upon request.

Amended by Statutes 1001 Chap. 745)

Article 6. Management of Fish and Wildlife on Military Lands 3450-3453

(Added by Statutes 1986 Chap. 591)

3450. Policy ol Slate

It is tbe policy of, the state to actively encourage the biologically sound management of fish and other wddlife resources on lands administered by the United States Department nf Defense. The department may develop a program to implement this article in cooperation with the military services.

(Added by Statutes 1986 Chap. 591)

3451. Coordination and Cooperation with U.S. Military

The department may coordinate and cooperate with all branches of the United Slates military service, Department of Defense, for tbe purpose of developing fish and wildlife management plans and programs on military installations. The plans and programs shall be designed to provide biologically optimum levels of Ssh and wildlife resource management and use compatible with the primary military use of those lands.

oc employees of lhe Depai tmeut of Food and Agricultui e or by federal or county officers or employees when acting in their official capacities pursuant lo the provisions of the Food and Agricultural Code pertaining to pests, or pursuant to Article 6 (commencing with Section 6021) of Chapter 9 of Part I of Division 4 of the Food and Agricultural Code.

Landowners and tenants taking birds in accordance with this section are exempt from Section 3007.

3801.6. Possess Carcass, etc. of Nangame Bird; Exceptions and Disposition

Except as otherwise provided in this code or regulations made pursuant thereto, it is unlawful to possess the catcass, skin, or parts of any nougame bird. The carcass, skin, or parts of any noogame bird possessed by any person in violation of any of the provisions of this code shall he seized by the department and delivered to a scientific or educational institution.

3S02. Predatory Birds; Control or Eradication

The department may enter into cooperative contracts with the United Stales Fish and Wildlife Service in lhe Department of the Interior in relation to lhe control or eradication of predatory birds, and for that purpose may expend any money made available to the department for expenditure for the control or eradication of predatory birds.

3803. Take Birds Which Prey Dpon Birds, Mammals, or Fish

The department may lake any bird which, in its opinion, is unduly preying upon any bird, mammal, or Dsh.

3B06. Licenses to Feed Migratory Game Birds lo Prevent Crop Depredation

In order to aid in relieving widespread waterfowl depredalioo of agricultural crops, the departmeot may issue licenses under regulations which the commission may prescribe to permit the feeding of migratory game birds. The commission may prescribe an annual fee for the license.

(Amettded by Statutes 1936 Chap. 1363)

CHAPTER 4. CALIFORNIA CONDOR

(Added by Statutes 1938 Chap. 83)

3850. Preservation Project Objectives

The department may cany out a California condor preservation project which has the following objectives:

(a) Habitat protection, consistent with the department's existing legal authority.
(b) Field research, including mortality studies.
(c) Captive breeding program.
(d) Condor release program.

(Added by Statutes 1938 Chap. 83)

3851. Plan Development

The department, jointly with the federal-state condor recovery team established pursuant to lhe federal Endangered Species Act shaU develop a plan to respond to the objectives in Section 3850. Based on the plan, the department shall develop specific activities, studies, and programs to be administered by the department in the areas of habitat protection and field research. The department may coo tract for all or some of these activities, studies, and programs.

(Added by Statutes 1988 Chap. 83)

3852. Breeding Programs al Zoos - Funds

The department shall provide funds to the Zoological Society of San Diego and In the Los Angeles Zoo for a condor breeding program on the grounds of each zoo.

(Added by Statutes 1988 Chap. S3)

3853. Release Program

In addition to the programs in Section 3852, a condor release program administered by lhe department and the United States Fish and Wildlife Service may be contracted to the Zoological Society of San Diegn and the Los Angeles Zoo.

(Added by Statutes 1988 Chap. 83)

3854. Administrative Casts

Not more than 10 percent of lhe funds provided lo lhe zoos under Oris chapter may be used for administrative costs of the program.

(Addedby Statutes 1938 Chap. 88)

3855. Program Reports la the Department

Both the breeding program and the release program, if authorized by the department, shaU meet criteria established by the department and shall be monitored by the department. The zoos shall submit biannual reports to the department which describe progress made in lhe breeding program and the release program.

IA dded by Statutes 1988 Chap. 38)

3856. Status Reports lo the Legislature

The department shall include copies of the biannual reports from the zoos in lhe annual report to the Legislature on the status of listed species required in Section 2079.

(Added by Statutes 1938 Chap. 38)

3857. Augmentation ol Slate Funds

Tn the eitent possible, the departmeot shall seek private sector funding and any federal hinds which may be available to augment state funds for the purposes of this chapter.

(Addedby Statutes 1988 Chap. 88)

PART 3. MAMMALS

CHAPTER 1. GAME MAMMALS

3950. Definitions ol Game Mammals

(a) Game mammals are: deer (genus Odocoileus), elk (genus Cervus), prong-homed antelope (genus A n I docapr a), wild pigs, including fetal pigs and European wild boars (genus Sus), black and brown or cinnamon bears (genus Euaictos), mountain lions (genus Felis), jackrabbits and varying bares (genus Lepus), cottontails, brush rabbits, pigmy rabbits (genus Sylvilagus), and tree squirrels (genus Sciunis and Tamiasciurus).

(b) Nelson bighorn sheep (subspecies 0 vis canadensis nelsoni) are game mammals only for the purposes of sport hunting described in subdivision (b) of Section 4902.

(Amended by Statutes 1992 Chap. 1370)

3950.1. Mountain Lions Excepted

(a) Notwithstanding Section 3950 or any other provision of this code, the mountain lion (genus Felis) shall not be listed as, or considered to be, a game mammal by the department or the commission.

(b) Section 219 does not apply to Ibis section. Neither the commission nor the department shall adopt any regulation that conflicts with or supersedes this section.

(Added by Initiative Measure. Prop 117. section 3, approved 6-5-90)

3951. Tule Elk'; Taking, Relocation, etc.

The commission may authorize the talcing nf tule elk pursuant to Section 332. The department shall relocate rule elk in areas suitable to them in the State of California and shall cooperate to the maximum Client possible with federal and local agencies and private property owners in relocating tule elk in suitable areas under their jurisdiction or ownership. When economic or environmental damage occurs, emphasis shall be placed on managing each rule elk herd at a b iol ugically sound level through the use of relocation, spoi (hunting, or other appropriate means as determined by tbe department after consulting with local landowners.

The number of rule elk in the Owens Valley shall not be permitted tn increase beyond 490, or any greater number hereafter determined by the department to he tbe Owens Valley s holding capacity in accordance with game management principles. Wi thin 180 days of tbe eoactment of the bill which amended this section a 11 he 198 7 portion of the 1987-88 Regular Session nf the Legislature, tbe department shall complete management plans for high priority areas, including, but not limited to, Potter Valley and Mendocino County. The plans shall include, but not be limited to:

(a) Delinitinn nf tbe boundaries of the management area.

(b) Characteristics of the tule elk herds within the management area.

(c) Tbe habitat conditions and trends within tbe management area.

(d) Major (actors affecting tbe tule elk population within the management area, including, but not Limited to, conflicts with other land uses.

(e) Management activities necessary to achieve tbe goals of the plan.

(Amendedby Statutes 7001 Chap. 745)

3960. Allow Dogs to Pursue Big Game Mammals; Conditions; Disposition nl Dog

It is unlawful to permit or allow any dog to pursue any big game mammal during the closed season onsucb mammal, to pursue any fully protected, rare, or endangered mammal at any time, or lo pursue any mammal in a game refuge or ecological reserve if hunting within such refuge or ecological reserve is unlawful.

Employees nf the department may capture any dog not under the reasnnable control of its owner or handler, when such uncontrolled dog is pursuing, in violation of this section, any big game, fully protected, rare, or endangered mammal.

Employees nf the department may capture or dispatch any dog inflicting injury nr immediately threatening to inflict injury to any big game mammal during tbe closed season on such mammal, and they may capture or dispatch any dog inflicting injury or immediately threatening tn inflict injury oo any fully protected, rare, nr endangered mammal at any time.

Employees of the department may capture or dispatch any dog inflicting "injury nr immediately threatening to inflict injury to any mammal in a game refuge or ecological reser ve if hunting within such refuge or ecological reserve is unlawful.

No criminal or civil liability shall accrue to any department emphyee as a result or enforcement of this section. For the purpose of this section, "pursue"means pursue, run, or chase.

Owner s of dogs with identification, that have been captured or dispatched, shall be notified within 72 hours after capture or dispatch.

3961. Property Owner Holding Grazing Permit May Seize or Dispatch Dogs

Whenever an employee of the department is not present to carry out tbe provisions of Section 3960 with respect to any dog inflicting injury or immediately threatening to inflict injury to any deer, elk, or prong-horned antelope during the closed season for these mammals, any property owner, lessee, person holding a permit for the purpose of grazing livestock, or bis or ber employee, may seize or dispatch the dog if it is found on his or her land or premises without tbe permission of tbe person who is in immediate possession of the land. If the dog has on it any readily visible identification tag or license tag as prescribed by Section 30951 of the Food and Agricultural Code, and tbe dog is found in the act of immediately threatening tn injure deer, elk, or prong-horned antelope, the dog may only be dispatched under this section if the dog has, and the owner has been notified that the dog has, previously threatened any nf these species.

No action, civil or criminal, shall be maintained for a dog lawfully seized or dispatched pursuant to this article.

The owner of a dog shall be notified wi thin 72 hours of the seizure or dispatching of that dog under this section if it had the identification tag or license tag which is required pursuant to Section 30951 or tbe Food and Agricultural Code.

CHAPTER 2. FUR-BEARING MAMMALS

Article 1. Trapping Provisions

4000. Definition of Fur-bearing Mammals

Tbe following are fur-bearing mammals: pine marten, Gsber, wolverine, mink, river otter, gray fox, cross fox. silver foi, red fox, kit fox, raccoon, beaver, badger, and muskraL.

4001. Season lor Taking Fur-bearing Mammals

Fur-bearing manunatt may be taken between November 16th and the day before tbe last day of February.

4002. Methods for Taking Fur-bearing Mammals

Fur-bearing mammals may be taken only with a trap, a firearm, bow and arrow, poison under a proper permit, or with the use of dogs.

4003. Use of Poison to Take - Permit Required

It is unlawful to use poison to take fur-bearing mammals without a permit from the department. Tbe department may issue such a permit upon a written application indicating the kind of poison desired tn be used and the time and place or use.

4004. Unlawful Methods of Taking

It is unlawful to da any of the billowing:

(a) Use a trap with saw-toothed or spiked jaws.

(b) Use or sell leghold steel-jawed traps with a spread of 5 'A inches or larger without offset jaws.

(c) Use steel-jawed traps larger than size 1 'A or with a spread larger than 4 7/8 inches for taking muskrat-

ld) Set or maintain traps which do not bear a number or other identifying mark registered to the department or, in the case of a federal, state, county, or city agency, bear the name of that agency, except that traps set pursuant to Section 4152 or 4180 sbafl bear an identifying mark in a manner specified by the department. No registration fee shall be charged pursuant to this subdivision.

(e) Fad tn visit and remove all animals from traps at least oce daily. If tbe trapping is done pursuant to Section 415 2 or 4180, the inspection and removal shall be done by theperson who sets tbe trap or tbe owner of the land where tbe trap is set or an agent of either.

(0 Use a steel leghold trap with a spread exceeding 7 'A inches or killer-type trap of tbe conibear type that is larger than 10 inches by 10 inches.

(g) Set or maintain steel leghold traps within 30 feet of bait placed in a manner or posi lion so that it may be seen by any soaring bird. As used in this subdivision, "bait"includes any bait composed of mammal, bird, or fish flesh, fur, hide, entrails, or feathers.

(h) Set or maintain steel leghold traps with a spread nf 5 vi inches or larger without a tension device.

(Amended by Statutes 1989 Chap. 890)

4005. Take with Trap or Sell Raw Furs; License Required

***(al Except as otherwise provided in this section, even person, other than a tur dealer, who ""traps ftir-hearing mammals or coogame mammals, designated by tbe commission** or who sells raw furs of those mammals, shall procure a trapping license. "Raw fur"means any fur. pelL or skin that has not been tanned or cured, eicept that salt-cured or sun-cured pelts are raw furs.

fbl Tbe department sbnll develop standards that are oecessary to ensure the competence and proficiency o r appobcants Tor a trapping Ucense. No person shall be issued a license until be or she has passed a test ol his or her knowledge and skill in this field.

(c Persons *** trapping mammals in accordance with Section 4152 nr 4180 are not required to procure a trapping license*** except when providing trapping: services lor profit.

(i l No raw furs taken bv persons providing trapping services for proGt may be sold.

(el Officers or employees or federal, county, or city agencies or tbe department, when acting in their official capacities, or officers or employees of the Department of Food and Agriculture wben acting pursuant

Article 2. Fur Dealer License

4030. License Requirements lor Fur Dealer

Ever; person engaging in, curving on, or conducting wholly or in part the business of buying, selling, trading nr dealing in raw furs of fur-bearing mammals nr nongame mammals is a fur dealer and shall procure a fur dealer license. No fur dealer license shall be required of a licensed trapper selling raw furs which he has lawfully (alien, or a domesticated game breeder selling raw furs of animals which he has raised.

4031. License Fee

A revocable fur dealer license shall be issued to any person upon payment of a base fee of seventy dollars ($70), as adjusted under Section 713.

(Amended by Statutes 1986 Chap 1368)

4032. License Requirements lor Fur Agent

Any person who is employed by a licensed fur dealer to engage in the business of buying, selling, trading, or dealing in raw furs only oo behalf of the fur dealer and not on his own behalf is a fur agent and shall procure a fur agent license.

4033. Fur Agent Revncable License

A revocable fur agent license shall be issued to any person who is employed by a licensed fur dealer upon payment of a base fee of thirty-five Julian ($35), as adjusted uoder Section 713.

(Amended by Statutes 1986 Chap. 1363)

4034. Authority and Term nf Fur Dealer License

A fur dealer license authorizes Ihe person In whom it is issued to buy, sell, barter, exchange, or possess raw furs or parts theteof of fur-bearing mammals and nongame mammals for a term of one year from July 1st, or if issued after the beginning of such term, for the remainder thereof

4035. Display of Licenses

A fur dealer or fur agent license shall be shown upon request to any person authorized to enforce the provisions of this code.

4036. Raw Fur Purchase Restrictions

It shall be unlawful for any fur dealer to purchase the raw fur of any fur-bearing mammal or nongame mammal from any person who does not hold a valid trapping license, fur dealer license, or fur agent license.

4037. Raw Fur Transler Record Requirements

Every fur dealer licensed pursuant to this article shall maintain a true and legible record of any transfer of raw furs lo show:

(a) The license number, name, and address of the seller.
(b) The signature, name, and license number, if applicable, of the buyer
(c) The number and species nf raw furs transferred, by county of take.
(d) The price paid or terms of eichaoge.
(e) The date of transfer.
(Q Such other information as the department may require.

4038. Records - Available for Inspection at All Times

The reenrd of sale, ezchange, barter, or gift shall be available for inspection at any time by the department.

4040. Annual Report by Dealers ol Fur Transfers

Each licensed fur dealer shall submit an annual report to the department on the sale, exchange, barter, or gift of raw furs, on forms furnished by the department. No license shall be renewed until such a report is received.

4041. Confidentiality ol Receipts, Records, and Reports

The receipts, records, and reports required by this article and the information contained therein, shall be confidential, and the records shall not be public records. Any information which is published shall be published in such a manner as to preserve confidentiality of tbe persons involved.

4042. Regulation ol Raw Fur Business by Commission

Tbe commission may regulate the business of buying, selling, trading, or dealing in raw furs, or parts thereof, **of** all fur-bearing mammals or nongame mammals under a fur dealer license

4043. License Revocation

Any license issued under this chapter may be revoked by tbe commission at one nf the commissions regularly scheduled meetings, upon the licensees conviction of a violation of this article.

(Amended by Suuma 19S6Chap 1244)

CHAPTER 3. NONGAME MAMMALS AND DEPREDATORS

Article 1. Nongame Mammals

4150. Definition of Nongame Mammals; Take or Possess

All mammals occurring naturally in California which are not game mammals, fully protected mammals, or fur-bearing mammals, are nongame mammals. Nongame mammals or parts thereof may not be taken or possessed eicept as provided in this code or io accordance with regulations adopted by the commission.

4151. House Cats Found Within Limits ol Reluge

Any bouse cat (Felis domesticus) found within tbe limits nf any fish and game refuge is a nongame mammal, unless it is in the residence **or** its owner or upon tbe grounds of the owoer adjacent to such residence.

4152. Taking ol Nongame Mammals Found Injuring Crops or Properly

***Except as provided in Section 4001 nonaame mammals and black-taded jackrabbits, muskrats, and red **foi** srpiirrels ***Ujai are found to be injuring growing crops or other property may be taken at any time or in any manner in accordance with this code by tbe owner or tenant **or** tbe premises or employees thereof, eicept that if leghold steel-jawed traps art used to take those mammals, the traps and the use thereof shall be in accordance with subdivisions (a), (b), and (d) of Section 4004. They may also be taken by officers or employees of tbe Departmeot **or** Food and Agriculture or by federal, county, or city, officers or employees when acting in their official capacities pursuant to the provisions of the Food and Agricultural Code pertaining to pests, or pursuant to ""Article 6 (commencing with Section 6021) of Chapter 9 of Part 1 of Division 4 **or** the Food and Agricultural Code. Persons taking mammals in accordance with this section are exempt from the requirements of Section 3007. Raw furs, as defined in Section 4005. that are taken under

Traps used pursuant tn this section shall be inspected and all animals in tbe trap shaU be removed at least once dady. The inspection and removal shaU be done by the person who sets the trap or the owner of the land where tbe trap is set or an agent of either.

(Amended by Statutes 2002 *Clap. 571)*

4153. Control ol Harmlul Nongame Mammals

Tbe department may enter into cooperative agreements with any agency of the stale or the United States for tbe purpose of controlling harmful nongame mammals.

Tbe department may take any mammal which, in its opinion, is unduly preying upon aoy bird, mammal, or fish.

4154. Contracts and Expenditures lor Control ol Harmful Nongame Mammals

The department may enter into cooperative contracts with the United States Fish and Wildlife Service in the Department of the Interior in relation to the control of nongame mammals and for that purpose may expend any money made available to thedepartment for expenditure for cootrol or eradication of nongame mammals.

Article 2. Depredators

4180. Take Fur-bearing Mammals; Conditions; Use ol Leghold Steel-jawed Traps; Removal ol Animals In the Trap

"'Except as provided for in Section 4005. fur-bearing mammals ***that are injuring property may be taken at any time and in any manner in accordance with this code, eicept that if leghold steel-jawed traps are used to take those mammals, the traps and tbe use thereof shall be in accordance with subdivisions (a), (b), and (d) of Section 4004. Raw furs, as defined in Section 4005. that are taken under Hif not be sold.

Traps used pursuant to this section shall be inspected and all animals in tbe trap shall be removed at least once daily. The inspection and removal shall be done by the person who sets the trap or the owner of the land where the trap is set or an agent of either.

(Amended by Salutes 2002 Chop. 571)

4180.1. Manners of Taking Immature Depredator Mammals

It is unlawful to use snares, hooks, or barbed wire to remove from tbe den, or fire to kill in the den, any immature depredator mammal.

Nothing in this section shall prohibit tbe use of fire-ignited gas cartridges or other products registered or permitted under tbe Federal Insecticide, Rodenticide, and Fungicide Act (7 U.S.C. 135 etseq.).

4181. Kill Elk, Bear, Beaver, Wild Pig, or Gray Squirrels Damaging Property; Permit Required

(a) Except as provided in Section 4181.1, any owner or tenant **of** land or property that is being damaged or destroyed or is in danger of being damaged or destroyed by elk, bear, beaver, wdd pig, or gray squirrels, may apply tn the department for a permit to kill the mammals. The department, upon satisfactory evidence **or** the damage or destruction, actual nr immediately threatened, shall issue a revocable permit for the taking and disposition of tbe mammals under regulations adnpted by the commission. Tbe permit shall **include** a statement **or** the penalties that may be imposed for **a** violation of the permit conditions. Mammals so taken shall not be sold or shipped from tbe premises on which they are taken eicept under instructions from the department. No iron-jawed or steel-jawed or any type of metal-jawed trap shall be used to take any bear pursuant to this section. No poison of any type maybe used to take any gray squirrel pursuant to this section. The department shall designate tbe type of trap to be used to insure tbe most humane method is used to trap gray squirrels. The department may require trapped squirrels to be released in parks or other nonagi icultur al areas. It shall be unlawful for any person to violate the terms **or** any permit issued under this section.

(b) The permit issued for taking bears pursuant to subdivision (a) shall contain tbe following Tacts:

(1) Why the issuance of tbe permit was necessary.

(2) What efforts were made tn solve the problem without lolling the bears.

(3) What corrective actions should be implemented to prevent reoccurrence.

(c) With respect to wdd pigs, the department shall provide an applicant for a depredation permit to take wild pigs or a person who reports talcing wdd pigs pursuant to subdivision (b) of Section 4181.1 with written information that sets forth available options for wild pig control, mciuding, but not limited to, depredation permits, allowing periodic access to licensed hunters, and holding special hunts authorized pursuant to Section 4188. The department may maintain and make available to these persons bits of licensed hnntei s interested in wild pig hunting and fists of nonprofit organizations that are available to take possession of depredating wdd pig carcasses.

(Amended by Statutes 1997 Chap. 4SI)

4181.1. Take Bear or Wild Pig in Act nl Injuring Livestock; Reporting Requirement, etc.

(a) Any bear that is encnuntered while in the act of inflicting injury to, molesting, or killing, livestock may be taken immediately by the owner of tbe livestockor the owner's employee if tbe talcing is reported no later than the next working day to the department and the carcass is made avadable to the department.

(b) Notwithstanding Section 4652, any wild pig that is encountered while in the act of inflicting injury to, molesting, pursuing, worrying, or killixig livestock or damaging or destroying, or threatening to immediately damage or destroy, land or other property, including, hut not limited to, rare, threatened, or endangered native plants, wildlife, or aquatic species, may be taken immediately by the owner of the livestock, land, or property or the owner's agent or employee, or by an agent or employee of any federal, state, coun ty, or city entity when acting in his or her ollicial capaci ty. The person taking the wild pig shall report the taking no later than the next working day to the department and shall make the carcass available to the department. Unless otherwise directed by the department and notwithstandingSection 4657, the person taking a wild pig pursuant to this subdivision, or to whom the carcass of a wild pig taken pursuant to this subdivision is transferred pursuant to subdivision (c). may possess the carcass of the wild pig. The person in possession of the carcass shall make use of the carcass, which may include an arrangement for the transfer of the carcass tn another person or entity, such as a nonprofit organization, without compensation. The person who arranges this transfer shall be deemed to be in compliance with Sectioo 4304. A violation of this subdivision is punishable pursuant toSection 12000. It is the latent of the Legislature that nothing in this subdivision shall be interpreted to authorize a person to take wild pigs pursuant to this subdivision in violation of a state statute or regulation or a local zooiog or other ordinance that is adopted pursuant to other provisions nf law and that restricts the discbarge of firearms.

(c) The department shall make a record of each report made pursuant ta subdivision (a) or (b) aod may have an employee of the department investigate the taking or cause the taking to be investigated. The person talcing a wotd pig shall provide informatioo as deemed necessary by the department. Upon completion of the investigation, the investigator may, upon a finding that the requirements of this section have been met with respect to the particular bear or wild pig taken under subdivision (a) or (b), issue a written statement to the person confirming that the requirements of this section have been met. The person who took the wotd pig may transfer the carcass to another person without compensation.

(d) Notwithstanding Section 4763, any part of any bear lawfully possessed pursuant to this section is subject to Section 4758.

(e) Nothing in liiis section prohibits federal, state, or county trappers from killing or trapping bears when the bears are killing or molesting livestock, but no iron-jawed or steel-jawed or aoy type of metal-jawed trap shall be used to take the bear, and no persoo, including employees of the state, federal, or county government, shall take bear with iron-jawed or steel-jawed or any type of metal-jawed traps.

(Amended by Salutes 1997 Chap. 4SI)

4181.2. Damage by Wild Pigs Defined

For the purposes of this article relating to damage caused by wild pigs, "damage'means loss or barm resulting from injury to person or property. The department shall develop statewide guidelines to aid in determining the damage caused by wild pigs. The guidelines shall consider various uses of the land impacted by pigs.

(.Wed by Statutes 1997 Chap. 481)

4181.5. Take Deer Damaging or Destroying Land; Permit, etc.

Any owner or tenant of land or property that is being damaged or destroyed or is in immediate danger of being damaged nr destroyed by deer may apply to the department for apermit to kill such deer. The department, upon satisfactory evidence of such damage or destruction, actual or immediately threatened, shall issue a revocable permit for the taking and disposi tion of such deer for a designated period not to exceed 60 days under regulations promulgated by tbe commission.

The regulations of the commission shall include provisions concerning tbe type or weapons to be used lo kill the deer. The weapons shall be such as will ensure humane lolling, bu t the regulations nf tbe commission shall provide for lhe use of a sufficient variety of weapons to permit the designation of particular types to be used in any particular locality commensurate with tbe need to protect persons and property. Firearms using.22-caliber rimfire cartridges may be used only when authorized by the director. No pistols shall be used. The caliber and type of weapon to be used by each permittee shall be specified in each permit by the issuing officer who shall take into consideration tbe location of the area, tbe necessity for dean kills, the safety factor, locaf firearms ordinances, and other factors which apply. Rifle ammunition used shall have expanding bullets; shotgun ammunition shall have only single slugs.

The department shall issue tags similar tn tbose provided for in Section 4331 at the same time the permit is issued. A permittee under this section shall carry the tags while hunting deer, and upoo the killing of any deer, shall immediately fill out both parts of the tag and punch out clearly the date of the kill. One part of the lag shall be immediately attached to tbe antlers of antlered deer or to the ear of any other deer and kepi attached until ten (10) days after the permi t has expired. The other part of tbe tag shall be immediately sent to the department after it has been countersigned by any person authorized by Sediou 4341.

A permit issued pursuant lo this section may be renewed only after a finding by the department that further damage has occurred or will occur unless such permit is renewed. A person seeking renewal of the permit shall account for all prior tags issued at lhe time be received any prior permits, aod if any tags are unused, he must show either that aoy deer killed could not reasonably be tagged or why the killing was not accomplished within the allotted lime aod why such killing would be accomplished under a new time period.

4185. Take Bears Near Beehives in Riverside or San Bernardino Counties; Conditions; Trap Requirements; elc.

In any district or part of a district within San Bernardino and Riverside Counties, bears may be taken at any time with traps within a good and substantial fence, as such fence is described in Section 17121 of the Food and Agricultural Code, surrounding beehives, if no part of the fence is at a distance greater than 50 yards from a beehive, and if a conspicuous sign is posted aod maintained at each entrance to the endosed premises to give warning of lhe presence of the traps. No iron or steel-jawed or any type or metal-jawed trap shall be used to take bear under this sectioo.

4186. Take Cottontail or Brush Rabbits Damaging Crops or Forage

Nothing in this code prohibits tbe owner or leoant of land, or aoy persoo authorized in writing by such owner or tenant, from taking cottontail or brush rabbits during any time of the year wbeo damage to crops or forage is being experienced on such land. Any person other than tbe owner or tenant of such land shall have in possession when transporting rabbits from such property written authority from tbe owner or tenant nf land where such rabbits were taken. Rabbits taken under the provision of this code may not he sold.

4188. Permits lor Licensed Hunters lo Take Wild Pigs or Deer

When a laodnwner or leuau t app lies fu i a permit under Section 4181 for wild pigs, or Section 4181.5 for deer, the commission, in lieu nf such a permit may, with the consent of, or upon the request of, the landowner or tenant, under appropriate regulations, authorize

tbe issuance nf permits to persons holding valid hunting licenses tn lake wild pigs or deer in sufficient numbers to stop the damage or threatened damage. Prior to issuing permi ts to licensed hunters, the department shall investigate and determine the number of permits necessary, tbe territory involved, tbe dates of the proposed hunt, the manner of issuing the permits, and the fee for the permit.

(Amended by Statutes 1991 Chap. 99S)

4190. I.D. of Relocated Depredatory Mammals

The department shall tag, brand, or otherwise identify in a persistent and distinctive manner large depredatory mammal relocated by, or with tbe approval of, the department for game management purposes. ,

CHAPTER 4. DEER

Article 1. Taking Deer

4301. Deer Meat; Sell, Purchase, or Transport lor Purposes ol Sale; Exceptions

(a) Subject lo the provisions of this code permitting the sale of domestically raised game mammals, it is uolawful to sell or purchase, or transport Tor the purpose of sale, any deer meat in this state whetber fresh, smoked, canned, or preserved by any means, except fallow deer meat processed by a slaughterer in accor-

§ 353. Methods Authorized for Taking Big Game.

(a) Except for the provisions of subsections 353(b) through (g), title 14, CCR, big game (as defined by section 350, title 14, CCR) may only be taken by rifles using centerfjre cartridges with softnose or expanding bullets; bow and arrow (see section 354, title 14, CCR, for archery equipment regulations); or wheellock, matchlock, flintlock or percussion type muzzleloading rifles using black or pyrodex powder with single ball or bullet loaded from the muzzle and at least .40 caliber in designation.

(b) Shotguns capable of holding not more than three shells firing single slugs may be used for the taking of deer, bear and wild pigs. In areas where the discharge of rifles or shotguns with slugs is prohibited by county ordinance, shotguns capable of holding not more than three shells firing size 0 or 00 buckshot may be used for the taking of deer only.

(c) Pistols and revolvers using cenrerfire cartridges with softnose or expanding bullets may be used to take deer, bear, and wild pigs.

(d) Pistols and revotvers with minimum barrel lengths of 4 inches, using centerfire cartridges with softnose or expanding bullets may be used to take elk and bighorn sheep.

(e) Crossbows may be used to take deer and wild pigs only during the regular seasons.

(f) Muzzleloading rifle hunters may not possess other firearms or archery equipment authorized for taking big game, pursuant to subsections 353 (a) through (d), and shall possess muzzleloading rifles equipped with iron sights only, while hunting under the provisions of a muzzleloading rifle only tag.

(g) Under the provisions of a muzzleloading rifle/archery tag, hunters may possess muzzleloading rifles as described in subsection 353(a) equipped with iron sights only; archery equipment as described in Section 354; or both. For purposes of this subsection, archery equipment does not include crossbows.

NOTE- Authority cited: Sections 200, 202 and 203, Fish and Game Code. Reference: Sections 200, 202, 203, 203.1,207 and 3950, Fish and Game Code.

HISTORY

1. Repealer and new section filed 6-22-87; operative 6-22-87 (Register 87, No. 27). For prior history, see Register 85, No. 44.
2. Amendment of subsection (e) and new subsection (g) filed 5-31-88; operative 5-31-88 (Register 88, No. 23).
3. Amendment of subsection (a) and new subsection (h) filed 10-15-90 as an emergency; operative 10-15-90 (Register 90, No. 46). A Certificaie of Compliance must be tnmsmioecl to OAL by 2-12-91 oremergency language will be repealed by operation of law on the following day.
4. Reinstatement of section as it existed prior to emergency amendment filed 10-15-90 by operation of Government Code section 11346.1(f) (Register 91, No. 49).
5. Amendment of subsection (a) filed 7-8-92; operative 7-8-92 pursuant to Fish and Game Code section 215 (Register 92, No. 28).
6. Amendment of subsections (b) and (c) and NOIE filed 6-23-93; operative 6-23-93 pursuant to Fish and Game Code sections 202 and 215 (Register 93, No. 26).
7. Amendment of subsections (a) and (g) filed 7-13-94; operative 7-13-94 pursuant to sections 202 and 215, Fish and Game Code (Register 94, No. 28).
8. Change without regulatory effect amending subsection (g) filed 3-28-96 pursuant to section 100, tide 1, California Code of Regulations (Register 96, No. 13).
9. Amendment of subsection (a), new subsection (d), repealer of subsections (e) and (0. subsection relettermg, and amendment of newly designated subsection (f) filed 7-1-98; operative 7-1-98 pursuant to Fish and Game Code sections 202 and 215 (Register 98, No. 27).
10. Amendment of subsection (a) and new subsection (g) filed 6-27-20OO; operative 6-27—2000 pursuant to Fish and Game Code sections 202 and 205 (Register 2000, No. 26).

§ 354. Archery Equipment and Crossbow Regulations.

(a) Bow, as used in these regulations, means any device consisting of a flexible material having a string connecting its two ends and used to propel an arrow held in a firing position by hand only. Bow, includes long bow, recurve or compound bow.

(b) Crossbow, as used in these regulations means any device consisting of a bow or cured latex band or other flexible material (commonly referred to as a linear bow) affixed to a stock, or any bow that utilizes any device attached directly or indirectly to the bow for the purpose of keeping acrossbowbolt, an arrow or the string in a Firing position. A crossbow is not archery equipment.

(c) For the taking of big game, hunting arrows and crossbow bolts with a broad head type blade which will not pass through a hole seven-eighths inch in diameter shall be used. Mechamcal/retractable-broad heads shall be measured in the open position. For the taking of migratory game birds, resident small game, furbearers and nongame mammals and birds any arrow or crossbow bolt.may be used except as prohibited by subsection (d) below.

(d) No arrows or crossbow bolt with an explosive head or with any substance which would tranquilize or poison any animal may be used. No arrows or crossbow bolt without flu-flu fletching may be used for the take of pheasants and migratory game birds, except for provisions of section 507(a)(2).

(e) No arrow or crossbow bolt may be released from a bow or crossbow upon or across any highway, road or other way open to vehicular traffic.

(f) No bow or crossbow may be used which will not cast a legal hunting arrow, except flu-flu arrows, a horizontal distance of 130 yards.

(g) Crossbows may not be used to take game birds and game mammals during archery seasons.

(h) Archers may not possess a firearm while hunting in the field during any archery season, or while hunting during a general season under the provisions of an archery only tag..

(i) No person may nock or fit the notch in the end of an arrow to a bowstring or crossbow string in a ready-tc-fire position while in or on any vehicle.

NOTE: Authority cited: Sections 200,202,203 and 240, Fish and Game Code. Reference: Sections 200,202, 203 and 203.1, Fish and Game. Code.

HISTORY

1. Amendment of subsections (a) and (f) filed 6-24—85 as an emergency; effective upon filing (Register 85, No. 27). A Certificaie of Compliance must be transmitted to OAL within 120 days or emergency language will be repealed on 10-22-85.
2. Notice of Erroneous Filing declaring 6-24—85 Certificate of Compliance null and void filed 7-2-85 (Register 85, No. 27).
3. Amendment filed 9-27-85; effective tenth day thereafter (Rettisrer 85, No. 39).
4. Amendment of subsectioo (d) filed 10-11-85; effective upon filing (Register 85, No. 44).
5. Certificate of Compliance as to 6-24-85 order transmitted to OAL 9-30-85 and filed 11-1-85 (Register 85, No. 44).
6. Amendment of subsections (b) and(c) filed 6-22-87: operative 6-22-87 (Register 87, No. 27).
7. Amendment of subsection (c) filed 10-15-90 as an emergency; operative 10-15-90 (Register 90, No. 46). A Certificate **d**! Compliance must be Dansmi tted to OAL by 2—12-91 or emergency language will be repealed by operation of law on the following day.
8. Reinstatement of section as it existed prior to emergency amendment filed 10-15-90 by operation of Government Code section 11346.1(f) (Register 91, No. 49).
9. Amendment of subsection (f) and **NOIE** and new subsection (r) filed 7-8-92; operative 7-8-92 pursuant to Frsh and Game Code section 215 (Register 92, No. 28).
10. Change without regulatory effect amending subsection (d) filed 7-24-2001 pursuant to section 100, title 1, California Code of Regulations (Register 2001, No. 30).
11. Amendment of subsection (c) filed 6-24-2003; operative 7-1-2003 pursuant to Government Code section 11343.4 (Register 2003, No. 26).

§ 355. Weapons and Ammunition Authorized for the Taking of Big Game.

NOTE: Authority cited: Sections 200.202, and 203, Fish and Game Cade. Reference: Sections 200-203.1. 206, 207, 211-222, and 3950, Fish and Game Code.

HISTORY

1. Amendment filed 6-5-72; effective thirtieth day thereafter (Register 72. No. 24). For prior history, see Register 70. No, 23.
2. Amendment of subsection (d) filed 5-11-79; designated effective 7-1-79 (Register 79, No. 19).
3. Renumbering and amendment of Section 355 to Section 353 filed 5-13-81; designated effective tenth day thereafter (Register 81, No. 20).

§ 355.5. Firearms and Archery Equipment Authorized for Taking Nongame Animals During the Open Deer Season.

NOTE: Authority cited: Sections 200-221, Fisb and Game Code. Reference: Sections 200-221, Fish and Game Code.

HISTORY

1. New section filed 6-13-78; effective thirtieth day thereafter (Register 78, No. 24).
2. Repealer filed 3-11-79; designated effective 7-1-79 (Register 79, No. 19).
3. Change without regulatory effect amending section heading filed 3-28-96 pursuant to section 100, title 1, California Code of Regulations (Register 96, No. 13).

§ 356. Shooting Hours on Big Game.

NOTE Authority cited: Section 3000, Fish and Game Code. Reference: Sections 3000, and 3950, Fish and Game Code.

HISTORY

1. Amendment filed 6-4-70; designated effected 7-1-70 (Register 70, No. 23).
2. Amendment fded 5-28-71; designated effective 7-1-71 (Register 71, No. 22).
3. Amendment Sled 6-5-72; effective thirtieth day mercaiter (Register 72, No. 24).
4. Amendment 6-13-78; effective thirtieth day thereafter (Register 78, No. 24).
5. Renumbering of Section 356 to Section 352 Bled 5-13-81; designated effective tenth day thereafter (Register 81, No. 20).

§ 357. Use of Dogs in Hunting Deer, Bear, Wild Pigs.

NOTE Authority cited: Sections 200, 202, 203, 219, 3800, 4150, and 4853, Fish and Game Code. Reference: Sections 200-203.1,206, 207,211 -222,3800,4000, 4150, 4756, and 4850-4854, Fish and Game Code.

HISTORY

1. Amendment filed 6-16-61; designated effective 7-1-61 (Register 61. No. 12).
2. Amendment Sled 6-23-66; designated effective 7-2-66 (Register 66, No. 19).
3. Amendment filed 6-1-73; designated effective 7-1-73 (Register 73, No. 22).
4. Amendment filed 6-13-78; effective thirtieth day thereafter (Register 78, No. 24).
5. Amendment filed 5-19-80; designated effective 5-19-80 (Register80, No. 21).
6. Repealer filed 5—13-81; designated effective tenth day thereafter (Register 81, No. 20).

§ 357.1. Use of Dogs in Pursuit of and/or Hunting Wildlife.

NOTE Authority cited: Sections 200, 202. 203, 219. 3800, 4150, and 4853, Fish and Game Code. Reference; Sections 200-203.1,206,207,211-222,3800,4000, 4150, 4756. and 4850-4854, Fish and Game Code.

HISTORY

1. New section filed 6-14-77; designated effective 7-1-77 (Register 77, No. 25).
2. Amendment of subsections (a), (b), and (c) (3) filed 6-13-78; effective thirtieth day thereafter (Register 78, No. 24).
3. Amendment of subsections (a) and (c) (3) filed 5-11-79; designated effective 7-1-79 (Register 79, Na. 19).
4. Amendment filed 5-19-80; designated effective 5-19-80 (Register 80, No. 21).
5. Repealer filed 5-13-81; designated effective tenth day thereafter (Register 81, No. 20).

§ 358. Archery Deer Hunting.

NOTE Authority cited: Sections 200, 202, and 203, Fish and Game Code. Reference: Sections 200-203.1, 2Q6, 207, and 211-222, Fish and Game Code.

HISTORY

1. Amendment of subsections (a) and (b) filed 6-4-76; designated effective 7-1-76 (Register 76, No. 23). For prior history, see Register 75, No. 23.
2. Amendment filed 6-14-77; designated effective 7-1-77 (Register 77, No. 25).
3. Amendment filed 6-13—78; effective thirtieth day thereafter (Register 78, No. 24).
4. Amendment filed 5-U-79; designated effective 7-1-79 (Register 79, No. 19).
5. Amendment filed 5-19-80; designated effective 5-19-80 (Register 80, No.21).
6. Renumbering of Section 358 to Section 361 filed 5-13-81; designated effective tenth day thereafter (Register 81, No. 20).

§ 358.5. Archery Bear Hunting.

NOTE Authority cited: Sections 200. 202, and 203, Fish and Game Code. Reference: 200-203.1, 206, 207, and 211-222, Fish and Game Code.

HISTORY

1. Amendment of subsection (a) filed 6-13—78; effective thirtieth day thereafter (Register 78, No. 24). For prior history, see Register 77, No. 25.
2. Amendment filed 5-11-79; designated effective 7-1-79 (Register 79, No. 19).
3. Amendment filed 5-19-80; designated effective 5-19-80 (Register 80, No. 21).
4. Repealer filed 5-13-81; designated effective tenth day thereafter (Register 81, No. 20).

§ 359. Archery Equipment Regulations.

NOTE Authority cited: Sections 200, 202, and 203, Fish and Game Code. Reference: 200-203.1, 206, 207, and 211-222, Fish aod Game Code.

HISTORY

1. New subsection (g) filed 5-11-79; designated effective 7-1-79 (Register 79, No. 19). For prior history, see Register 78, No. 24.
2. Repealer filed 6-7-82; designated effective tenth day thereafter (Register 82. No. 24).

§ 359.5. Use of Crossbows.

NOTE Authority cited; Sections 200, 202, and 203. Fish and Game Code. Reference: Sections 200-203.1, 206, 207, and211-222. Fish and Game Code.

HISTORY

1. Amendment filed 6-14-77; designated effective 7-1-77 (Register 77, No. 25).
2. Renealer filed 6-7-82; designated effective tenth day thereafter (Register 82 No. 24).

§ 360. Deer.

Except as otherwise provided in this Title 14, deer may be taken only as follows:

(a) A, B, C, and D Zone Hunts.

(1) Zone A.

(A) Area; In the counties of Alameda, Contra Costa, Kings, Marin, Monterey, Napa, San Benito, San Mateo, Santa Clara, Santa Cruz, Solano, and Sonoma; and those portions of the counties of Colusa, Fresno, Kern, Lake, Mendocino, Los Angeles, Madera, Merced, Sacramento, San Joaquin, San Luis Obispo, Santa Barbara, Stanislaus, Tulare, Ventura and Yolo lying south and west of a line beginning at the junction of the mouth of Hardy Creek (Mendocino County) and the Pacific Ocean; east along Hardy Creek to Highway 1; north along Highway 1 to Highway 101; south along Highway 101 to Commercial Avenue in the town of Willits; east on Commercial Avenue to the Hearst-Willits Road (County Road 306); north and east on the Hearst—Willits Road to the Main Eel River, southeast on the Main Eel River to Lake Piilsbury at Scott Dam; southeast along the west shore of Lake Piilsbury and the Rice Fork of the Eel River to Forest Service Road M-10; east on Forest Service Road M-l0 to Forest Service Road 17N16; east on Forest Service Road 17N16 to Forest Service Road M-10; east on Forest Service Road M-10 to Leas Valley-Fouts Spring Road; east on the Letts Valley-Fouts Spring Road to tbe Elk Creek-Stonyford Road (County Road 306); north on the Elk Creek-Stonyford Road to the Glenn-Colusa county line; east along the Glenn-Colusa County line to Interstate 5; Interstate 5 south to Highway 99 in the City of Sacramento; Highway 99 south to Highway 166 in Kem County; west on Highway 166 to Highway 33; south on Highway 33 to Sespe Creek; east and south along Seape Creek to Highway 126; east on Highway 126 to Interstate 5; south on Interstate 5 and 405 to Interstate 10; west on Interstate 10 to the Pacific Ocean.

(B) Season: The season in Zone A shall open on the second Saturday in August and extend for 44 consecutive days.

(C) Bag and Possession Limit: One buck, forked hom (see subsection 351(a)) or better, per tag.

(D) Number of Tags: 65,000.

(2) Zone B.

(A) Area; Shall include all of Zones B-l, B-2.B-3, B-4, B-5 and B-6 (see subsections 360(a)(2)(A) 1-6).

l.ZoaeB-f.

In the County of Del Norte and those portions of Glenn, Humboldt, Lake, Mendocino, Siskiyou and Trinity counties within aline: Beginning at the California-Oregon state line and the Pacific Ocean; east along the state line to the point where Cook-Green Pass Road (Forest Service Road 48N20) intersects the California-Oregon state Line; south on the Cook-Green Pass Road to Highway 96 near Seiad Valley; west and south along Highway 96 to Highway 299 at Willow Creek; southeast along Highway 299 to the South Fork of the Trinity Riven southeast along the South Fork of the Trinity River to the boundary of the Yolla Bolly-Middle Eel Wilderness Area; southwest along the boundary of the Yolla Bolly-Middle Eel Wilderness Area to the Four Corners Rock-Washington Rock Trail; south and east on the Four Corners Rock-Washington Rock Trail to the North Fork; of Middle Fork Eel River; south on the North Fork of Middle Fork Eel River to Middle Fork Eel River; east on Middle Fork Eel River to confluence with Balm of Gilead Creek; north and east on Balm of Gilead Creek to confluence with Minnie Creek; east and south on Minnie Creek to Soldier Ridge Trail; north an Soldier Ridge Trail to Surnmit Trail; south on Suirimit Trail to Green Springs Trail head at Pacific Crest Road (U.S. Forest Service Road M-2); south on the Mendocino Pass Road to the intersection of Forest Highway 7; west on Forest Highway

17. Amendment filed 6-28-2002; operative 6-28-2002 pursuant to fish and Game Code sections 202 and 215 (Register 2002, No. 26).

18. Amendment of subsection (d) filed 6-24-2003; operative 7-1-2003 pursuant to Government Code section 11343.4 (Register 2003. No. 26).

§ 363. Pronghorn Antelope.

The Lava Beds National Monument and Federal and State Game Refuges lying within the hunt boundary are closed to pronghorn antelope hundng, except for the state's Hayden Hill (IS) and Blacks Mountain (IF) game refuges in Lassen County and the Clear Lake National Wildlife Refuge in Modoc County. Refer to subsection 363(b)(5) for special conditions for permission to enter and hunt pronghorn antelope in the Clear Lake National Wildlife Refuge.

(a) Zone 1—Mount Dome;

(1) Area: That portion of Siskiyou County within a line beginning at the junction of Interstate 5 and the California-Oregon state line; east along the California-Oregon state line to the Ainsworth Comers-Lava Beds National Monument Road; south along the Ainsworth Comers-Lava Beds National Monument Road to the Mammoth Crater-Medicine Lake Road; southwest along the Mammoth Crater-Medicine Lake Road to the Medicine Lake-Telephone Flat Road; east and south along the Medicine Lake-Telephone Flat Road to the Telephone Flat-Bartle Road; southwest along the Telephone Flat-Bartle Road to Highway 89; west along Highway 89 to Interstate 5; north along Interstate 5 to the California-Oregon state Line to the point of beginning.

(2) Seasons:

(A) The general season shall open on the Saturday following the third Wednesday in August and continue for nine consecutive days.

(B) The archery only season shall open 14 days prior to the general season and continue for nine consecutive days.

(3) Bag and Possession Limit: One pronghorn antelope in a license year.

(4) Number of License Tags:

(A) General Season: 5 buck tags and 0 doe tags.

(B) Archery Only Season: 1 buck tags and 0 doc tags.

(b) Zone 2—Clear Lake:

(1) Area: Those portions of Modoc and Siskiyou counties within a line beginning at the junction of the Lava Beds National Monument Road and the CMifomia-Oregon state line at Ainsworth Comers; east along the CalUornia-Oregon state line to the Crowder Flat Road; south along the Crowder Flat Road to Modoc County Road 73; south along Modoc County Road 73 to Modoc County Road 136; west along Modoc County Road 136 to the Blue Mountain-Mowitz Road; west and south along the Blue Mountain-Mowitz Road to the Deadhorse Hat-Badger Well Road; southwest along the Deadhorse Flat-Badger Well Road to the Badger Well-Browns Well Road; south along the Badger Well-Browns Well Road to the Sorholus Tank-Hackamore Road; southwest along the Sorholus Tank-Hackamore Road to Highway 139; southeast along Highway 139 to Modoc County Road 91; south along Modoc County Road 91 to the Mud Lake-Mud Springs Road; west along the Mud Lake-Mud Springs Road to the North Main Road; southwest along the North Main Road to the Long Bell-Iodine F'rairie Road at Long Bell Forest Service Station; northwest along the Long Bell-Iodine Prairie Road to the Bartle-Telephone Flat Road; north along the Bartle-Telephone Flat Road to the Telephone Flat-Medicine Lake Road; north and west along the Telephone Flat-Medicine Lake Road to the Medicine Lake-Mammoth Crater Road; northeast along the Medicine Lake-Mammoth Crater Road to the Lava Beds National Monument-Ainswonh Comers Road; north along the Lava Beds National Monument-Ainsworth Comers Road to the California-Oregon state line to the point of beginning.

(2) Seasons:

(A) The general season shall open on the Saturday following the third Wednesday in August and continue for nine consecutive days.

(B) The archery only season shall open 14 days prior to the general season and continue for nine consecutive days.

(3) Bag and Possession Limit; One prongbom antelope in a license year.

(4) Number of License Tags:

(A) General Season: 20 buck tags and 0 doe tags.

(B) Archery Only Season: 1 buck tags and 0 doe tags.

(5) Special Conditions: Tbe special regulations regarding the Peninsula "U" portion of the Clear Lake National Wildlife Refuge are summarized as follows:

(A) The area will be open on weekends and holidays only during the general season.

(B) Permission to enter this area must be obtained at the gate entrance located on the Clear Lake Road. Hunters for this area will be selected by public drawing. Persons selected for pronghorn antelope tags for Zone 2 (Clear Lake) may apply for this drawing by submitting an application upon receipt of their license tag to the Department of Fish and Game, 601 Locust Street, Redding, CA 96001. Applicants may apply as a party of two. Applications shall consist of the following: a standard U.S. Postal Service postcard with the applicant's tag number, name, address, city, zip code, area code, telephone number, and the notation "Application for Pronghorn Antelope Hunt Access Permit, Clear Lake Peninsula." Applications must reach the Redding office before the close of the business day on the second Friday in August. Successful applicants will be notified. A two-party application will not be split. The specific number of hunters will be determined each year by the Department No more than five hunters will be allowed on the area at any one time unless a party of two is drawn for the fifth place. If the fifth place is the first member of a party, then no more than six hunters will be allowed on the area at any time.

(C) The gate entrance will be open from 6:00 a.m. to one hour after sunset.

(D) The fence near the gate entrance constitutes the south boundary of the area.

(E) The specific number of pronghorn antelope to be taken from this area is determined by the number of pronghorn antelope present This area will be closed once this number is reached.

(c) Zone 3—Likely Tables:

(1) Area: Those portions of Modoc and Lassen counties within a line beginning at the junction of the Crowder Flat Road and the California-Oregon state line; east along the California-Oregon state line to the crest of the Warner Mountains; south along the crest of the Warner Mountains to the Summit Trail at Pepperdine Camp; south along the Summit Trail to the South Warner Road near Patterson Forest Service Station; west along the South Warner Road to the Long Valley-Clarks Valley Road; south along the Long Valley-Clarks Valley Road to the Clarks Valley-Madeline Road; west along the Clarks Valley-Madeline Road to Highway 395 at the town of Madeline; north along Highway 395 to theMadeline-Adin Road; northwest along the Madeline-Adin Road to the Hunsinger Draw-Sweagen Flat Road; east and north along the Hunsinger Draw-Sweagert Flat Road to the Sweagert Flat-Hunters Ridge Road; north and west along the Sweagert Flat-Hunters Ridge Road to Highway 299 near Lower Rush Creek Recreation Site; north along Highway 299 to the Canby Bridge-Cottonwood Flat Road; northwest along the Canby Bridge-Cottonwood Flat,Road to the Cottonwood Hat-Happy Camp Road; northwest along the Cottonwood Flat-Happy Camp Road to Modoc County Road 91; north along Modoc County Road 91 to Highway 139; north along Highway 139 to the Hackamore-Sorholus Tank Road; northeast along the Hackamore-Sorholus Tank Road to the Browns Well-Badger Well Road; north along the Browns Well-Badger Well Road to the Badger Well-Deadhorse Flat Road: northeast and east along the Badger Well-Deadhorse Flat Road to the Mowitz-Blue Mountain Road; north and east along the Mowitz-Blue Mountain Road to Modoc County Road 136; east along Modoc County Road 136 to Modoc County Road 73; north along Modoc County Road 73 to the Crowder Hat Road; north along the Crowder Hat Road to the California-Oregon state line, to the point of beginning.

(2) Seasons:

(A) Period One of the general season shall open on the Saturday following the third Wednesday in August and continue for nine consecutive days. Period Two of the general season shall open on the first Saturday in September and continue for nine consecutive days.

(B) The archery only season shall open 14 days prior to the earliest general season and continue for nine consecutive days.

(3) Bag and Possession Limit: One pronghorn antelope in a license year.

(4) Number of License Tags:

(A) General Season: Period One: 44 buck tags and 0 doe tags. Period Two: 44 buck tags and 0 doe tags.

(B) Archery Only Season: 7 buck tags and 0 doe tags.

(d) Zone 4—Lassen:

(1) Area: Those portions of Lassen, Plumas and Shasta counties within aline beginning at the junction ofHighway 36 and the Juniper Lake Road in the town of Chester; north along the Juniper Lake Road to the Lassen National Park boundary; north and west along the Lassen National Park boundary to Highway 89; north along Highway 89 to U.S. Forest Service Road 22 near the Hat Creek Ranger Station; east along U.S. Forest Service Road 22 to U.S. Forest Service Road 35N06; east and north along U.S. Forest Service Road35N06 to the State Game Refuge IS boundary; northwest along the State Game Refuge 1S boundary to the Coyote Canyon-Dixie Valley Road; northwest aloag the Coyote Canyon-Dixie Valley Road to the Dixie Valley-Boyd Hill Road; northwest along the Dixie Valley-Boyd Hill Road to the Snag Hill-Hayden Hill Road; northeast and north along the Snag Hill-Hayden Hill Road to Highway 139; southeast on Highway 139 to the Willow Creek-Hunsinger Flat Road; northeast and northwest along the Willow Creek-Hunsinger Flat Road to the Adin-Madeline Road; southeast along the Adin-Madeline Road to Highway 395 at the town of Madeline; south along Highway 395 to the Madeline-Clarks Valley Road; east along the Madeline-Clarks Valley Road to the Clarks Valley-Tuledad Road; east and southeast along the Clarks Valley-Tuledad Road to the California-Nevada state line; south along the California-Nevada state line to the Lassen-Sierra county line; west along the Lassen-Sierra county line to the Lassen-Plumas county line; north and west along the Lassen-Plumas county line to Highway 36; west along Highway 36 to the Juniper Lake Road, to the point of beginning.

(2) Seasons:

(A) Period One of the general season shall open on the Saturday following the third Wednesday in August and continue for nine consecutive days. Period Two of the general season shall open on the first Saturday in September and continue for nine consecutive days.

(B) The archery only season shall open 14 days prior to the earliest general season and continue for nine consecutive days.

(3) Bag and Possession Limit: One pronghorn antelope in a license year.

(4) Number of License Tags:

(A) General Season: Period One: 46 buck tags and 0 doe tags. Period Two: 46 buck tags and 0 doe tags.

(B) Archery Only Season: 7 buck tags and 0 doe tags.

(e) Zone 5—Big Valley:

(1) Area: Those portions of Modoc, Lassen, Shasta and Siskiyou counties within a line beginning at the intersection of Highways 299 and 89; north and northwest along Highway 89 to the Bartle-Telephone Flat Road; northeast along the Bartle-Telephone Flat Road to the Iodine Prairie-Long Bell Road; southeast along the Iodine Prairie-Long Bell Road to the North Main RDad at Lang Bell Forest Service Station; northeast along the North Main Road and the Mud Springs-Mud Lake Road to Modoc County Road 91; south along Modoc County Road 91 to the Happy Camp—Cottonwood Flat Road; southeast along the Happy Camp-Cottonwood Flat Road to the Cottonwood Flat-Canby Bridge Road; southeast along the Cottonwood Flat-Canby Bridge Road to Highway 299; south along Highway 299 to the Hunters Rldge^Sweagert Flat Road near Lower Rush Creek Recreation Site; east and south along the Hunters Ridge-Sweagert Flat Road to the Sweagert Flat-Hunsinger Draw Road; south and west along the Sweagert Flat-Hunsinger Draw Road to the Adin-Madeline Road; southeast along the Adin-Madeline Road to the Hunsinger Flat-Willow Creek Road; southeast and southwest along the Hunsinger Flat-Willow Creek Road to Highway 139; northwest along Highway 139 to the Hayden Hill-Snag Hill Road; south and southwest along the Hayden Hill-Snag Hill Road to the Boyd Hill-Dixie Valley Road; southeast along the Boyd Hill-Dixie Valley Road to the Dixie Valley-Coyote Canyon Road; southeast along the Dixie Valley-Coyote Canyon Road to the State Game Refuge IS boundary; southeast along the State Game Refuge IS boundary to U.S. Forest Service Road 35N06; south and west along U.S. Forest Service Road 35N06 to U.S. Forest Service Road 22; west along U.S. Forest Service Road 22 to Highway 89 near the Hat Creek Ranger Station; north along Highway 89 to Highway 299, to the point of beginning.

(2) Seasons:

(A) The general season shall open on the Saturday following the third Wednesday in August and continue for nine consecutive days.

(B) The archery only season shall open 14 days prior to the earliest general season and continue for nine consecutive days.

(3) Bag and Possession Limit: One pronghorn antelope in a license year.

(4) Number of License Tags:

(A) General Season: 10 buck tags and 0 doe tags.

(B) Archery Only Season: 1 buck tags and 0 doe tags.

(f) Zone 6—Surprise Valley:

(1) Area: Those portions of Modoc and Lassen counties within a line beginning at the intersection of the crest of the Warner Mountains and the California-Oregon state line; east along the California-Oregon state line to the California-Nevada state line; south along the California-Nevada state line to the Tuledad-Clarks Valley Road; west and northwest along the Tuledad-Clarks Valley Road to the Clarks Valley-Long Valley Road; north on the Clarks Valley-Lang Valley Road to the South Warner Road; east along the South Warner Road to the Summit Trail near Patterson Guard Station; north along the Summit Trail to the crest of the Warner Mountains at Pepperdine Camp; north along the crest of the Warner Mountains to the California-Oregon state line to the point of beginning.

(2) Seasons:

(A) The general season shall open on the Saturday following the third Wednesday in August and continue for nine consecutive days.

(B) The archery only season shall open'14 days prior to the general season and continue for nine consecutive days.

(3) Bag and Possession Limit: One pronghorn antelope in a license year.

(4) Number of License Tags:

(A) General Season: 10 buck tags and 0 doe tags.

(B) Archery Only Season: I buck tags.

(g) Ash Creek Junior Pronghorn Antelope Hunt:

(1) Area: Those lands owned and managed by the **department** as the Ash Creek Wildlife Management Area.

(2) Season: The season shall open on the Saturday following the cbird Wednesday in August and continue for four consecutive days.

(3) Bag and Possession Limit: One pronghorn antelope in a license year.

(4) Number of License Tags: 2 either-sex tags.

(5) Special Conditions: Only persons possessing **valid** junior hunting licenses and junior hunt license tags may hunt during the junior pronghorn antelope hunt **season** and in the area specified on the tag. Tagholders **shall** be **accompanied** by a nonhunting, **licensed adult** chaperon 18 **years** of age or older **while** hunting; and **tagholdeTS** shall attend an orientation meeting the day **before** the opening day of the season.

(h) Honey Lake Junior Pronghorn Antelope Hunt:

(1) Area: That portion of Lassen County, including the Fleming and Dakin units of Honey Lake Wildlife Area, **within** a line beginning at the junction ofHighway 395 andLassen County Road A3 near Buntingville; northeast along County Road A3 to Mapes Lane (County Road 305); east and north along Mapes Lane to its junctions with Highway 395 approximately three **miles east** of Litchfield; east on Highway 395 to the junction of the Wendel-Flanigan Road (County Road 320); east and south on the Wendel-Flanigan Road to the Nevada state line; south on the Nevada state line to the Western Pacific-Union Pacific Railroad tracks near Herlong; west on the Western Pacific-Union Pacific Railroad tracks to the North Herlong Access Road (County Road A25); west and south along the north Herlong Access Road (County Road A25) to its **junction** with Highway 395; north and **west** on Highway 395 to the point of beginning.

(2) Season: The season shall open on the Saturday following the third Wednesday in August and continue for four consecutive days.

(3) Bag and Possession Limit: One pronghorn antelope in a license **year.**

(4) Number of License Tags: 2 either-sex tags.

(5) Special Conditions: Only persons possessing valid junior hunting licenses and junior hunt license tags may hunt during the junior pronghorn antelope hunt season and in the area specified on the tag. Tagho lders shall be accompanied by a noimunring, licensed adult chaperon 18 yean of age or older while hunting; and tagholders shall attend an orientation meeting the day before the opening day of the season.

(i) Fund-raising Hunt:

(1) Area: Those portions of Lassen, Modoc, Plumas, Shasta, and Siskiyou counties described as zones 1 through 6 in subsections 363(a) through (f).

(2) Season: The season for the Fund-Raising Hunt shall open on the Saturday before the first Wednesday in August and continue for 51 consecutive days.

(3) Bag and Possession Limit: One pronghorn antelope in a license year.

(4) Number of License Tags: 2 buck tags,

(j) Conditions:

(1) Pronghorn antelope license tags do not give the tagholders the right of entry onto privately-owned lands.

(2) Buck pronghorn antelope are defined as pronghorn antelope with homs longer than the ears. Doe pronghorn antelope are defined as pronghorn antelope with homs shorter than the ears. Either-sex pronghorn antelope are defined as buck or doe pronghorn antelope.

(3) Shooting time shall be from one-half hour before sunrise to one-half hour after sunset

(4) Method of take:

(A) The holder of any archery-only pronghorn antelope license tag may only take pronghorn antelope using archery equipment, as defined in Section 354 of these regulations.

(B) The holder of a general season, fund-raising hunt season, or junior hunt season license tag may take pronghorn antelope using legal firearms and archery equipment as described in sections 353 and 354 of these regulations.

(5) Any person taking any pronghorn antelope shall retain that portion of the head, which bean the homs during the open season and for 15 days thereafter/and shall produce it upon the demand of any officer authorized to enforce the provisions of these regulations.

(6) No person shall at any time capture or destroy any pronghorn antelope and detach or remove from the carcass only the head, hide or homs; nor shall any person at any time leave through carelessness or neglect any pronghorn antelope which is in his possession or any portion of the flesh thereof usually eaten by humans, to go needlessly to waste.

(•7) Prior to the acceptance or issuance of a pronghorn antelope license tag, all tagholders shall consent in writing to the terms and conditions set forth on the license tag.

fk) Pronghorn Antelope Tag Allocations Table.

§ 363 Pronghorn Antelope
Allocations - 2003

Hunt Area	*Archery—Only Season*		*General Season*			
			Period 1		*Period 2*	
	Buck	*Dae*	*Buck*	*Doe*	*Buck*	*Doe*
Zone 1	1	0	5	0	0	0
Zone 2	1	0	20	0	0	0
Zone 3	7	0	44	0	44	0
Zone 4	7	0	46	0	46	0
Zone 5	1	0	10	0	0	0
Zone 6	1	0	10	0	0	0
Ash Creek Junior Hunt	N/A		2 Ether-Sex		0	
Honey Lake Junior Hunt	N/A		2Either-•Sex		0	
Fund-Raising Hunt	N/A		2 Buck			

NOTE: Authority cited: Sections 219,220, 331, 1050 and 10502, Fish and Game Code. Reference: Sections 331, 713, 1050, 10500 and 10502, Fish and Game Code.

HISTORY

1. Amendment of subsections (e)-(g) Bled 5-31-88; operative 5-31-88 (Register 88, No. 23). For prior history, see Register 87, No. 27.
2. Amendment of subsections (e) and (0 Bled 6-19-89; operative 6-19-89 (Register 89, No. 27).
3. Amendment filed 6-22-90; operative 6-22-90 pursuant to section 215, Fish and Game Code (Register 90, No. 34).
4. Amendment of section Sled 6-28-91; operative 6-28-91 (Register 91, No. 42).
5. Amendment of subsections (a)(5), (bHf) and (g)(4) and NOTE Bled 7-8-92; operative 7-8-92 pursuant to Fish and Game Code section 215 (Register 92, No. 28).
6. Amendment filed 6-23-93; operative 6-23-93 pursuant to Fish and Game Code sections 202 and 215 (Register 93, No. 26).
7. Amendment filed 7-13-94; operative 7-13-94 pursuant to sections 202 and 215, Fish and Game Code (Register 94, No. 28).
8. Amendment of subsections (a)(9), (b)(2), (d), (e)(1) and NOTE filed 6-9-95; operative 6-9-95 pursuant to Government Code section 11343.4(d) (Register 95, No. 23).
9. Amendment filed 6-26-96; operative 7-1-96 pursuant to section 11343.4(d) (Register 96, No. 26).
10. Amendment of subsection (d), table, subsection (e)(1), new subsection (e)(2) designator, subsection renumbering, and amendment of newly designated subsection (e)(2) filed 6-26-97; operative 6-26-97 pursuant to Fish and Game Code sections 202 and 215 (Register 97, No. 26).
11. Amendment filed 7-1-98; operative 7-1-98 pursuant to Fish and Game Code sections 202 and 215 (Register 98, No. 27).
12. Amendment filed 6-2-99; operative 6-2-99 pursuant to Fish and Game Code sections 202 and 215 (Register 99, No. 23).
13. Amendment filed 6-27-2000; operative 6-27-2000 pursuant to Fish and Game Code sections 202 and 205 (Register 2000, No. 26).
14. Editorial correction of subsection (k)(2) (Register 2001, No. 10).
15. Change without regulatory effect amending subsections (k)(l)-(2) filed 3-7-2001 pursuant to section 100, tide 1, California Code of Regulations (Register 2001, No. 10).
16. Amendment of subsections (a)(4)(A), (j)(4)—Table and (k)(2) filed 5-21-2001; operative 6-1-2001 pursuant to Fish and Game Code sections 202 and 215 (Register 2001, No. 21).
17. Amendment filed 6-28-2002; operative 6-28-2002 pursuant to Fish and Game Code sections 202 and 215 (Register 2002, No. 26).
18. Amendment Bled 6-24-2003; operative 7-1-2003 pursuant to Government Code section 11343.4 (Register 2003, No. ***26).***

§ 364. Elk.

(a) Siskiyou Roosevelt Elk Hunt:

(1) Area: In that portion of Siskiyou County beginning at the junction of Interstate Highway 5 with the California-Oregon state line; east along the state line to Highway 97; southwest along Highway 97 to Siskiyou County Road A-12; west along Road A-12 to Interstate 5; north along Interstate 5 to the point of beginning.

(2) Season: The season shall open on Wednesday preceding the second Saturday in September and continue for 12 consecutive days.

(3) Bag and Possession Limit: 1 elk per season.

(4) Number of License Tags: 25 either-sex tags.

(b) Northeastern California Rocky Mountain Elk Hunt:

(1) Area: Those portions of Siskiyou, Modoc, Lassen, and Shasta counties within a line beginning at the junction of Highway 97 and the C^ifornia-Oregon state line; east along the California-Oregon state line to the California-Nevada state line; south along the California-Nevada state line to the Tuledad-Red Rock-Clarks Valley Road (Lassen County Roads 506, 512 and 510); west along the Tuledad-Red Rock-Clarks Valley Road to Highway 395 atMadeline; west on USDAForest Service Road 39N08 to Adin; west on Highway 299 to Interstate 5; north on Interstate 5 to Siskiyou County Road A-12; east along Siskiyou County Road A-12 to Highway 97; north on Highway -97 to the point of beginning.

(2) Season:

(A) The General Season shall open on the Wednesday preceding the third Saturday in September and continue for 12 consecutive days.

(B) The Archery Only Season shall open on the Wednesday preceding the first Saturday in September and continue for 12 consecutive days.

(3) Bag and Possession Limit: 1 elk per season.

(4) Number of License Tags:

2. Certificate of Compliance—sec. 11422.1, Gov. Code, Qled 1-26-70 (Register 71, No. 5).
3. Amendment of NOTE Sled 7-16-S1; effective thirtieth day thereafter (Register 81. No. 29).
4. Editorial correction of NOTE fried 9—20-85; effective thirtieth day thereafter (Register 85, No. 38).
5. New subsection Qo filed 10-19-87; operative 10-19-87 (Register 87, No. 43).
6. Amendment of subsection (b) Bled 11-4-93; operative 11-4-93 pursuant to Fish and Game Code sections 202 and 215 (Register 93, No. 45).
7. Change without regulatory effect amending subsections (g) and 0c) (5) filed 3-28-96 pursuant to section 100, title 1, California Code of Regulations (Register 96. No. 13).
8. Repealer of subsections (k)-(k)(7) filed 9-23-96; operative 9-23-96 pursuant to Fish and Game Code sections 202 and 215 (Register 96, No. 39).

§ 601. Enhancement and Management of Fish and Wildlife and their Habitat on Private Lands.

(a) Definition and Scope: A Private Lands Wildlife Habitat Enhancement and Management Area, (Herein after referred to as a Private Wildlife Management Area) is an area of private lands for which the landowner or their designee has completed and implemented a wildlife habitat enhancement and management plan that actively encourages the propagation, conservation and wise use of the fish and wildlife populations on their land. Such areas shall be licensed annually by the department.

(b) Application Process:

(1) Application Form and Management Plan: The applicant for a license to operate a Private Wildlife Management Areashall submit a complete application form to the Department of Fish and Game, at the appropriate regional office as listed on the application form. The applicant shall include three copies of a general management plan containing at least the following information:

(A) A legal description of the land to he included in the Private Wildlife Management Area. Four original USGS quadrangle maps or equivalent maps showing the boundaries of the Private Wildlife Management Area, access roads, any public lands within and/or adjacent to the Private Wildlife Management Area and all structures and facilities, shall be submitted with the original application;

(B) An estimate of the wildlife and habitats present within the Private Wildlife Management Area, including an indication of animal distribution and habitat condition based on the California Wildlife Habitat Relationships Database System;

(C) A statement of management objectives;

(D) A detailed description of proposed management actions that are intended to achieve the management objectives;

(E) The county General Plan land use designation for the Private Wildlife Management Area.

(2) Applicants shall be individuals or corporate landowners or their designee.

(3) Applications submitted by person(s) other than the landowner shall be approved and signed by the landowner^).

(4) License Fees: A nonrefundable fee shall be submitted with the application for a revocable Private Wildlife Management Area license. The fee will be based on the size of the Area as follows:

(A)	51,250	less than 5000 acres
(B)	51,800	5,001 to 10,000 acres
(C)	52,100	10,001 to 15,000 acres
(D)	52,400	greater than 15,001 acres

This application fee is established pursuant to Section 3402(b) of the Fish and Game Code. The Private Wildlife Management Area license shall be valid for five years during the period from July 1 through June 30, and subject to annual review and renewal by the Commission. The applicationfee covers the initial five-year license period. A fee shall be submitted, based on the size of the area, with the license renewal application at me beginning of each subsequent five year period. This license shall be in place of any other license that may be required of private landowners by the Fish and Game Code or regulations made pursuant thereto, This section shall not, however, be construed to exempt anyone from any requirement pertaining to hunting and sport fishing licenses and stamps.

The department will screen each application for compliance with these regulations. Applications that do not provide the information required. will be rejected and returned to the applicant. Any individual whose application has been rejected by the department may appeal that decision to the Commission. Applications accepted by the department will be forwarded for Commission review and approval.

(5) Issuance of Area License: Upon approval of the general management plan, the department, with approval of the Commission, shall issue a license for the taking of any fish, game bird or mammal in said Private Wildlife Management Area pursuant to the regulations of the Commission and the terms and conditions of the permit, which may supersede Fish and Game Code Section 331 (a) and fb) as it pertains to resident hunters and license tag fees for antelope, Section 332(b) and (c) as it pertains to resident hunters and license tag fees for elk, and sections 457-459, related to anterless and either sex deer.

(A) During the initial license year, the take of antelope or elk, will not be authorized, nor shall deer be taken except during the general open season, consistent with the bag and possession limits for the deer bunting zone in which the Area is located, unless otherwise stipulated by the Fish and Game Commission. This provision does not- apply to renewed licenses provided that the Private Wildlife Management Area has been continuously licensed in the Private Lands Wildlife Habitat Enhancement and Management Program. Upon satisfactory compledon of the first year management actions identified in the plan for the Private Wildlife Management Area, the Commission may authorize seasons and bag limits which differ from those established for the general seasons. Hunting must be consistent with the management plans prepared for that area or herd and should not result in an overall negative effect on the species population or herd being hunted as determined by the department.

(6) Annual Review: Annual renewal applications must be submitted to the department no later than March 1. The annual renewal application shall contain a summary of habitat enhancement and management activities, harvest, and full payment of fees for the preceding year. The department shall review each plan to determine that the licensee has fulfilled the obligations as prescribed in the management plan. The annual review shall evaluate the following:

(A) Results of activities carried out during the preceding year, including habitat improvement, wildlife production and population levels, hunter use and harvest of wildlife, including an accurate account of all hunting permits, seals and big game tags;

(B) Recommended changes in the general management plan,

(c) Tags and Seals:

(1) Possession of Tags and Seals: Every person hunting on a Private Wildlife Management Area shall have in their immediate possession a valid California hunting license and the appropriate tag or seal issued by a licensee or their authorized agent. Tags shall be filled out by hunters before hunting. The tags or seals shall permit hunting for the period specified, or undl revoked by the licensee or the department. Hunting permittees shall only take or possess those species and number of each species as specified by their hunting tags or seals as approved in the management plan: This does not apply to species not included in the management plan which may only be taken in accordance with the provisions of Part 2, Chapters 1-7, and 9 of these regulations and sections 4331 and 4332 of the Fish and Game Code. Hunting permittees while on the Private Wildlife Management Area shall be subject to all terms and conditions of the license.

(2) Tag and Seal Procedures:

(A) The department shall furnish each licensee with the appropriate tags or seals required by each management plan. With landowner approval and payment of the additional tag or seal fees, tags or seals issued by the licensee may be exchanged for a tag or seal for the same species far use on any other Licensed Private Wildlife Management Area for tbe take of the same species.

(B) Any deer hunteT who has been issued a deer tag or deer tag application by the department and wishes to hunt on a Private Wildlife Management Area shall exchange an unfilled public tag(s) or tag application(s) of the current license year for a Private Wildlife Management Area deer tag(s). These tags can only be used on a Private Wildlife Management

Area. In no event shall any hunting' permittee take more than two deer each year anywhere in California on either public or private lands. No person shall take more than one buck deer in the X-zones, as defined in Section 360(b), Title 14, CCR.

(C) Any pronghorn antelope hunter who has been issued a buck pronghorn antelope tag by the department and wishes to hunt on a Private Wildlife Management Area within the zone specified on the tag shall exchange an unfilled public buck pronghorn antelope tag of the current license year for a Private Wildlife Management Area buck pronghorn antelope tag. Any pronghorn antelope hunter who has been issued a doe pronghorn antelope tag by the department and wishes to hunt on a Private Wildlife Management Area within the zone specified on the tag shall exchange an unfilled public doe pronghorn antelope tag of the current license year for a Private Wildlife Management Area doe pronghorn antelope tag. In no case shall an exchange occur to allow pronghom antelope hunting outside the geographic zone or prescribed dates of the original tag, as contained in Section 363, Title 14. No hunter shall exchange a Private Wildlife Management Area pronghorn antelope tag for a public tag.

(D) Immediately upon killing any animal under the authority of the tag issued to them by the licensee, the hunter shall completely fill out the tag and attach it to the antler or hom of the male animal or to the ear of the female animal. Prior to transporting the carcass from the Private Wildlife Management Area, the hunter shall surrender the report card portion of the tag to the licensee or their designee. The hunter shall have the license tag validated pursuant to the provisions of Section 4341 of the Fish and Game Code and Section 708(a)(8), Title 14, CCR. The completed report card portion of the deer tag or any other species tag shall be returned to the department by the licensee on or before January 1. The license tag shall remain with the animal pursuant to sections 708(a)(3), 708(c)(4), 708(d)(4), Title 14, CCR.

(3) Tag and Seal Fees: The licensee shall pay the department the following fees for each tag and seal authorized annually:

(A) Buck Deer tag	$ 48
(B) Antlerless Deer tag	S 48
(C) Either-sex Deer tag	$ 48
(D) Pig tag	J 42
(E) Bear tag	5 42
(F) Bull Elk tag	$420
(G) Antlerless Elk tag	$ 300
(H) Buck Antelope tag	S 150
(I) Doe Antelope tag	S 90
(J) Turkey tag	$ 18
(K) Upland Game seals	S 00.90

(d) Operation of a Private Lands Wildlife Habitat Enhancement and Management Area:

(1) Posting: Private Wildlife Management Areas shall be posted by the licensee by placing signs which have been approved by the department and that forbid trespass. Signs shall be placed at intervals not less than three to the mile along exterior boundaries and at all roads and trails entering such lands. Where the area is bounded by land open to public hunting, posting shall be required with signs posted at intervals not less than eight to the mile. These signs shall identify both ingress to the Area and egress from the Area. Posting shall be completed no later than fourteen days prior to hunting within either the Area or adjacent public deer hunting zone, and maintained for the life of the license. Posting shall ensure that all boundaries are clearly marked and that no public access roads or areas appear to be closed.

(2) Records: The licensee shall maintain accurate records of all tags and seals and make such records available to the department upon request The licensee shall provide the department with the location of where records will be kept and available for inspection. An accurate accounting of all hunting tags and seals authorized shall be submitted to the Licenses and Revenue Branch, 3211 S Street in Sacramento, CA 95816, by March 1 of each year. Such accounting shall include the actual exchanged tags or applications provided by the individual hunters on each area. Each licensee shall pay for all the previous year's authorized tags and seals by March 1. In the event a licensee fails to remit all fees by March 1, the department may require full payment of all tags and seals prior to the next license year.

(e) Revocation of Licenses, Tags, and Seals:

(1) License: A Private Lands Wildlife Habitat Enhancement and Management Area license may be suspended temporarily by the Director, upon their verification of the facts, for a breach or violation of the terms of the license by the bolder thereof, or by any person acting under their direction or control or in cooperation with them. The Commission shall be notified of any such suspension and subsequently may revoke or reinstate the license or fix the period of suspension after written notice and a hearing at the next scheduled Commission meeting has been provided to the licensee by the Commission. Any licensee convicted of a violation of the Fish and Game Code or regulations made pursuant thereto or a violation of the terms and conditions of their license must appear before the Commission prior to the issuance of a new license.

(2) Tags and Seals: The licensee, their designee, or any employee of the department may revoke aPrivate Wildlife Management Area hunting tag or tags, seal or seals for a violation of any Fish and Game law or regulation or the terms and conditions of the Private Lands Wildlife Habitat Enhancement and Management Area license.

(f) Termination of License: a licensee may elect to terminate involvement with the Pri vate Lands Wildlife Habitat Enhancement and Management Program only after giving the Commission and the department ten days notice of their intent to withdraw. The licensee must submit a certified letter of intent to the Fish and Game commission and the nearest regional office of the Department of Fish and Game along with a full accounting of all tags and seals used, exchange tags received, and all fees due the department. Prior to the department receiving this notice and full accounting with fees due, the licensee must abide by the terms and conditions of the license issued pursuant to Section 3402 of the Fish and Game Code.

(g) No person shall violate any of the provisions of this section or any license issued pursuant thereto. Failure to comply therewith may result in:

(1) denial of application
(2) revocation of license and/or tags and seals
(3) citation under the provisions of the Fish and Game Code.

NOTE: Authority cited: Sections 200, 202, 203, 3402, 3404 and 3406, Fish and Game Code. Reference: Sections 3400-3404, 3406-3409, 4331^*332 and 4341, Fish and Game Code.

HISTORY

1. New section Bled 9—16—81; effective tiirnieth day thereafter (Register 81, No. 38).
2. New section refiled 9-17-81 as on emergency; effective upan filing (Register 8L, No. 38).
3. Certificate of Compliance filed 9-23-81 (Register 81, No. 38).
4. Repealer and new section Bled 6-7-82; effective thirtieth day thereafter (Register 82, No. 24).
5. Amendment of subsectinn (d)(2) Bled 6-17-83; effective thirtieth day thereafter (Register 83, No. 25).
6. Repealer and new section filed 8-16-84; effective upon filing pursuant to Government Code section 11346.2(d) (Register 84, No. 33).
7. Amendment Bled 4-8-87, operative 4-8-87 (Register 87, No. 15).
8. Amendment filed 2-10-89; operative 2-10-89 (Register 89. No. 8).
9. Editonal correction of subsectioo (b)(3) printing error (Register 89, No. 39). Ed. Note: The amendment Bled 2-10—89 increasing a non-refundable bceuse fee from S400 to S800 was inadvertently omitted during the production of Register 89, No. 8.
10. Editorial correction of printing error in subsection (b)(1) (Register 91, No. 31).
11. Amendment of section heading, subsections **(aHO** and NOTE, and new subsection (g) Bled 4-7-93; operative 4-7-93 (Register 93, No. 15).
12. Amendment of subsection (c)(2) filed 6-28-2002; operative 6-28-2002 pursuant to Fish and Game Code sections 202 and 215 (Register 2002, No. 26).
13. Amendment filed 6-10-2003; operative 6-10-2003 pursuant to Government Code section 11343.4 (Register 2003, No. 24).

Chapter 10. Areas Closed to Hunting

§ 625. Area Closed: Birds or Mammals.

For the purpose of facilitating the operation of the Sutter National Wildlife Refuge, it is unlawful to take birds or mammals by hunting on

(1) Petition Action Warranted.

(A) Listing. A species shall be listed as endangered or threatened, as defined in sections 2062 and 2067 of the Fish and Game Code, if the Conimission determines that its continued existence is in serious danger or is threatened by any one or any combination of the foUowing factors:

1. Present or threatened modification or destruction of its habitat;
Z Overexploitation;
3. Predation;
4. Competition;
5. Disease; or
6. Other natural occurrences or human-related activities.

(B) Delisting. A species may be delisted as endangered or threatened, as defined in sections 2062 and 2067 of the Fish and Game Code, if the Commission determines that its continued existence is no longer threatened by any one or any combination of the factors provided in subsection (i)(l)(A) above.

1. Status During Delisting Process. A threatened or endangered species petitioned for delisting shall retain its listed status throughout the delisting process.

2. Removal of Species. After the commission has determined that the petitioned action is warranted, a delisted species shall retain its listed status until 30 days after the Office of Administrative Law has approved the associated rulemaking file and filed the regulation change with the Secretary of State.

(C) Uplisting and Downlisting, A threatened species may be uplisted to endangered if its continued existence throughout all or a significant portion of its range is in serious danger of becoming extinct by any one or any combination of the factors listed in subsection (i)(l)(A) above. An endangered species may be downlisted to threatened if it is no longer in serious danger of becoming extinct but special protection and management are still required because of continued threats to its existence by any one or any combination of the factors listed in subsection (i)(l)(A) above.

(2) Petitioned Action Not Warranted. The commission shall enter its findings in the public records and the subject species shall revert to its status prior to the filing of the petition.

(j) Submission of Regulatory DocumenL The department shall prepare an Initial Statement of Reasons for Regulation Change (also called Pre-publication of Notice Statement), including an assessment of tbe potential for adverse economic impact pursuant to Government Code Sections 11346.5 and 11346.53, when listing, delisting or change in status is recommended in the Department's report prepared pursuant to subsection (f) of this section. This document shall be submitted to the commission staff at the commission meeting after final consideration of the petition if the commission makes a finding that the petitioned action is warranted.

NOTE: Authority died: Sections 2071 and 2071.5, Fish and dame Code. Reference: Sections 2062, 2067, 2071, 2071.5, 2072, 2072.3, 2072.7, 2073.3, 2073 J, 2074.2, 2074.4, 2074.6 and 2075.5, Fish and Game Code.

HISTORY

1. New sections filed 5-30-86; effective thirtieth day thereafter (Register 86, No. 22).
2. Amendment of subsection (a) filed 8-31-90; operative 9-30-90 (Register 90, No. 42).
3. Amendment of section and NOTE filed 8-29-94; operative 9-28-94 (Register 94, No. 35).

§ 670.2. Plants of California Declared to Be Endangered, Threatened or Rare.

The following species, subspecies and varieties of California native plants are hereby declared to be endangered, threatened (as denned by section 2067 of the Fish and Game Code) or rare (as defined by section 1901 of the Fish and Game Code), as indicated:

(a) Endangered:
(1) Agavaceae (Agave Family)
(A) *Nolina interrata* (Dehesa nolina)
(2) Amaryllidaceae (Amaryllis Family)
(A) *Brodiaea coronaria* ssp. *rosea* (Indian Valley brodiaea)
(B) *Brodiaea filifolia* (thread-leaved brodiaea)
(C) *Brodiaea insignis* CKaweah brodiaea)
(D) *Brodiaea pallida* (Chinese Camp brodiaea)
(3) Apiaceae (Carrot Family)
(A) *Eryngium aristulatum* var. *parishii* (San Diego button-celery)
(B) *Eryngium constancei* (Loch Lomond button-celery)
(C) *Eryngium racemosum* (Delta button-celery)
(4) Asteraceae (Sunflower Family)
(A) *Baccharis vanessae* fEncinitas baccharis)
(B) *Blennosperma bakeri* (Sonoma sunshine)
(C) *Cirsium dlialatum* (Ashland thisde)
(D) *Cirsium fontinale* var. *fonrinale* (fountain thistle).
(E) *Cirsium fontinale var. obispoense* (Chorro Creek bog thistle)
(F) *Eriophyllum latilobum* (San Mateo woolly sunflower)
(G) *Helianthus niveus* ssp. *tephrodes* (Algodones Dunes sunflower)
(H) *Hemizonia conjugens* (Otay tarplant)
(D *Hemizonia increscens* ssp. *villosa* (Gaviata tarplant)
(J) *Hemizonia mohavensis* (Mojave tarplant)
(K) *Holocarpha macradenia* (Santa Cruz tarplant)
(L) *Lasthenia burkei* (Burke's goldfields)
(M) *Layia camosa* (beach layia)
(N) *Lessingia germanorum* (San Francisco lessingia)
(O) *Pentachaeta b'ellidiflora* (white-rayed pentachaeta)
(P) *Pentachaeta tyonii* (Lyon's pentachaeta)
(Q) *Pseudobahia bahiifolia* (Hartweg's golden sunburst)
(R) *Pseudobahia peirsonii* (San Joaquin adobe sunburst)
(5) Berberidaceae (Barberry Family)
(A) *Berberis nevinii* (Nevin's barberry)
(B) *Berberis pinnata* ssp. *insularis* (island barherry)
(C) *Mahonia sonnei* (Truckee barberry)
(6) Boraginaceae (Borage Family)
(A) *Amsinckia grandiflora* (large-flowered fiddleneck)
(B) *Plagiabothrys diffusus* (San Francisco popcorn-flower)
(7) Brassicaceae (Mustard Family)
(A) *Arabis macdonaldiana* (McDonald's rock cress)
(B) *Caulanthus califarnicus* (California jewel-flower)
(C) *Erysimum capilatum* var. *angustatum* (Contra Costa wallflower)
(D) *Erysimum menziesii* (Menzies's wallflower)
(E) *Erysimum teretifolium* (Santa Cruz wallflower)
(F) *Rorippa subumbellaia* (Tahoe yellow cress)
(G) *Streptanthus niger* (Tiburon jewel-flower)
(H) *Thetypodium stenopetalum* (siender-petaled thelypodium)
(8) Cactaceae (Cactus Family)
(A) *Opuntia basilaris* var. *treleasei* (Bakersfield cactus)
(9) Campanulaceae (Bellflower Family)
(A) *Downingia concolor* var. *brevior* (Cuyamaca Lake downingia)
(10) Caryophyllaceae (Pink Family)
(A) *Arenaria paludicola* (marsh sandwort)
(B) *Silene campanulata* ssp. *campanulata* (Red Mountain catchfly)
(11) Chenopodiaceae (Goosefoot Family)
(A) *Atriplex rularensis* (Bakersfield smallscale)
(B) *Nitrophila mohavensis* (Amargosa nitrophila)
(12) Convolvulaceae (Morning-glory Family)
(A) *Calystegia stebbinsii* (Stebbins's morning-glory)
(13) Crassulaceae (Stonecrop Family)
(A) *Dudleya blochmanieae* ssp. *brevifolia* (short-leaved dudleya)
(B) *Dudleya traskiae* (Santa Barbara Island dudleya)
(C) *Parvisedum leiocarpum* (Lake County stonecrop)
(14) Cupressaceae (Cypress Family)
(A) *Cupressus abramsiana* (Santa Cruz cypress)
(15) Cyperaceae (Sedge Family)
(A) *Carex albida* (white sedge)
(16) Ericaceae (Heath Family)
(A) *Araostaphylos densiflora* (Vine Hill manzanita)
(B) *Araostaphylos hookeri* **3sp.** *hearstiorum* (Hearst's manzanita)
(C) *Arctostaphylos hookeri* ssp. *ravenii* (Presidio manzanita)
(D) *Arctostaphylos imbricata* (San Bruno Mountain manzanita)

(E) *Arctostaphyios pacifica* (Pacific manzanita)
(F) *Arctostaphyios pallida* (pallid manzanita)
(G) *Omithostaphylos oppositifolia* (Baja California birdbush)
(17) Fabaceae (Pea Family)
(A) *Astragalus agnicidus* (Humboldt milk-vetch)
(B) *Astragalus lentiginosis* **Yar.** *sesquimetralis* (Sodaville milk-vetch)
(C) *Astragalus magdalenae* var. *peirsonii* (Peirson's milk-vetch)
(D) *Astragalus pyenostachyus var. lanosissimus* (Ventura marsh milk-vetch)
(E) *Astragalus tener* var. *titi* (coastal dunes milk-vetch)
(F) *Lotus argophyllus* var. *adsurgens* (San Clemente Island bird's-foot trefoil)
(G) *Lotus argophyllus* var. niveiu (Santa Cruz Island bird's-foot trefoil)
(H) *Lotus dendroideus* var. *traskiae* (San Clemente Island locus)
(I) *Lupinus nipomensis* (Nipomo Mesa lupine)
(J) *Lupinus tidestromii* var. *tideslromii* (Tidestrom's lupine)
(K) *Trifolium trichocaiyx* (Monterey clover)
(18) Hydrophyllaceae (Waterleaf Family)
(A) *Eriadicryon altissimum* (Indian Knob mountainbalm)
(19) Lamiaceae (Mint Family)
(A) *Acanthomintha duttonii* (San Mateo thom-rnint)
(B) *Acanthomintha ilicifolia* (San Diego thom—mint)
(C) *Monardeila linoides* ssp. *viminea* (willowy monardella)
(D) *Pogogyne abramsii* (San Diego mesa mint)
(E) *Pogogyne clareana* (Santa Lucia mint)
(F) *Pogogyne nudiuscula* (Otay Mesa Mint)
(20) Liliaceae (Lily Family)
(A) *Fritillaria roderickii* (Roderick's fritillary)
(B) *Lilium occidentals* (western lily)
(C) *Lilium pardalinum ssp. pitldnense* (Pitkin Marsh lily)
(21) I.imnanthaceae (False Mermaid Family)
(A) *Limnanthes dougiasii* var. *sulphurea* (Point Reyes meadowfoam)
(B) *Limnanthes Jloccosa* ssp. *califomica* (Butte County meadowfoam)
(C) *Limnanthes gracilis* var. *parishii* (Parish's meadowfoam)
(D) *Limnanthes vinculans* (Sebastopol meadowfoam)
(22) Linaceae (Flax Family)
(A) *Hesperolinon didymocarpum* (Lake County western flax)
(23) Malvaceae (Mallow Family)
(A) *Malacothamnus clementinus* (San Clemente Island bush mallow)
(B) *Malacothamnus fasciculatus* var. *nesioticus* (Santa Cruz Island bush mallow)
(C) *Sidalcea covillei* (Owens Valley checkerbloom)
(D) *Sidalcea oregana* ssp. *valida* (Kenwood Marsh checkerbloom)
(E) *Sidalcea pedaia* (bird-foot checkerbloom)
(F) *Sidalcea stipuiaris* (Scadden Flat checkerbloom)
(24) Onagraceae (Evenmg-primrose Family)
(A) *Clarkia franciscana* (Presidio ciarkia)
(B) *Clarkia imbricata* (Vine Hill clarkia)
(C) *Clarkia lingulata* (Merced ciarkia)
(D) *Clarkia springvillensis* (Springville clarkia)
(E) *Oenothera deltoides* ssp. *howellii* (Antioch dunes evening-primrose)
(25) Poaceae (Grass Family)
(A) *Dichanthelium lanuginosum* var. *thermale* (Geysers dichanthelium)
(B) *Neostapfia colusana* (Colusa grass)
(C) *Orcuttia califomica* (California Orcutt grass)
(D) *Orcuttia inaequaiis* (San Joaquin Valley Orcutt grass)
(E) *Orcuttia pilosa* (hairy Orcutt grass)
(F) *Orcuttia tenuis* (slender Orcutt grass)
(G) *Orcuttia viscida* (Sacramento Orcutt grass)
(H) *Poa napensis* (Napa blue grass)
(!) Tuctoria mucronata (Crampton's tuctoria)
(26) Polemoniaceae (Phlox Family)
(A) *Eriastrum densifolium* ssp. *sanctorum* (Santa Ana River woollystar)
(B) *Navarretia leucocephala* ssp. *plieantha* (many-flowered navarretia)
(C) *Phlox hirsuta* (Yreka phlox)
(27) Polygonaceae (Buckwheat Family)
(A) *Chorizanthe orcuttiana* (Orcutt's spineflower)
(B) *Chorizanthe parryi vzx.femandina* (San Fernando Valley spineflower)
(C) *Chorizanthe valida* (Sonoma spineflower)
(D) *Dodecahema leptoceras* (slender—homed spineflower)
(E) *Eriogonum alpinum* (Trinity buckwheat)
(F) *Eriogonum apricum* var. *apricum* (lone buckwheat)
(G) *Eriogonum apricum* var. *prostratum* (Irish Hill buckwheat)
(H) *Eriogonum ericifolium* var. *thomei* (Thome's buckwheat)
(I) *Eriogonum grande* ssp. *timorum* (San Nicholas Island buckwheat)
(J) *Eriogonum kelloggii* (Kellogg's buckwheat)
(28) Ranunculaceae (Buttercup Family)
(A) *Delphinium variegatum* ssp. *kinkiense* (San Clemente Island larkspur)
(29) Rhamnaceae (Buckthorn Family)
(A) *Ceanothus ophicochilus* (Vail Lake ceanothus)
(30) Rosaceae (Rose Family)
(A) *Cercocarpus traskiae* (Cataiina Island mountain-mahogany)
(B) *Potentilla hickmanii* (Hickman's cinquefoil)
(C) *Rosa minurifolia* (small-leaved rose)
(31) Rubiaceae (Madder Family)
(A) *Galium calalinense* ssp. *acrispum* (San Clemente Island bedstraw)
(32) Saxifragaceae (Saxifrage Farnily)
(A) *Lithophragma maximum* (San Clemente Island woodland star)
(33) Scrophulariaceae (Figwort Family)
(A) *Castilleja campesiris* ssp. *succulenta* (succulent owl' s-ciover)
(B) *Castilleja grisea* (San Clemente Island Indian paintbrush)
(C) *Castilleja uliginosa* (Pitkin Marsh Indian paintbrush)
(D) *Cordylanthus maritimus* sap. *maritimus* (salt marsh bird's-beak)
(E) *Cordylanthus palmatus* (palmate-bracted bird's-beak)
(F) *Cordylanthus rigidus* ssp. *littoralis* (seaside bird's-beak)
(G) *Crariola heterosepala* (Boggs Lake hedge-hyssop)
(b) Threatened:
(1) Amaryllidaceae (Amaryllis Family)
(A) *Allium munzii* (Munz's onion)
(2) Asteraceae (Sunflower Family)
(A) *Cirsium loncholepis* (La Graciosa thistie)
(B) *Cirsium rhothophilum* (surf thisde)
(C) *Hazardia orcuttii* (Orcutt's hazardia)
(D) *Verbesina dissita* (crownbeard)
(3) Boraginaceae (Borage Family)
(A) *Plagiobothrys strictus* (Calistoga popcom-flower)
(4) Brassicaceae (Mustard Family)
(A) *Dithyrea maritima* (beach spectaclepod)
(B) *Rorippa gambellii* (Gambel's water cress)
(5) Crassulaceae (Stonecrop Family)
(A) *Dudleya stolonifera* (Laguna Beach dudleya)
(6) Fabaceae (Pea Family)
(A) *Astragalus clarianus* (Clara Hunt's milk-vetch)
(B) *Lupinus citrinus* var. *deflexus* (Mariposa lupine)
(C) *Lupinus milo-bakeri* (Milo Baker's lupine)
(7) Liliaceae (Lily Family)
(A) *Calochortus tiburvnensis* (Tiburon mariposa lily)
(B) *Fritillaria striata* (striped adobe-lily)
(8) Linaceae (Flax Farnily)
(A) *Hesperolinon congestum* (Marin western flax)
(9) Philadelphaceae (Mock Orange Family)
(A) *Carpenteria califomica* (tree-anemone)
(10) Poaceae (Grass Family)

(A) *Pleuropogon hooverianus* (North Coast semaphore grass)
(11) Polemomaceae (Phlox Family)
(A) *Cilia tenuiflora* ssp. *arenaria* (sand gilia)
(B) *Navarretia leucacephala* ssp. *pauciflora* (few-flowered navarretia)
(12) Polygonaceae (Buckwheat Family)
(A) *Chorizanthe howeilii* (Howell's spineflower)
(13) Scrophulariaceae (Figwort Family)
(A) *Castilleja affinis* spp. *neglecta* (Tiburon Indian pamtbrush)
(14) Verbenaceae (Vervain Family)
(A) *Verbena califomica* (California vervain)
(c) Rare:
(1) Arnaryllidaceae (Amaryllis Family)
(A) *Allium yosemitense* (Yosemite onion)
(B) *Bloomeria humilis* (dwarf goldenstar)
(2) Apiaceae (Carrot Family)
(A) *Lilaeopsis masonii* (Mason's lilaeopsis)
(B) *Sanicula maririma* (adobe sardcle)
(C) *Sanicula saxatilis* (rock sanicle)
(3) Asteraceae (Sunflower Family)
(A) *Blennosperma nanum* var. *rabustum* (Point Reyes blennosperma)
(B) *Eriophyllum congdonii* (Congdon's woolly sunflower)
(C) *Hemizonia arida* (Red Rock tarplant)
(D) Hemizonia minthomii (Santa Susanna tarplant)
(E) *Machaeranthera lagunensis* (Mount Laguna aster)
(F) *Senecio ganderi* (Gander's ragwort)
(G) *Senecio layneae* (Layne's ragwort)
(4) Boraginaceae (Borage Family)
(A) *Cryptantha roosiorum* fbristlecone cryptantha)
(5) Brassicaceae (Mustard Family)
(A) *Caulanthus stenocarpus* (slender-pod jewel-flower)
(6) Campanuiaceae (Bellflower Family)
(A) *Nemacladus twisselmannii* (Twisseimann's nemacladus)
(7) Crassulaceae (Stonecrop Family)
(A) *Dudleya cymosa* ssp. *marcescens* (marcescent dudleya)
(B) *Dudleya nesiotica* (Santa Cruz Island dudleya)
(8) Cyperaceae (Sedge Family)
(A) *Carex tompkinsii* (Tompkins's sedge)
(9) Ericaceae (Heath Family)
(A) *Arctostaphylos bakeri* (Baker's manzanita)
(B) *Arctostaphylos edmundsii* var. *parvifolia* (Hanging Gardens manzanita)
(10) Euphorbiaceae (Spurge Family)
(A) *Croton wigginsii* (Wiggins's croton)
(11) Fabaceae (Pea Family)
(A) *Astragalus johannis-howellli* (Long Valley milk-vetch)
(B) *Astragalus monoensis* var. *monoensis* (Mono milk-vetch)
(C) *Astragalus traskiae* (Trask's. milk-vetch)
(D) *Lupinus padre-crowleyi* (Father Crowley's lupine)
(E) *Thermopsis macrophylla* var. *agnina* (Santa Ynez false lupine)
(F) *Trifolium polyodon* (Pacific Grove clover)
(12) Hydrophyllaceae CWaterleaf Family)
(A) *Eriodictyon capitatum* (Lompoc yerba santa)
(13) Liliaceae (Lily Family)
(A) *Calochortus dunnii* (Dunn' s mariposa lily)
(B) *Calochortus persistens* (Siskiyou mariposa lily)
(C) *Chlarogalum purpureum* var. *reduction* (Camatta Canyon amole)
(14) Limnanthaceae (False Mermaid Family)
(A) *Limnanthes bakeri* (Baker's meadowfoam)
(15) Malvaceae (Mallow Family)
(A) *Sidalcea hickmanii* ssp. *anomala* (Cuesta Pass checkerbloom)
(B) *Sidalcea hickmanii* ssp. *parishii* (Parish's checkerbloom)
(16) Onagraceae (Evemng-primrose Family)
(A) *Clarkia speciosa* ssp. *immaculata* (Pismo clarkia)
(B) *Oenothera califomica* ssp. *eurekensis* (Eureka Dunes evening-primrose)
(17) Poaceae (Grass Family)
(A) *Agrostis blasdalei* var. *marinensis* (Marin bent grass)
(B) *Calamagrostis faliosa* (leafy reed grass)
(C) *Swallenia alexandrae* (Eureka Valley dune grass)
(D) *Tuctoria greenei* (Greene's tuctoria)
(18) Polemomaceae (PUox Family) . •
(A) *Eriastrum tracyi* (Tracy's eriastrum)
(19) Polygonaceae (Buckwheat Family)
(A) *Dedeckera eurekensis* (July gold)
(B) *Eriogonum but lerv/0 rthianum* (Butterworth's buckwheat)
(C) *Eriogonum crocatum* (Conejo buckwheat)
(D) *Eriogonum giganteum* var. *compactum* (Santa Barbara Island buckwheat)
(E) *Eriogonum twisselmannii* (Twisseimann's buckwheat)
(20) Portulacaceae (Purslane Family)
(A) *Lewisia congdonii* (Congdon's lewisia)
(21) Ranunculaceae (Buttercup Family)
(A) *Delphinium bakeri* (Baker's larkspur)
(B) *Delphinium hesperium* ssp. *cuyamacae* (Cuyamaca larkspur)
(C) *Delphinium luteum* (yellow larkspur)
(22) Rhamnaceae (Buckthorn Family)
(A) *Ceanothus hearstiorum* (Hearst's ceanothus)
(B) *Ceanothus maritimus* (maritime ceanothus)
(C) *Ceanothus masonii* (Mason's ceanothus)
(D) *Ceanothus roderickii* (Pine Hill ceanothus) [1] „
(23) Rosaceae (Rose Family)
(A) *Ivesia callida* (Tahquitz ivesia)
(24) Rubiaceac (Madder Family)
(A) *Galium angustifolium* ssp. *borregoense* (Borrego bedstraw)
(B) *Galium buxifolium* (box bedstraw)
(C) *Galium californicum* ssp. *sierrae* (El Dorado bedstraw)
(25) Saxifragaceae (Saxifrage Family)
(A) *Bensoniella oregona* (bensoniella)
(26) Scrophulariaceae (Figwort Family)
(A) *Castilleja gleasonii* (ML Gleason Indian paintbrush)
(B) *Cordylanthus mollis* ssp. *mollis* (soft bird's-beak)
(C) *Cordylanthus nidularius* (ML Diablo birds-beak)
(D) *Cordylanthus tenuis* ssp. *capiUaris* (Pennell'3 bird's-beak)
(E) *Holmgrenanthe petrophila* (rock lady)
fF) *Pedicularis dudleyi* (Dudley's lousewort)
(27) Sterculiaceae (Cacao Family)
(A) *Fremontodendron decumbens* (Pine Hill flannelbush)
(B) *Fremontodendron mexicanum* (Mexican flannelbush)

NOTE: Authority cited: Sections 1904 and 2070, Fish and Game Code. Reference: Sections 1755, 1904,2062,2067,2070,2072.7 and 2075.5, Fish and Game Code.

HISTORY

1. New section filed 10-11-78; effective tliiitieth day thereafter (Register78, No. 41).
2. Amendment of subsections (a)(10), fb)(10), **(b)**(17) and new subsections (a)(12Ha)(27) and **(b)**(19)-fb)(21) filed 6-11-79; effective thirtieth day thereafter (Register 79, No. 24).
3. Amendment filed 8-9-79; effective thirtieth day thereafter (Register 79, No. 32).
4. Amendment filed 10-17-79; effective thirtieth day thereafter (Register 79, No. 42).
5. Repealer and new section Sled 7-16-81; effective thirtieth day thereafter (Register 81, No. 29).
5. Amendment of subsections (a)(2Ha)(4), (a)(10), (a)(16), (a)(17). (a)(20) and (a)(26) filed 12-18-81; effective thirtieth day thereafter (Register 81, No. 51).
7. New subsections (a)(7)(D), (a)(14)(E) and (F), (a)(18)(Q, (a)(20)(E) and (F), (a)(25)fB), (a)(26)(H), (a)(27) and (a)(28) filed 1-13-82; effective thirtieth day hereafter (Register 82, No. 3).
8. New subsections (a)(4)(H), (a)(7)(E). (a)(14)(G) and (H), (a)(l8)(D), (a)(24)(F), (a)(29Ha)(3t) filed 3-17-82; effective thirtieth day thereafter (Register 82, No. 12).
9. Amendment of subsection (a)(26) and new subsections (b)(2)(C), fb)(3)(F)-(H), **(b)**(16)(F), (b)(20)(F), **(b)**(2l)**(B),** and (b)(24)-(27) filed 6-4-82; effective thirtieth day thereafter (Register 82, No. 23).
10. New subsections (b)(1)(B), (b)(3)(E), (b)(9)(F) and (G), (b)(ll)(C), (b)(14)(C), **(b)**(17)(C), (b)(18)(D), **(b)**(20)(E), and **(b)**(22) and (23) filed 6-4-82; effective thirtieth day mereafter (Register 82. No. 23).
11. Amendment of subsection (a)(3) and new subsection (a)(26)(H) filed 4-20-84; effective thirtieth day thereafter (Register 84, No. 16).
12. Editorial correction filed 7-20-84 (Register 84, No. 29).

13. Amendment filed 8-3-84; effective thirtieth day thereafter (Register 84. No. 31).
14. Editorial correction of NOTE filed 9-20-B5; effective thirtieth day thereafter (Register 85, No. 38).
15. Amendment filed 5-30-86; effective thirtieth day mcreafter (Register 86, No. 22).
16. Amendment of subsection (a), relettering and amendment of fonnersubsection (b) to subsection (c), and new subsection (b) filed 1-16-87; effective upon filing pursuant to Fish and Game Code section 215 (Register 87, No. 4).
17. Amendment of subsections (a)(17) and (b)(3) filed 2-26-88; operative 3-27-88 (Register 88, No. 13).
18. Amendment of subsection (a) filed 10-23-89; operative 11-22-89 (Register 89, No. 43).
19. Editorial correction of printing error inadvertently omitting text (Register 90, No. 38).
20. Renumbering; former (a)(8) through (a)(25) to (a)(ll) through (a)(28) respectively; former (a)(26), (27), (28), (29), (30), (31); lo (a)(32), (9), (31), (10), (29) and (30) respectively; renumbering (a)(25)(A) to (a)(29)(C); relettering farmer (n)(25)(B) to (a)(28)(A); renumbering (b)(lM5) to (b)(5), (6), (7), (9), (10) respectively; adding new (a)(4)(KMN), (a)(7)(H), (a)(8), (a)(8)(A), (a)(10)(B), (a)(13)(Q, (a)(27)(I), (b)(1), (b)(1)(A), (b)(2), (b)(2)(AHC), (b)(3), (b)(3)(A), (b)(4), (b)(4)(AMB), (b)(6)(B)-(C), (b)(8), (b)(8)(A), (b)(9)(B), (b)(ll), (b)(lI)(A); nonsubstantive spelling corrections at (a)(4)(G), (J), (a)(5)(C), (a)(6)(B), (a)(7)(A), (E), (F), (a)(17)(B), (E), (G), (a)(18)(B), (a)(19)(A), (E), (a)(23)(A), (E), (a)(25)(B), (a)(32)(A), (F), (b)(7)(A), (c)(1)(A), (c)(3)(F), (c)(9)(A), (C), (E), (F), (c)(l l)(A), (C), (c)(15)(A), (B); correction of printing error repeating (a)(5), (a)(5)(A), (a)(4), (a)(4)(A)-(J) filed 10-9-90; operative 11-8-90 (Register 90, No. 45).
21. New subsection (a)(4)(0) filed 4-7-92; operative 5-7-92 (Register 92, No. 15).
22. New subsections (a)(4)(P}-(Q) and subsection (b)(8)(A) and renumbering Bled 12-1-92; operative 12-31-92 (Register92, No. 49).
23. New subsection (a)(4)(B) and subsection relettering filed 6-11-93; operative 7-12-93 (Register 93, No. 24).
24. New subsection (a)(29) and subsection renumbering Bled 12-28—93; operative 1-27-94 (RegistBT 93, No. 53).
25. New subsections (b)(13Hb)(13)(A) Bled 7-14-94; operative 8-15-94 (Register 94, No. 28).
26. Editorial correction relocating subsection (b)(8)(B) to (b)(7)(B) (Register 94, No. 28).
27. Change without regulatory effect amending subsections (a)(4)(H), (a)(4)(J), (a)(13)(B), (a)(17)(C), (a)(17)(F), (a)(19)(A), (a)(2Z)(A), (a)(25)(A), (a)(27)(G), (a)(28)(A), (a)(33)(D). (a)(33)(G), (b)(1)(A), (b)(6)(C), (b)(8)(A). (c)(3)(D), (c)(3)(G), (c)(5)(A), (c)(9)(B) and (c)(14)(B)filed 2-10-95 pursuant to section 100, title 1, California Code of Regulations (Register 95, No. 6).
28. Change without regulatory effect amending subsections (a)(26)(A), (b)(10)(B) and (b)(12)(A) filed 10-3-95 pursuant to section 100. title 1, California Code of Regulations (Register 95, No. 40).
29. Change without regulatory effect amending subsections (a)(5)(A) and(C) and (a)(20)(B) filed 8-20-98 pursuant to section 100, title 1, CaUfomia Code of Regulations (Register 98, No. 34).
30. Change without regulatory effect amending section and **NOTE** Bled 6-7-2000 pursuant to section LOO, title 1, California Code of Regulations (Register 2000, No. 44).
31. New subsection (a)(17)(D) and subsection relettering filed 11-7-2000; operative 12-7-2000 (Register 2000, No. 45).
32. New subsection (a)(16)(G) filed 4-4-2002; operative 4-4-2002 pursuant to Government Code section 11343.4 (Register 2002, No. 14).
33. New subsection (a)(27)(B) and subsection relettenng filed 8-9-2002; operative 9-8-2002 (Register 2002, No. 32).
34. New subsection (b)(2)(C) and subsection relettering filed 12-26-2002; operative 1-25-2003 (Register 2002, No. 52).
35. New subsections (b)(10)-(b)(10)(A), repealer of subsection (c)(17)(C) and subsection renumbering and relettering filed 12-30-2002; operative 1-29-2003 (Register 2003, No. 1).

§ 670.5. Animals of California Declared to Be Endangered or Threatened.

The following species and subspecies are hereby declared to be endangered or threatened, as indicated:

(a) Endangered:
(1) Crustaceans:
(A) California freshwater shrimp *(Syncaris pacifica)*
(B) Shasta crayfish *(Pacifastacus fords)*
(2) Fishes:
(A) Bull trout *(Salvelinus confluentus)*
(B) Mohave cui chub *(Gila bicolor mohavensis)*
(C) Owens tui chub (*Gila bicolor snyderi)*
(D) Bonytail (Gila *elegans)*
(E) Colorado squawfish *(Ptychocheilus lucius)*
(F) Lost River sucker *(Deltistes luxatus)*
(G) Modoc sucker (*Catostomus microps)*
(H) Shonnose sucker (*Chasmistes brevirostris)*
(T) Razorback sucker *(Xyrauchen lexanus)*
(J) Desert pupfish (*Cyprinodon macularius)*
(K) Owens pupfish (*Cyprinodon radiosus)*
(L) Unarmored threespine stickleback *(Gaslerosteus aculeaius wiliam soni)*
(M) Winter run Chinook salmon *(Oncorhynchus tshawytscha)*
(N)'Coho salmon *(Oncorhynchus kisutch)* south of San Francisco Bay.
(3) Amphibians:
(A) Santa Cruz long-toed salamander *(Ambysioma macrodactylumcroceumj*
(B) Desert slender salamander *(Batrachaseps aridus)*
(4) Reptiles:
(A) Coachella Valley fringe-toed lizard (tVma *inomata)*
(B) Blunt-nosed leopard lizard *(Gambelia silus)*
(C) San Francisco garter snake *(Thamnophis sirtalis tetrataenia)*
(5) Birds:
(A) California brown pelican *(Pelecanus occidemalis califomicus)*
(B) California condor *(Gymnogyps califomianus)*
(C) Bald eagle *(Haliaeetus leucocephalus)*
(D) American peregrine falcon *(Falco peregrinus anatum)*
(E) California clapper rail *(Ratios longiraslris obsoletus)*
(F) Light-footed clapper rail *(Rallus lon'giroslris levipes)*
(G) California least tern *(Slema andllarum browni)*
(H) Western yellow-billed cuckoo *(Coccyzus americanus occidental's)*
(I) Elf owl *(Micrathene whimeyi)*
(J) Great gray owl *(Strix nebulosa)*
(K) Least Bell's vireo *(Vireo bellii pusillus)*
(L) Inyo California townee *(Pipilo crissalis eremophilus)*
(M) Willow flycatcher *(Empidonax traillii)*
(N) Arizona Bell's vireo *(Vireo bellii arizonae)*
(0) Gila woodpecker *(Melanerpes uropygialisj*
(P) Gilded northern flicker (*Colaptes auratus chrysoides)*
(Q) Belding's savannah sparrow *(Passerculus sandwichensis beldingii)*
(R) Marbled murrelet *{Brachyramphus marmoralus)*
(6) Mammals:
(A) Riparian brush rabbit *(Sylvilagus bachmani riparius)*
(B) Morro Bay kangaroo rat *(Dipodomys heermanni morroensis)*
(C) Giant kangaroo rat *(Dipodomys ingens)*
(D) Tipton kangaroo rat *(Dipodomys nitriloides nilratoides)*
(E) Fresno kangaroo rat *(Dipodomys nitritoides exilis)*
(F) Salt-marsh harvest mouse *(Reithrodontomys raviventris)*
(G) Amargosa vole *(Microlus califomicus scirpensis)*
(H) California bighorn sheep *(Ovis canadensis califomiana)*
(b) Threatened;
(1) Gastropods:
(A) Trinity bristle snail *(Monadenia seiosa)*
(2) Fishes:
(A) Delta smelt *(Hypomesus transpacificus)*
(B) Cottonball Marsh pupfish (*Cyprinodon salinus milleri)*
(C) Rough sculpin *(Cottus asperrimus)*
(D) Spring—run chinook salmon *(Oncorhynchus tshawytscha)* of the Sacramento River drainage.
(3) Amphibians:
(A) Siskiyou mountain salamander (*Plelhodon stormi)*
(B) Kern Canyon slender salamander *(Batrachaseps simatus)*
(C) Tehachapi slender salamander *(Batrachoseps stebbinsi)*
(D) Limestone salamander *(Hydromantes brunus)*
(E) Shasta salamander *(Hydromantes shastae)*
(F) Black toad *(Bufo exsul)*
(4) Reptiles:
(A) Desert tortoise *(Copherus agassizzi)*
(B) Barefoot banded gecko (*Coleonyx switaki)*
(C) Southern rubber boa (*Charina botlae umbratica)*

(D) Alameda whipsnake *(Masticophis lateralis euryxanthus)*
(E) Giant garter snake *(Thamnophis cauchi gigas)*
(5) Birds:
(A) Swainson's hawk *(Buteo svuainsoni)*
(B) California black rail *(Laterallus jamaicensis cotumiculus)*
(C) Yuma clapper rail *(Rallus longirostris yumanensis)*
(D) Greater sandhill crane *(Cms canadensis tabida)*
(E) Bank swallow *(Riparia riparia)*
(6) Mammals:
(A) Mohave ground squirrel *[Spermohilus mohavensis)*
(B) San Joaquin antelope squirrel *(Ammospermophilus nelsoni)*
(C) Stephens' kangaroo rat *(Dipodomys stephensi)*
(D) Sierra Nevada red fox *(Vulpes vulpes necator)*
(E) San Joaquin kit fox *(Vulpes macrotis mutica)*
(F) Island fox f *Urocyon litloralis)*
(G) Wolverine *(Gulo gulo)*
(H) Guadalupe fur seal *(Arclocephalus lownsendi)*
(T) Peninsular bighorn sheep *(Ovis canadensis cremnobates)*

NOTE: Authority cited: Sections 2070 and 20755, Fish and Game Code. Reference: Sections 1755,2055, 2062,2067, 2070, 2072.7, 2075J and 2077, Fish and Game Code.

HISTORY

1. New section filed 5-2B-71; effective thirtieth day thereafter (Register 71, No. 22).
2. Amendment of subsections (a)(1), (a)(3) and (b)(3) filed 12-11-73; effective thirtieth day thereafter (Register 73, No. 50).
3. Amendment of subsections (a)(1) and (b)(1) filed 1-23-78; effective thirtieth day thereafter (Register 78, No. 4).
4. Amendment filed 9-2-80; effective thirtieth day thereafter (Register 80, No. 36).
5. Editorial correction of subsection (b) (Register 80, No. 41).
6. Editorial correction of **NOTE** and **HISTORY** 4. (Register 80, No. 51).
7. Repealer and new section filed 7-16—81; effective thirtieth day thereafter (Register 81, No. 29).
8. Amendment of subsection (b)(6) filed 3-18—83; effective thirtieth day thereafter (Register 83, No. 12).
9. Amendment filed 5-30-86; effective thirtieth day thereafter (Register 86, No. 22).
10. New subsections (a)(5)(MMO) filed 2-16-88; operative 3-17-88 (Regisrer 88. No. 9).
11. Amendment filed 2-26-88; operative 3-27-88 (Register 88. No. 13).
12. Relettering of former subsections (a)(6)(C)-(a)(6)(E) to subsections (a)(6)(DMa)(6)(F) and new subsections (a)(6)(C) and (b)(5)(E) filed 5-12-89; operative 6-11-89 (Register 89, No. 20).
13. Amendment of subsection (b)(4) filed 8-3-89; operative 8-3-89 pursuant to Government Code section 11346.2(d) (Regisier 89, No. 32).
14. New subsection (a)(2)(M) filed 9-22-89; operative 9-22-89 pursuant to Government Code section 11346.2(d) (Register 89, No. 39).
15. Reordering of subsections (a)(5)(K>-0P) and new subsection (a)(5)(Q) filed 12-3-90; operntive 1-2-91 (Register 91, No. 3).
16. Editorial correction of printing error in subsections (a)(2)(E) and (a)(5)(0) and (P) (Register 91, No. 31).
17. New subsection (a)(5)(R) filed 3-12-92 as an emergency; operative 4-13-92 (Register 92, No. 12),
18. Adoption of subsection (h)(2)(A) and subsection relettering Bled 11-9-93; operative 12-9-93 (Register 93, No. 46).
19. Repealer of subsection (b)(6)(A) and subsection redesignation fried 4-20-94; operative 5-20-94 (Register 94, No. 16).
20. New subsection (a)(6)(A), subsection redesignation and amendment of **Note** filed 4-29-94; operative 5-30-94 (Register 94, No. 17).
21. New subsection (a)(2)(N) filed 12-1-95; operative 12-31-95 (Regisier 95, No. 48).
22. New subsection *(b)(2)(D)* Hied 1-6-99; operative 2-5-99 (Register 99, No. 2).
23. New subsection (a)(6)(H), repealer of subsection (b)(6)(H) and subsection relettering filed 3-23-99 as an emergency; operative 3-23-99 (Register 99, No. 13). A Certificaie of Compliance must tie ttansmitted to OAL by 7-21-99 or emergency language will be repealed by operation of law on the following day.
24. Certificaie of Compliance as to 3-23-99 order, including amendment of subsection (a)(6)(H), transmitted to OAL 7-16-99 and filed 8-27-99 (Register 99, No. 35).
25. Change without regulatory effect adding subsection (b)(6)(A) and relettering subsections filed 12-13-2001 pursuant to section 100, title 1, California Code of Regulations (Register 2001, No. 50).

5 670.6. Commission Policy on Monitored Species.

It is the policy of the corrirnission that the department shall monitor and report on the impact of ongoing management efforts for and the status of species or subspecies listed herein that were previously considered for candidacy or listing by the cornmission. The commission may reconsider listing any of these species or subspecies at any time based upon a new petition submitted pursuant to sections 2071 or 2072.7 of the Fish and Game Code. Any petition implemented pursuant to this section will be considered by the commission in accordance with procedures set forth in Article 2, Chapter 1.5, of the Fish and Game Code (California Endangered Species Act).

(a) Monitored Species and Subspecies. Note: There are no species currently listed.

NOTE: Authority cited: Section 703, Fish and Game Code. Reference: Sections 703, 2071 and 2072.7, Fish and Game Code.

HISTORY

1. New section filed 8-29-96; operative 9-28-96 (Register 96, No. 35).
2. Amendment of subsection (a) and repealer of subsection (a)(1) filed 10-4-2000; operative 11-3-2000 (Register 2000, No. 40).

§ 670.7. Permits to Take Fully Protected Animals for Scientific Purposes.

The department may issue revocable permits to take fully protected species for scientific purposes under the following conditions:

(a) Permits may be issued only to members of the faculty or professional staff of a scientific or educational institution; professional wildlife staff of a government agency or private institution; or others who are deemed qualified by the department.

(b) Requests for permits to take fully protected species shall be submitted to the department in writing, and shall include the following information:

(1) Name and address of applicant.
(2) Species and number to be collected.
(3) Scientific background and research experience of principal investigator and assistants.
(4) Description of proposed study, with reference to the literature, including purpose, methods of capture, materials, expected result, and intended disposition of animals collected or handled.
(5) Duration of study; locality and periods of sampling or capture.

(c) Revocable permits issued by the department shall be in the form of a memorandum of understanding. This memorandum shall include the conditions under which caking of animals may be permitted, beginning and termination dates, and requirements for periodic reports to the department, which shall be at least yearly. The memorandum, and any addenda to it, shall be signed by the director of the department and by the applicant or the applicant's executive supervisor.

(d) The department shall notify the commission prior to the issuance of any memorandums and prepare a report annually regarding any memorandums issued pursuant to this section.

(e) Commission approval shall be required prior to the issuance by the department of any memorandum for a fully protected species listed in subsection (f). Such memorandums shall be subject to conditions established by the commission.

(f) Commission approval shall be required for studies involving the take for scientific purposes of the following fully protected species:

(1) California condor *{Gymnogyps califomianus).*
(2) Southern sea otter *{Enhyara lutris nereis).*
(3) Bighorn sheep (Ovir *canadensis).*

(g) Permits for the taking of fully protected species that are also declared to be rare or endangered by the commission pursuant to Section 670.5, or federally designated as endangered or threatened by the Secretary of the Interior, shall be subject to conditions of State-Federal Cooperative Agreements relating to these species.

(h) Any permit issued pursuant to these regulations may be cancelled or suspended at any time by the director of the department when, in his judgment, permittee is acting or has acted contrary to the terms and conditions of subject permit, or if, in his judgment, tbe safety or welfare of the species authorized to be taken by subject permit is or may be jeopardized by the actions of permittee.

NOTE: Authority cited: Section 1002. Fish and Game Code. Reference: Sections 3511, 4700, 5050 and 5515, Fish and Game Code.

HISTORY

1. New section filed 2-18-81; effective thirtieth day thereafter (Register 81, No. 8).

(h) Unusual Project Applications. Public or private projects which are unusually extensive and/or protracted, inducting but not limited to projects that (1) involve more than one departmental adrninistrarive region, or (2) involve more than 15 streams (excluding timber harvest applications), shall be charged fees under the following provisions:

(1) The project sponsor shall submit the appropriate application fee required in the above fee schedule. Should this application fee be insufficient to defer the department's costs, then the department and the project sponsor shall arrange for a billing schedule to recover the department's additional project-related costs.

NOTE: Authority cited: Section 1607, Rah and Game Code. Reference: Section 1607, Hsh and Game Code.

HISTORY

1. New section filed7-l-91; operative 7-1-91 pursuant to Government Code section 11346.2(d) (Register 91. No. **40).**
2. Amendment of subsections (a)-(f) tiled 4-14-92; operative 5-14-92 (Register 92, No. 18).
3. Amendment tiled 2-23-2000; operative 3-24-2000 (Register 2000, No. 8).

§ 700. Hunting and Fishing Licenses, Possession and Display Of.

(a) Display of Sport Fishing License: Every person, while engaged in taking any fish, amphibian or repdle, shall display their valid sport fishing license by attaching it to their outer clothing at or above the waistline so that it is plainly visible, except when diving as provided in Section 7145 of the Fish and Game Code.

(b) Possession of Hunting License: Every person, while engaged in taking any bird or mammal must have on their person or in their immediate possession a valid hunting license.

NOTE: Authority cited: Sections 200,202,203,205,215,1050 and 3050, Fish and Game Code. Reference: Sections 200-205, 215, 220, 221, 1050, 1052, 1053, 2012, 3007, 3031, 3037, 3055, 3060-3063 and 7145-7150.5, Fish and Game Code.

HISTORY

1. New section filed 6-24—66 as an emergency; designated effective 7-2-66; Certificate of Compliance included (Register 66, No. 19).
2. Amendment filed 6-4-70; designated effective 7-1-70 (Register 70, No. 23).
3. Amendment of **NOTE** filed 7-16-81; effective thirtieth day thereafter (Register 81, No. 29).
4. Editorial correction of NOTE filed 9-20-85; effective thirtieth day thereafter (Register 85, No. 38).
5. Amendment of section heading, text and **NOTE** filed 2-25-94; operative 2-25-94 pursuant tn Government Code section 11346.2(d) (Register 94. No. 8).

§ 705. Hunting and Fishing Licenses, Application for.

The following procedure shall be followed in issuing hunting or sport fishing licenses:

(a) A hunting or sport fishing license, except as provided in subsection 705 (b), Title 14, CCR, shall contain the following information about the licensee before being issued to the licensee:

(1) True name
(2) Residence address
(3) Date of Birth
(4) Height
(5) Color of eyes
(6) Color of hair
(7) Weight
(8) Sex

(b) A sport fishing license issued pursuant to subsections 7149(a)(3) and 7149(c) of the Fish and Game Code shall contain the date of validity.

(c) Notwimstanding the provisions of Fish and Game Code section 1053, a person may purchase a hunting or sport fishing license, license tags or license stamps for another person, as long as the application contains the licensee's true name and residence address. Prior to using any license or license stamps, the licensee shall complete the license so that it contains all of the information required in subsection (a) above.

NOTE: Authority cited: Sections 1050 and 4331, Fish and Game Code. Reference: Sections 1050, 3031, 4331, 7145, 7149, 7149.2 and 7150, Fish and Game Code.

HISTORY

1. New section filed 4-13-73; effective thirtieth day mereafter (Register 86. No. 27).
2. Amendment filed 7-16-81; effective thirtieth day thereafter (Register 81, No. 29).
3. Editorial correction of **NOTE** filed 9-20-85; effective tiurrieth day thereafter (Register 85, No. 38).
4. New subsection filed 7-1-86; effective upon filing (Register 86, No. 27).
5. Amendment of subsections (a) and (b) filed 6-5-87; operative 7-5—87 (Register 87, No. 24).
6. Amendment filed 4-24-90; operative 5-24-90 (Register 90, No. 20).
7. Amendment of subsection (b) filed 2-1-93; operative 3-3-93 (Register 93, No. 6).
8. New subsection (a)(9) and amendment of section heading, subsection (c) and **Note** filed 3-3-94; operative 4-4-94 (Register 94, No. 9).
9. Amendment of subsection (a), repealer nf subsection (a)(9), and amendment of subsection (c) filed 12-27-96; operative 12-27-96 pursuant lo Fish and Game Code sections 202 and 215 (Register 96, No. 52).

§ 706. Hunting and Fishing License, Validation of.

Except as provided in subsection 705(b) above, every hunting or sport fishing license to be valid shall contain the information required in section 705 above, and it shall be signed by the licensee and the license shall show the date of issue.

NOTE: Authority Cited: Section 200,202,203 and 205, Fish and Game Codc.Reference: Sections 70, 200-205, 220, 221, 1050-1110, 2012. 3007, 3031, 3031.5, 3034, 3037, 3038, 3049, 3050, 3052, 3053, 3055. 3060-3063 and 7145-7150.5, Fish and Game Code.

HISTORY

1. New section filed 4-13-73; effective thirtieth day thereafter (Register 73, No. 15).
2. Amendment of NOTE filed 7-16-81; effective thirtieth day thereafter (Register 81, NoJ29).
3. Editorial correction of NOTE filed 9-20-85; effective thirtieth day thereafter (Register 85, No. 38)
4. Amendment filed 4-24-90; operative 5-24-90 (Register 90, No. 20).
5. Amendment filed 12-27-96; operative 12-27-96 pursuant to Fish and Game Code sections 202 and 215 (Register 96, No. 52).

§ 707. Licenses, Certificates, Permits and License Tags, Dating of.

Except as provided in subsection 705(b) above, every person who issues any license, certificate, permit or license tag authorized by the Fish and Game Code, shall enter in the space provided on the license, certificate, permit or license tag the date it was issued, and when required by the department shall Tnainrain a record of the date issued in the manner prescribed by the department. Any license agent who issues a permit or license tag shall immediately enter the tag number in the space provided on the appropriate current license.

NOTE: : Authority cited: Sections 200, 202, 203 and 205, Fish and Game Code. Reference:Sections 1050-1054.5. 1056, 1059-1110, 3034, 3037, 3038, 3050, 3053, 3055, 3060, 3063, 7146, 7149 and 7150, Fish and Game Code.

HISTORY

1. New section filed 5-4-76; effective tfdmeth day thereafter (Register 76, No. 19).
2. Amendment of NOTE filed 7-1 f>-81; effective thirtieth day thereafter (Register 81, No. 29).
3. Amendment filed 8-18-82; effective upon filing pursuant to Government Code section 11346.2(d) (Register 82, No. 34).
4. Editorial correction of NOTE filed 9-20-85; effective thirtieth day thereafter (Register 85, No.38).
5. Amendment filed 4-24-90; operative 5-24-90 (Register 90, No. 20).

§ 708. Big Game License Tag, Application, Distribution and Reporting Procedures,

(a) Deer License Tag Procedures and Requirements

(1) Deer License Tags.

No person shall hunt deer without a valid deer license tag in possession for that particular area as defined in sections 360 and 361. Deer shall be tagged only with a valid deer license tag for the area (as defined in sections 360 and 361) in which the deer is killed. Except as otherwise provided in the Fish and Game Code, no person shall take more than two deer during any license year.

(2) Deer License Tag Application and Distribution Procedures.

(A) Distribution of License Tags:

1. Premium deer hunt tags for X zones, additional hunts, and area-specific archery hunts shall be distributed by drawing, as described in sub-

section 708(g)(1) and (2), unless otherwise authorized. Applicants shall submit their deer tag application to the Department of Fish and Game. License and Revenue Branch, 3211 S Street, Sacramento, California 95816 (Or by mail to PO Box 949035, West Sacramento, CA 95798-9035). Applications must be received by the department by 5:00 p.m. on the first business day after June 1. Successful applicants will be selected by drawing within 10 calendar days following the application deadline date. If the drawing is delayed due to circumstances beyond the department's control, the department shall conduct the drawing at the earliest date passible. Successful and unsuccessful applicants will be notified by mail.

2. Except as noted in subsection 708(a)(2)(E) below, deer tags for A, B, C, and D zones and leftover drawing tags shall be issued upon request until each tag quota fills. If, on any given day, the number of applications received for any zone or hunt exceeds the number of available tags, the department may conduct a drawing for that zone or hunt.

(B) Application Farms: Except for permits and deer tags issued pursuant to sections 4181.5, 4188, and 4334 of the Fish and Game Code, application forms for deer tags (2002/2003 CALIFORNIA RESIDENT ONE-DEER TAG APPLICATION, LRB 1371 A, rev. 4/2002; 2002/2003 CALIFORNIA NONRESIDENT ONE-DEER TAG APPLICATION, LRB 1371B, rev. 4/2002; 2002/2003 CALIFORNIA RESIDENT SECOND-DEER TAG APPLICATION, LRB 137IC, rev. 4/2002; 2002/2003 CALIFORNIA NONRESIDENT SECOND-DEER TAG APPLICATION, LRB 1371D, rev. 4/2002, incorporated by reference herein) shall be made available to the public at license agents and regular offices of the department.

(C) Application Procedures:

1. Applicants must be at least L2 years of age and possess a California resident or nonresident hunting license valid far the deer hunting season for which they are applying, except applicants for additional junior deer hunts, who must possess a Caliibrnia junior hunting license.

2. No more than six persons may apply together as a party. To be considered as a party, all applications must be stapled together with the party leader's application on top and mailed in one envelope. All party members' applications must show the same tag choices in the same order of preference, the total number of persons in the party, and the party leader's name and identification number. All party members shall be awarded tags according to the choices listed on the party leader's application. Party applications for premium deer hunts shall not be split to meet the tag quota if the number of party members exceeds the number of available tags. Party applications which exceed the number of available tags shall be bypassed until the quota is reached. Incorrect or incomplete party applications will be separated and awarded tags on an individual basis.

3. Incomplete, incorrect, or ineligible applications will be rejected.

(D) Application Fee: Tbe department shall require that the specified fee for a deer tag be paid as a prerequisite to obtaining a deer tag application. In addition to the tag fee, the department shall also charge a nonrefundable $2.00 processing fee for each deer tag application.

(E) Application Restrictions:

1. One-Deer Tag Application:

a A person may use a one-deer tag application to apply for any premium deer hunt tag (X zone, additional hunt, or area-specific archery hunt) issued by drawing as specified in subsection 708(a)(2)(A) 1., above.

b. A person may use a one-deer tag application to apply for an A, B, C, or D zone tag or archery-only tag issued upon request.

c. A person may use a one-deer tag application to apply for any premium deer hunt tag QC zone, additional hunt, or area-specific archery hunt) remaining on the first business day after July 1. Applications must be submitted to the department's License and Revenue Branch in Sacramento, except applications for area-specific archery hunt A-22, which may be submitted in person to the department's Los Alamitos or San Diego offices.

2. Second-Deer Tag Application:

a. A person may use a secood-deer tag application to apply for an A or B zone tag or archery-only tag issued upon requesti

b. A person may use a second-deer tag application to apply for any area-specific arcbery tag remaining on the first business day following July 1. Applications must be submitted to the License and Revenue Branch in Sacramento, except applications for area-specific archery hunt A-22,.which may be submitted in person to the department's Los Alamitos or San Diego offices.

c. A person may use a second-deer tag application to apply for any C or D zone tag or additional hunt tag, except an additional junior hunt tag, remaining on the first business day following August I. Applications may be submitted before that date to the License and Revenue Branch in Sacramento.

d. A person in possession of a valid junior hunting license, who has not used a one-deer tag application to apply for an additional junior hunt, may use a second-deer tag application to apply for an additional junior hunt tag issued by drawing as specified in subsection 708(a)(2)(A)I., and 708(g)(2)(A). A junior hunter may not submit more than one application for additional junior hunts.

e. No person shall submit more than one one-deer tag application and one second-deer tag application to the department during any one license year. Any person in violation of this subsection may be denied deer tags for the current and following license year.

(F) Deer Tag Exchange Fee: The department shall charge a nonrefundable S6.25 processing fee for exchanging a deer tag for a different zone or hunt

(3) Tagging Requirements:

Immediately upon killing a deer, both portions of the deer license tag must be completely filled out and the date of kill permanently marked on the deer license tag. The deer license tag. must be attached to the antlers of an antlered deer or to the ear of any other deer and kept attached during the open season and for 15 days thereafter. Except as otherwise provided, possession of any untagged deer shall be a violation (refer to Fish and Game Code, Section 4336).

(4) Tag Validation and Countersigning Requirements, and Transporting for the Purpose of:

Any person legally killing a deer in this state shall have the deer license tag validated and countersigned by a person authorized by the commission as described below in subsection 708(a)(8) before transporting such deer, except for the purpose of taking the deer to the nearest person authorized to countersign the license tag, on the route being followed from the point where the deer was taken (refer to Fish and Game Code, Section 4341).

(5) Deer Head Retention Requirements and Production Upon Demand:

Any person taking any deer in this state shall retain in their possession during the open season thereon and for 15 days thereafter, that portion of the head which in adult males normally bears the antlers, and shall produce the designated portion of the head upon the demand of any officer authorized to enforce the provisions of this regulation (refer to Fish and Game Code, Section 4302).

(6) Deer Tag Reporting Requirements:

Every person to whom a deer tag is issued shall return the completed report card portion to the department within thirty days of taking a deer.

(7) Deer Violations, Tag Forfeiture:

Any person who is convicted of a violation involving deer shall forfeit their current year deer license tags and no new deer license tags may be issued to that person during the then current hunting license year, and that person may not apply for a deer tag for the following license year (refer to Fish and Game Code, Section 4340).

(8) Deer and Elk Tags, Persons Authorized to Validate.

The following persons are authorized to validate or countersign deer and elk tags:

(A) State:

1. Fish and Game Conrmiasioners
2. Employees of the Department of Fish and Game
3. Deputy Foresters
4. Assistant Deputy Foresters

5. Forest Rangers
6. Park Rangers—Grades 1, 2, 3, and 4
7. Supervising Plant Quarantine Inspectors
8. Junior, Intermediate and Senior Plant Quarantine Inspectors
9. Foresters
10. Fire Prevention Officers—Grades 1, 2, 3, and 4
11. Fire (Captains
12. Fire Apparatus Engineers

(B) Federal: (FS = U.S. Forest Service, FWS = U.S. Fish &: Wildlife Service, BLM = Bureau of Land Management)

1. Range Technicians (BLM)
2. Forest Supervisors (FS)
3. Assistant Forest Supervisors (FS)
4. District Forest Rangers (FS)
5. Foresters (FS, BLM)
6. Range Conservationists (FS, BLM)
7. Forest Engineers (FS, BLM)
8. Forestry Aides (FS)
9. Fire Control Crfficers or Aides (FS, BLM)
10. Clerks (FS, FWS, BLM) while on duty at their headquarters
11. Game Management Agents (FWS)
12. Wildlife Management Biologists (FS, FWS, BLM)
13. District Managers (BLM)
14. Information Specialists (BLM)
15. Area Managers (BLM)
16. Realty Specialists (BLM)
17. Natural Resource Specialists (BLM)
18. rmgineers (BLM)
19. Engmeering Technicians (BLM)
20. Recreation Resource Specialists (BLM)
21. Geologists (BLM)
22. Recreation Aides (BLM)
23. All Uniformed Personnel of the National Park Service
24. Commanding officers of any United States military installation or their designated personnel for deer taken **Dn** their reservation.
25. Postmasters
26. Post Office Station or Branch Manager for deer brought to their post office.

(C) Miscellaneous:

1. County firemen at and above the class of foreman for deer brought into their station.
2. Judges or Justices of all state and United States courts.
3. Notaries Public
4. Peace Officers
5. Nonsalaried police officers or deputy sheriffs while on scheduled duty in a city or county of appointment for deer brought to a police station or sheriffs office
6. Officers authorized to admnister oaths
7. Owners, corporate officers, managers or operators of lockers or cold storage plants for deer brought to their place of business.

(D) No person may validate or countersign their own tag.

(b) Distribution of Bighorn Sheep License Tags:

(1) Fund-raising Nelson bighorn ram license tags: Two fund-raising license tags for the taking of mature Nelson bighorn rams shall be sold for the purpose of raising funds to manage bighorn sheep. The department may designate a nonprofit organization to sell this fund-raising tag. Any resident or nonresident is eligible to buy the tag. The purchaser of a fund-raising license tag shall complete a required hunter orientation program conducted by the department and meet the hunter education requirements for a hunting license. The fund-raising license tags are defined as follows:

(A) Open-zone fund-raising license tags: These fund-raising license tags are valid in any of the areas described in subsection 362(a).

(2) General Nelson bighorn ram license tags: The application form (2002 NELSON BIGHORN SHEEP DRAWING APPLICATION, LBR 1362, Rev. 4/2002, incorporated by reference herein) shall be made available to the public at license agents and regular offices of the department. Applicants must be California residents or nonresidents, at least 16 years of age, possessing a California hunting license valid during the bighorn ram season for which they are applying, and must not have been previously issued a bighorn license tag in Calif ornia. Applicants must apply for only one designated zone. No person shall submit more than one application. Applicants shall submit the application with a nonrefundable processing fee of $6.75 to the Department of Fish and Game, License and Revenue Branch, 3211 S Street, Sacramento, CA 95816. (Or by mail to PO Box 989041, West Sacramento, CA 95798-9041). Applications must be received before 5:00 p.m. on the first business day after June 1. Incomplete applications and applications submitted without the appropriate processing fee will not be included in the drawing. Successful applicants and a list of alternates for each zone shall be deterniined by drawing within 10 calendar days following the application deadline date. If the drawing is delayed due to circumstances beyond the department's control, the department shall conduct the drawing at the earliest date possible. No more than one nonresident shall be selected to receive a general license tag. Unsuccessful applicants will not be notified. Successful applicants will be mailed notification as soon as practical. Upon receipt of the notification, the applicant shall submit the appropriate tag fee, either $270.25 for a resident or $500.00 for a nonresident to the Department of Fish and Game, License and Revenue Branch, 3211 S Street Sacramento, CA 95816. The tag fee shall be received by the department by 5:00 p.m. on the Monday following the second Saturday in July. Should the quota for each zone rerriain unfilled after that date, the alternate lists shall be used. Successful applicants shall be issued tags only after successfully completing the required hunter orientation program conducted by the department.

(3) Tagholder Responsibilities:

(A) Only persons possessing valid Nelson bighorn sheep license tags are entitled to hunt bighorn sheep. Tags shall not be transferable and are valid only in the zone or zones specified.

(B) Individuals awarded a fund-raising license tag and all successful applicants for general license tags shall attend and successfully complete a mandatory hunter orientation program Licensed guides employed by successful applicants and the fund-raising license tag buyer shall accompany their clients to this orientation program.

(C) All successful bighorn sheep tagholders shall have their tags validated. All tags must be returned to the department within 10 days after the close of the season, even though the tagholder may not have killed a Nelson bighorn ram.

(D) Tags must be completed and attached to the carcass of a bighorn ram immediately after the animal is killed. All successful bighorn sheep tagholders shall have their tags validated.

(E) All tagholders will be notified by mail as to whether they will be required to report to the department before hunting and upon completion of hunting. The notification shall contain procedures for reporting, including appropriate methods of contacting the department

(F) The tagholder shall surrender his tag to an employee of the department for any or all of the following reasons:

1, Any act on the part of the tagholder which violates any of the provisions of the Fish and Game Code, or any regulations of the commission.

2. Any act on the pan of the tagholder which endangers the person or property of others. The decision of the department in such respects shall be final and binding upon the tagholder.

(c) Distribution of Pronghom Antelope License Tags:

(1) The pronghom antelope license tags shall be issued by drawing, as described in subsection 708(g)(5)(A) and (B). Application forms (2002 RESIDENT ANTELOPE DRAWING APPLICATION, LRB 1363, Rev. 4/2002, incorporated by reference herein) shall be marie available to the public at license agents and regular department offices. Each applicant must be a California resident at least 12 years of age, and possess a California hunting license valid during the pronghom antelope season for which they are applying. Applicants for buck pronghom antelope license tags must not have been issued a buck pronghom antelope license

tag cluring the previous ten yean. Applicants may apply for doe and junior hunt license tags every year. Applicants for the junior pronghorn antelope hunts must be California residents possessing a junior hunting license valid during the pronghorn antelope season for which they art applying. No person shall submit more than one application for a pronghorn antelope license tag. No more than two persons shall apply together as a party. To be considered as a party, both persons must apply on the same application for the same tag choice. Incomplete applications and applications submitted without the appropriate processing fee will not be included in the drawing.

(7.) Applicants shall submit the application with a nonrefundable processing fee of $6.75 for Single and $13.50 for Party to the Department of Fish and Game, License and Revenue Branch, 3211 S Street, Sacramento, CA 95816 (Or by mail to POBox 989041, West Sacramento, CA 95798-9041). Applications must be received before 5:00 pm_ on the first business day after June 1. Successful applicants and a list of alternates for each hunt shall be determined by drawing within 10 calendar days following the application deadline date. If the drawing is delayed due to circumstances beyond the department's control, the department shall conduct the drawing at the earliest date possible. Except as provided in subsection 708(g)(5)(A)5., parry applications drawn for the last tag available for a hunt will be split and the party leader (first person listed) as indicated on the application form shall be awarded the pronghorn antelope license tag. The party member shall become the first alternate for that hunt Unsuccessful applicants will not be notified. Successful applicants and alternates will be mailed notification as soon as practical. Upon receipt of the notification the applicant or alternate shall submit an $95.75 tag fee to the Department of Fish and Game, License and Revenue Branch, 3211 S Street, Sacramento, CA 95816. The tag fee shall be received by the department by 5:00 p.m. on the Monday following the second Saturday in July. S hould the quota for each zone remain unfilled after that date, the alternate list shall be used. In the event only one pronghorn antelope license tag is available to an alternate, patty applications will be split and the alternate tag shall be awarded to the party leader as indicated on the application form. Undistributed tags will be issued after the drawing. Any tags unclaimed by successful applicants after that date shall be awarded to paid alternates for that zone, on an individual basis, in the order drawn. Any remaining tags may be issued to paid alternates for other zones.

(3) Fund-raising License Tags: Fund-raising license tags for the taking of buck pronghorn antelope shall be offered for sale to raise funds for the management of pronghorn antelope. Any resident or nonresident is eligible to buy one of the fund-raising license tags. Bidden for and purchasen of fund-raising tags are exempt from the 10-year waiting period to purchase **a** buck pronghorn antelope fund-raising tag. The sale price of **a** fund-raising license tag includes the fee for processing and issuing **a** hunting license. Tbe purchaser shall be issued the fund-raising license tag only after meeting the hunter education requirements for a hunting license.

(4) Tagholder Responsibilities:

(A) Only persons possessing valid pronghorn antelope license tags are entitled to hunt pronghorn antelope during these hunts. Tags shall not be transferable and are valid only in the area, season, and period specified on the tag.

(B) All tagholden must return the report card portion of their license tag to the department within one week after the close of the pronghorn antelope season, even though the tagholder may not have killed a pronghorn antelope.

(C) Tbe holder of a pronghorn antelope license tag, immediately after (tilling **a** pronghorn antelope, shall fill out both parts of the tag and mark permanently the date of kill. The tag portion shall be immediately attached to **a** hom of buck pronghorn antelope or to an ear of doe pronghorn antelope and kept attached for 15 days after the close of the open season.

(D) The tagholder shall surrender his license tag to an employee of the Department of Fish and Game for any of the fallowing reasons:

1. Any acton the part of the tagholder which violates any of the provisions of the Fish and Game Code, or any regulations of this commission.

2. Any act on the part of the tagholder which endangers the penon or property of others. The decision of the Department of Fish and Game in such respects shall be final and binding upon the tagholder.

(d) Distribution of Elk License Tags:

(1) Three fund-raising license tags for the taking of elk bulls shall be offered for sale to raise funds for the management of elk. The department may designate a nonprofit organization or organizations to sell the fund-raising tags. Any resident or nonresident is eligible to buy one of the license tags. The purchase of fund-raising tags shall complete required hunter orientation programs conducted by the department and meet the hunter safety requirements for a hunting license.

(2) Application forms for elk tags (2002 RESIDENT ELK DRAWING APPLICATION, LRB 1364, Rev. 4/2002, incorporated by reference herein) shall be made available to the public at license agents and regular department offices. Each applicant must be a California resident at least 12 years of age and possess a California hunting license valid during the elk season for which he/she is applying. No penon shall submit more than one application for an elk license tag. No more than two persons shall apply together as a party. To be considered as a party, both persons must apply on the same application for the same tag choice. Incomplete applications and applications submitted without the appropriate processing fee will not be included in the drawing.

(3) The elk hunting license tags shall be issued by drawing, as described in subsection 708(g)(4)(A) and (B). Applicants shall submit the application with a nonrefundable $6.75 for Single and $13.50 for Parry processing fee to the Department of Fish- and Game, License and Revenue Branch, 3211 S Street, Sacramento, CA 95816 (Or by mail to PO Box 989041, West Sacramento, CA 95798-9041). Applications must be received before 5:00 p.m. on the first business day after June 1. Except as provided in subsection 7Q8(g)(4)(A)5., party applications drawn for the last tag available for a hunt will be split and the party leader (first penon listed) as indicated on the application form shall be awarded the elk tag. The party member shall become the first alternate for that hunt Successful applicants and a list of alternates for each hunt will be determined by drawing within 10 calendar days following the application deadline date. If the drawing is delayed due to circumstances beyond the department's control, the department shall conduct the drawing at the earliest date possible. Unsuccessful applicants will not be notified. Successful applicants and alternates will be mailed notification as soon as practical. Upon receipt of the notification, the applicant or alternate shall send a $286.75 tag fee to the Department of Fish and Game, License and Revenue Branch, 3211 S Street, Sacramento, CA 95816. The tag fee shall be received by the department by 5:00 p.m. on the Monday following the second Saturday in July. Any tags unclaimed by successful applicants after that date shall be awarded to paid alternates for that hunt, on an individual basis, in the order drawn. Any remaining tags may be issued to paid alternates for other zones.

(4) Tagholder Responsibilities:

(A) All tagholden must return their license tags to the Department of Fish and Game within one week after the close of the elk season, even though the tagholder may not have killed an elk.

(B) License tags must be attached to the antler of an antlered elk, or to the ear of antlerless elk immediately after killing.

(C) Persons authorized to validate or countersign elk tags are listed in Section 708(a)(8). Elk tags must be countenigned before transporting such elk, except for the purpose of talcing it to the nearest penon authorized to countenign the license tag on the route being followed from the point where the elk **i3** taken.

(D) Only penons possessing valid elk license tags are entided to take elk. Tags are not transferrable and are valid only for the area and period specified.

(E) The tagholder shall surrender his tag to an employee of the Department of Fish and Game for any or all of the following reasons:

1. Any act on the pan of the tagholder which violates any of the provisions of the Fish and Game Code, or any regulations of the Commission made pursuant thereto.

2. Any act on the part of the tagholder which endangers the person or property of others. Tbe decision of the Department of Fish and Game shall be final.

(F) Elk may be taken on Santa Rosa Island pursuant to a permit issued by the department. For methods of take, see sections 353 and 354.

(e) Bear License Tags.

(1) Application for Bear License Tags:

(A) With the exception of permits and tags issued pursuant to section 4181 of the Fish and Game Code, all bear license tag applications shall be submitted on forms provided by the department

(B) The department may reqtiire that the specified fee provided for in section 4751 of the Fish and Game Code for such bear license tags be paid as a prerequisite to obtaining a bear license tag application.

(C) The department shall charge a nonrefundable S2.00 processing fee for each bear tag application.

(D) Only one bear license tag application may be submitted to the department during any one license year. Any person who submits more than one bear license tag application may be denied bear license tags for the current license year.

(2) Distribution of bear tags: Applications for bear tags (2002/2003 CALIFORNIA RESIDENT BEAR TAG APPLICATION, LRB 1365 A, rev. 4/2002; and 2002/2003 NONRESIDENT BEAR TAG APPLICATION, LRB 1365B, rev. 4/2002, incorporated by reference herein) shall be available to thepublic at license agents and regular offices of the department Tags will be issued at regular department offices.

(3) Use of Guides: Any bolder of a bear license tag who utilizes the services of a guide or guides shall verify that the guide is in possession of a valid guide's license and shall place the guide's license number on the bear license tag in the space provided.

(4) Use of Dogs: Any holder of a bear license tag who utilizes dogs to take bear shall so indicate on his bear license tag in the space provided.

(5) Validation of Bear Tags: Only Department of Fish and Game employees may validate bear tags (This provision supersedes section 4755 of the Fish and Game Code). Bear tags must be countersigned before trarisporring 3uch bear except for the purpose of taking it to the nearest person authorized to countersign the license tag, on the route being followed from the point where the bear is taken.

(6) Return of Bear License Tags:

(A) Every person who takes a bear shall immediately return the report card portion of the bear license tag, after having the tag countersigned as required in (e) above. The tag may be presented to a department office/officer or returned through the United States Mail.

(B) Every person who is unsuccessful in taking bear shall return the report card portion of the bear license tags by February 1 of the current license year. The tag may be presented to a department office/officer or returned through the United Stales Mail.

(f) Application For and Use of Wild Pig License Tags:

(1) Any person, 12 years of age or older, who possesses a valid hunting license may procure wild pig license tags as specified in Section 4654 of the Fish and Game Code.

(2) Wild pig license tags will be sold to residents in packets of five. Nonresident wild pig license tags will be sold individually.

(3) Wild pig license tags are valid only during that portion of the current hunting license year in which wild pigs may be legally harvested as provided in subsection 368(a).

(4) Any person hunting wild pigs shall carry a wild pig license tag while hunting wild pigs, and upon the killing of any wild pig shall immediately fill out both parts of the tag, clearly mark the date of the kill and attach the tag to the carcass of the wild pig. The report card portion shall be immediately returned to the department.

(g) Big Game Drawing System

(1) General Conditions

(A) Except as otherwise provided, the department shall award license tags for premium deer (X zones, additional hunts, and Area-specific archery hunts), bighorn sheep, elk and pronghom antelope hunts, as described in sections 360(b) and (c), 361,362, 364 and 363, using a Modified-Preference Point drawing system.

(B) Except as otherwise provided, the Modified-PTeference Point drawing system shall award proportions of hunt tag quotas, as specified for each species, using the following drawing methods:

1. Preference Point Drawings. Tags are awarded based on the following order of priority: an applicant's hunt choice (first choice only for deer), accumulated point totals by species (highest to lowest), and computer-generated random number (lowest to highest).

2. Draw-By-Choice Drawings. Tags are awarded according to an applicant's hunt choice and computer-generated random number (lowest to highest), without consideration of accumulated points.

(C) Except as otherwise provided, applicants unsuccessful in receiving a tag for premium deer (based on first choice selection), bighorn sheep, elk or pronghom antelope hunts shall earn one (1) preference point for use in future Big Game Drawings.

(D) To earn and accumulate a point for any species, a person must comply with all application requirements for that species as specified in subsections 708(a), (b), (c) and (d), including the following conditions:

1. Applicants must be at least 12 years of age at the time of application (16 years of age for bighorn sheep applications).

2. Applicants must possess a California hunting license valid for the hunting season requested (applicants for junior deer hunts must possess a junior hunting license). Applicants must provide evidence of such license at the time of application.

3. Applicants for elk and pronghom antelope hunts must be California residents.

4. Applications for bighorn sheep, pronghom antelope and elk hunts must include the appropriate nonrefundable processing fees.

5. Applications must be received by the department's License and Revenue Branch by 5:00 p.m. on the first business day after June 1.

6. Except for junior deer hunt applicants, applicants shall not submit more than one drawing application for each species during the same license year.

(E) No applicant shall earn more than one (1) preference point per species, per drawing, for use in future drawings. Preference points are accumulated by species and shall not be transferred to another species or another person. Preference points are not zone or hunt specific.

(F) Except as otherwise provided, successful applicants receiving tags for their first choice premium deer, bighorn sheep, elk or pronghom antelope hunts shall lose all preference points for that species.

(G) For party applications, the department shall use the average preference point value of all party members (total preference points for the party divided by number of party members) as the basis for consideration in the drawing for that species. Point averages shall not be rounded.

(H) Except as otherwise provided, persons who do not wish to apply for an antelope, elk, bighorn sheep or premium deer tags may earn one (1) preference point for any or all of these species, by submitting the appropriate application(s), as specified in subsections 708 (a), (b), (c) and (d), and writing the point code number for that species, as defined by the department in the hunt choice box (first choice only for deer). Persons applying for a preference point in this manner shall be subject to the same application requirements as regular drawing applicants as specified in subsection 708(g)(1)(D).

(I) The department shall maintain records of preference points earned by individual applicants based on the hunter identification number provided on each application (driver's license number. Department of Motor Vehicles identification number, or hunter identification number assigned by the department). Applicants shall notify the department's License and Revenue Branch, at 3211 S Street Sacramento, CA 95816, in writing, of any changes or corrections regarding name, mailing address or hunter identification number.

(J) Persons not applying for premium deer, bighorn sheep, elk, or pronghorn antelope hunts through the department's Big Game Drawings for five (5) consecutive years shall have their preference points for that species reduced to zero (0). For the purposes of this subsection, persons whose applications are disqualified from drawing shall be considered the same as persons not applying. Applying for preference points as described in (H) above, will keep an applicant's file active.

(2) Premium Deer Hunts

(A) Except for junior deer hunt applicants, as specified in subsection 708(a)(2)(E), persons must use a one-deer tag application to apply for premium deer hunts through the department's Big Game Drawing.

(B) License tags for premium deer hunts (except junior deer hunts) shall be awarded based on the following:

1. Ninety percent (90%) of the individual zone or hunt tag quota shall be awarded using a Preference Point drawing. Tag quota splits resulting in decimal fractions of a tag shall be rounded to the next higher whole number.

2. Ten percent (10%) of the individual zone or hunt tag quota shall be awarded using a Draw-By-Choice drawing. Tag quota splits resulting in decimal fractions of a tag shall be rounded to the next lower whole number,

3. For zones or hunts with quotas less than ten (10) tags, one (1) tag shall be awarded using a Draw-By-Choice drawing. Remaining tags shall be awarded using a Preference Point drawing.

4. Tags awarded to applicants for second or third choice zones or hunts shall be through a Draw-By-Choice drawing and shall not result in loss of accumulated points.

(C) License tags for junior deer hunts (J Hunts) as described in subsection 360(c) shall be awarded based on the following:

1. Fifty percent (50%) of the hunt tag quota shall be awarded through a Preference Point drawing. Tag quota splits resulting in decimal fractions of a tag shall be rounded to the next higher whole number.

2. Fifty percent (50%) of the hunt tag quota shall be awarded through a Draw-By-Choice drawing. Tag quota splits resulting in decimal fractions of a tag shall be rounded to the next lower whole number.

(D) A junior hunter applying for premium deer hunts (X zones. Area-specific archery hunts, and additional hunts) on a one-deer tag application and a second-deer tag application shall:

1. Receive a point only if he/she is unsuccessful in the big game drawing with his/her first choice on both applications.

2. Lose all preference points for deer if he/she receives his/her first choice on either application.

(3) Bighorn Sheep Hunts

(A) Successful bighorn sheep tag applicants shall be determined as follows, based on tag quotas for each hunt

1. For quotas of one, the tag shall be awarded using a Draw-By-Choice drawing.

2. For quotas of two, one tag shall be awarded using a Preference Point drawing, and one tag shall be awarded using a Draw-By-Choice drawing.

3. For quotas of three, two tags shall be awarded using a Preference Point Drawing, and one tag shall be awarded using a Draw-By-Choice drawing.

4. For quotas of four or more, seventy-five percent (75%) of the quota shall be awarded using a Preference Point drawing. Any resulting fractional tag shall be rounded to the next higher whole number. The remaining portion o f the quota shall be awarded using a Draw-By-Choice drawing.

(B) Alternates shall be selected for each hunt using a Preference Point Drawing.

(4) Elk Hunts

(A) Successful elk tag applicants shall be determined as follows, based on tag quotas for each hunt or hunt period.

1. For quotas of one, the tag shall be awarded using a Draw-By-Choice drawing.

2. For quotas of two, one tag shall be awarded using a Preference Point drawing, and one tag shall be awarded using a Draw-By-Choice drawing.

3. For quotas of three, two tags shall be awarded using a Preference Point drawing, and one tag shall be awarded using a Draw-By-Choice drawing.

4. For quotas of four or more, seventy-five percent (75%) of the quota shall be awarded using a Preference Point drawing. Any resulting fractional tag shall be rounded to the next higher whole number. The remaining portion of the quota shall be awarded using a Draw-By-Choice drawing.

5. Party applications shall be split as described in Section 708(d)(3) to fill the last tag available through the Preference Point drawing. Party applications shall not be split to fill the last tag available through the Draw-By-Choice drawing.

(B) Alternates shall be selected for each hunt or hunt period using a Preference Point drawing.

(5) Pronghorn Antelope Hunts

(A) Successful pronghorn antelope tag applicants shall be determined as follows, based on tag quotas for each hunt or hunt period.

1. For quotas of one, the tag shall be awarded using a Draw-By-Chaice drawing.

2. For quotas of two, one tag shall be awarded using a Preference Point drawing, and one tag shall be awarded using'a Draw-By-Choice drawing.

3. For quotas of three, two tags shall be awarded using a Preference Point drawing, and one tag shall be awarded using a Draw-By-Choice drawing.

4. For quotas of four or more, seventy-five percent (75%) of the quota shall be awarded using a Preference Point drawing. Any resulting fractional tag shall be rounded to the next higher whole number. The remaining portion of the quota shall be awarded using a Draw-By-Choice drawing.

5. Parry applications shall be split as described in Section 708(c)(2) to fill the last tag available through the Preference Point drawing. Party applications shall not be split to fill the last tag available through the Draw-By-Choice drawing.

(B) Alternates shall be selected for each hunt or hunt period using a Preference Point drawing.

NOTE: Authority cited: Sections 200, 202, 203, 215, 219, 220, 331, 332, 1050, 1572,4302.4331,4336,4340, 4341 and 10502, Fish and Game Code. Reference: Sections 200-203.1, 207, 210, 215, 219, 220, 331, 332, 713, 1050, 1570-1572, 3950, 3951, 4302, 4330-4333, 4336, 4340,4341,4652^1655, 4657, 4750-4756, 4902, 10500 and 10502, Fish and Game Code.

HISTORY

1. New section filed 6-28-2002; operative 6-28-2002 pursuant to Fish and Game Code sections 202 and 215 (Register 2002, No. 26).
2. Amendment of section and NOTE filed 3-27-2003; operative 4-26-2003 (Register 2003, No. 13).

§ 710. Hunter Education Training Equivalency.

(a) The department may evaluate the quality and coverage of hunter education courses offered by other countries, their political subdivision, or by the Armed Forces of the United States. Upon satisfactory evidence that a course fully meets or exceeds the requirements of the California hunter education course, the department may issue to graduates of such courses a California Certificate of Equivalency. (NOTE: See section 3050 (a)(3) of the Fish and Game Code regarding hunter safety certificates from other states.)

(b) The department shall prepare a comprehensive hunter education equivalency examination, to be administered to qualified applicants. Pass/fail criteria will be established by the department. Qualification to take the equivalency examination must include affirmation that the applicant has not previously taken and failed the examination.

Applicants who successfully pass the equivalency examination will be issued a hunter education certificate of equivalency.

comment by the public and other public agencies shall be provided as required by Government Code section 11346.8.

NOTE; Authority cited: Secdon 702, Fish and Game Code. Reference: Section 21080.5(d)(2)(iii) and (iv), Public Resources Code.

HISTORY

1. New section Bled 8-27-98; operative 8-27-98 pursuant to Government Code section 11343.4(d) (Register 98, No. 35).

§ 777.B. Evaluation and Adoption of Proposed Regulations.

(a) When preparing the Initial Statement of Reasons, the Department shall evaluate proposed regulations for consistency with the Department's enabling legislation. The Department's evaluation shall be set forth in writing in the Initial Statement of Reasons.

(b) When evaluating proposed regulations, the Department shall utilize an interdisciplinary approach that will ensure the integrated use of the natural and social sciences in decision making, consistent with the environmental protection purposes of the Department's enabling statute. The evaluation shall address both short-term and long-term effects on the environment, and shall also address growth-inducing effects and any potential cumulative effects.

(c) Any proposed regulations for which significant adverse environmental effects have been identified during the review process shall not be approved or adopted as proposed if there are feasible mitigation measures or feasible alternatives available which would avoid or substantially lessen any significant adverse effect which the proposed regulations may have on the environment in accordance with Public Resources Code section 21081.

(d) If the analysis identifies significant adverse environmental effects for which feasible mitigation measures are not available, it shall also include a statement describing any specific environmental, economic, legal, social, technological, or other benefits which mightjustify the significant environmental effects of the proposed regulations.

(e) In addition to meeting the requirements of Government Code section 11346.9(a)(3), if comments are received from other public agencies and members of the public during the evaluation process which raise significant environmental points, the Department shall summarize and respond to such comments in writing prior to taking final action on the proposed regulations and such written responses shall be included in the record of the rulemaking proceeding.

NOTE; Authority cited: Secdon 702, Fish and Game Code. Reference: Sections 21080.5(d)(2)(i), (ii) and (iv), and 21081, Public Resources Code.

HISTORY

1. New section Bled 8—27-98; operative 8-27-98 pursuant to Government Code section 11343.4(d) (Register 98, No. 35).

§ 777.9. Notice of Decision.

(a) A notice of the final decision by the Department which indicates whether the proposed regulations will, or will not have a significant effect on the environment shall be filed with the Secretary of the Resources Agency. The notice of the final decision shall be available for public inspection, and a list of the notices will be posted on a weekly basis in the Office of the Resources Agency, and will remain posted for a period of thirty (30) days.

NOTE; Authority cited: Section 702, Fish and Game Code. Reference: Section 21080_5(d)(2)(v). Public Resources Code.

HISTORY

1. New section filed 8-27-98; operative 8-27-98 pursuant to Government Code section 11343.4(d) (Register 98, No. 35).

Article 3. Fish and Game Review Procedures for EIRs and Negative Declarations

§ 778. General.

The nature and extent of Fish and Game's review of EIRs and Negative Declarations will be determined by the following conditions:

(a) Fish and Game has legal jurisdiction with respect to a project as it affects natural resources which are held in trust for the people of the State of California.

NOTE: Authority cited: Section 21080.5, Public Resources Code; Section 15050 of the Stale EIR Guidelines. Reference: Section 21080.5, Public Resources Code; Secdon 15050 of the Slate EIR Guidelines.

§ 779.5. Review of Projects Affecting Natural Resources Held In Public Trust—Early Consultation.

Under conditions specified in Section 21080.3 of CEQA, a lead agency shall consult with Fish and Game prior to the decision of whether an **EIR** or Negative Declaration is required. Comments shall be provided by the responsible regional unit

Section 21080.4 of CEQA requires lead agencies to send a Notice of Determination to Fish and Game if an EIR is required. Upon receipt of such notice ESB personnel shall send the Notice to the responsible regional unit This unit shall specify the scope and content of environmental information germane to Fish and Game statutory responsibilities and identify specific concerns with the project. The above information shall be provided in writing to ESB for review within 40 days of the date on the Notice of Determination. ESB shall obtain appropriate signatures and forward Fish and Game comments to the Resources Agency within 45 days of the date on the Notice of Determination.

In order for the environmental review process of a project to be timely and complete, the responsible regional unit of Fish and Game may request one or more meetings between representatives of agencies involved in the project. In addition, the responsible unit shall attend any such meeting requested by the lead agency or any other agency involved in the project Such meetings shall be convened.as soon as possible, but no later than 30 days, after they have been requested.

NOTE: Authority cited: Section 21080.5, Public Resources Code; Section 15050 of the State ELR Guidelines. Reference: Section 21080.5, Public Resources Code; Section 15050 of the Slate EIR Guidelines.

§ 780. Review of Draft EIRs and Negative Declarations.

Fish and Game in reviewing environmental documents, shall focus on the sufficiency of the EIR in accordance with Section 15161(c) of the State EIR Guidelines. Comments should focus on any shcrncomings in the EIR. The appropriateness of using a Negative Declaration, or additional alternatives or mitigation measures which the document should include. Comments shall be provided by the regional unit to ESB for review. If the comments are sufficient, appropriate signatures shall be obtained, and the comments forwarded to the Resources Agency for incorporation into other Agency comments, it any, If the comments are not sufficient regional unit personnel and ESB personnel shall coordinate to complete the comments before obtaining necessary signatures.

NOTE: Authority cited: Section 21080.5, Public Resources Code; Section 15050 of the State EIR Guidelines. Reference: Section 21080.5, Public Resources Code; Section 15050 of the State ELR Guidelines.

§ 780.5. Review of. Final EIRs and Negative Declarations.

The same procedure shall be used to review final documents as is used to review draft documents.

NOTE: Authority cited: Section 21080J, Public Resources Code; Section 15050 of the Stale EIR Guidelines. Reference: Section 21080.5, Public Resources Code; Section 15050 of the State ELR Guidelines.

§ 781. Designation of Contact Person.

Under the conditions and procedures specified above. Fish and Game shall supply with its comments the name of a Fish and Game contact person in accordance with Section 15161(d) of the State FJR Guidelines.

NOTE: Authority cited: Section 210805, Public Resources Code: Section 15050 of the State ELR Guidelines. Reference: Section 21080j. Public Resources Code; Section 15050 of the Stale EIR Guidelines.

§781.5. Regulation Procedure.

(a) When the department submits a recommendation to the cornmission with regard to adopting regulations which may have a significant effect on the environment or it is anticipated that a substantial body of opinion will reasonably consider the environmental effect to be adverse, the recommendation shall be presented in written form containing:

(1) The proposal.

(2) Reasonable alternatives to the proposal, and

(3) Mitigation measures to rninimize any significant adverse environmental impacts of the proposal.

(b) Recommendations from the department shall consider the relevant portions of policies declared by the state legislature and the commission dealing with the management of fish and wildlife resources.

. (c) Recommendations received from any person other than the department shall be considered as a comment on, or counter proposal to, the recommendations received from the department, and a written response shall be prepared by the department.

(d) The commission will evaluate proposals according to how well the recommendations would achieve the purposes and policies of fish and wildlife management described in the Fish and Game Code, and in Division 1, Tide 14, Califomia Administrative Code.

(e) After receipt of the recommendation from the department, the commission shall consult with all other public agencies having jurisdiction by law with respect to the activities involved in the recommendation.

(f) Notice of the filing of the recommendation by the department shall be made to the public following the statutory requirements of the Fish and Game Code. The notification shall be provided early enough that people will have at least 30 days, or until the next meeting, whichever occurs first, to respond to the recommendation before the commission takes its action. Notice shall also be mailed to any person who requests in writing such notification.

(g) The conimission will not adopt regulations as proposed if there are feasible alternatives or feasible mitigation measures available which would substantially lessen any significant adverse impact which the activity may have on the environment, unless specific economic, social or other conditions make infeasible such project alternatives or such mitigation measures.

(h) The final action on the adopting of regulations shall include the written response of the commission to sigmficant environmental points raised during the evaluation process by other public agencies and members of the public. Responses to comments received prior to the final public meeting when the commission must take its action will be prepared in writing prior to the meeting. Responses to comments received at the final meeting may be made orally by the commission during the meeting. Such oral responses will be included in the official written minutes of the meeting.

(i) Notice of the adoption of a regulation adopted pursuant to Section 2108O.5, Public Resources Code, shall be filed with the Secretary for Resources. The notice shall be available for public inspection and shall remain posted for a period of 30 days.

NOTE: Authority cited: Section 21080.5, Public Resources Code, and Section 15050 of the Stale EIR Guidelines. Reference: Section 21080.5, Public Resources Code, and Section 15050 of the State EIR Guidelines.

HISTORY

1. New section tiled 10-19-76; effective tnirtieth day mereafter (Regisier 76, No. 43).
2. Amendment of subsection (a) filed 3-15-77 as an emergency; effective upon Sling (Register 77, No. 12).
3. Omficate of Compliance filed 7-8-77 (Register 77, No. 28).
4. Amendment of subsection (a) filed 7-8—77; effective thirtieth day thereafter (Register 77, No. 28).
5. Amendment of NOTE filed 7-16-81; effective tnirtieth day mereaner (Register 81, No. 29).
6. Renumbering of Section 3.9Qto Section 781.5 filed 2-17-82; designated effective 3-1-82 (Register 82, No.8).

Chapter 5. Fish and Game Commission, Wildlife Conservation Board, Marine Research Committee, and Department of Fish and Game—Conflict of Interest Code

NOTE: It having been found, pursuant to Government Code Section 11344, that the printing of the regulations constituting the Conflict of Interest Code is impractical and these regulations being of limited and particular application, these regulations are not published in full in the California Code of Regulations. The regulations are available to the public for review or purchase at cost at the following locations:

FISH AND GAME COMMISSION
1416 NINTH ST.
SACRAMENTO, CALIFORNIA 95BI4

WDJIUFE CONSERVATION BOARD
1416 NINTH ST. -
SACRAMENTO, CALIFORNIA 95B14

MARINE RESEARCH COMMITTEE
350 GOLDEN SHORE
LONO BEACH. CALIFORNIA 90802

DEPARTMENT OF FISH AND GAME
14IS NINTH ST.
SACRAMENTO, CALIFORNIA 93114

FAIR POLITICAL PRACTICES COMMISSION
11C0 "K- ST.
SACRAMENTO, CALIFORNIA 95S14

ARCHIVES
SECRETARY OF STATE
1020 "0- ST.
SACRAMENTO. CALIFORNIA 95SI4

The Conflict of Interest Code is designated as Chapter 5 of Title 14 of the California Code of Regulations, and consists of sections numbered and titled as folio ws:

Section
782. General Provisions
Appendix

NOTE: Authority cited: Section 87300 and 87304, Government Code. Reference: Sections 87300, et seq., Government Code.

HISTORY

1. New Chapter 5 (Articles 1-5, Sections 782-786.7) filed 11-9-77; effective thirtieth day thereafter. Approved by Fair Political Practices Commission 10-4-77 (Register 77, No. 46).
2. Repealer of Chapter 5 (Article 1-4, Sections 782-786.7) and new Chapter 5 (Section 782 and Appendix) filed 2-26-81; effective thirtieth day thereafter. Approved by Fair Political Practices Commission 12-1-80 (Register 81, No. 9).
3. Amendment of Appendix filed 1-20-87; effective thirtieth day thereafter. Approved by Fair Political Practices Commission 10-14-86 (Register 87, No.4).
4. Amendment of Appendix filed 1-21-93; operative 2-22-93. Submitted to OAL for printing only pursuant to Government Code section 11343.8. Approved by Fair Political Practices Commission 11-9-92 (Register 93, No. 4).

Chapter 6. Regulations for Implementation of the California Endangered Species Act

Article 1. Take Prohibition; Permits for Incidental Take of Endangered Species, Threatened Species and Candidate Species

§ 783.0. Purpose and Scope of Regulations.

This article imp lements Section 2080 and Section 2081 of the Fish and Game Code. This article does not affect the Department's authority to authorize take pursuant to any other provision of this division.

NOTE: Authority cited: Sections 702 and 2081(d), Fish and Game Code. Reference: Sections 2080 and 2081, Fish and Game Code.

HISTORY

1. New chapter 6, article 1 (sections 783.0-783.8) and section filed 12-30-98; operative 12-30-98 pursuant to Government Code section 11343.4(d) (Register 99, No. 1).

5 783.1. Prohibitions;

(a) No person shall import into this State, export out of this State or take, possess, purchase, or sell within this State, any endangered species, threatened species, or part or product thereof, or attempt any of those acts, except as otherwise provided in the California Endangered Species Act, Fish and Game Code Section 2050, et seq. ("CESA"), the Native Plant Protection Act, the Natural Community Conservation Planning Act, the California Desert Native Plants Act, or as authorized under this article in an incidental take permit.

Appendix 2 -

List of Individuals and Organizations Receiving the 2003 Draft Environmental Document Regarding Pronghorn Antelope

List of Individuals and Organizations
Receiving the 2003 Draft Environmental Document
Regarding Pronghorn Antelope Hunting

1. Mr. G. Lynn Sprague, U.S. Forest Service, Vallejo, California
2. Mr. Wayne White, U.S. Fish and Wildlife Service, Sacramento, California
3. Mr. Mike Pool, Bureau of Land Management, Sacramento, California
4. Mr. John Reynolds, National Park Service, San Francisco, California
5. Director, California Department of Parks and Recreation, Sacramento, California
6. Ms. Virginia Handley, The Fund for Animals, San Francisco, California
7. Ms. Lois Kliebe, Sportsmen^ Council of Northern California, Redding, California
8. Ms. Kathy Lynch, Lynch and Associates, Sacramento, California
9. Mr. Gerald Upholt, California Rifle and Pistol Association, Sacramento, California
10. Mr. Keith Ringgenberg, Outdoor Sportsmen's Coalition, Fresno, California
11. Ms. Camilla Fox, Animal Protection Institute, Sacramento, California
12. Mr. Wayne Pacelle, Humane Society of the United States, Washington, DC
13. Mr. Patrick L. Smith, United State Department of Agriculture, Sacramento, California
14. Ms. Shannon Hebert, United State Department of Agriculture, Portland, Oregon
15. Mr. Alan Sanders, Sierra Club, Los Padres Chapter, Hueneme, California
16. Dr. J. Rod McGinnis, California Bowmen Hunter, Sacramento, California
17. Mr. Michael Dunbar, US fish and wildlife Service, Lakeview, Oregon
18. Mr. Jim Yoakum, Verdi, Nevada
19. Mr. Dave Carter, Dixon, California
20. Modoc County Fish and Game Commission, Alturas, California

FINAL
ENVIRONMENTAL DOCUMENT

Section 362, Title 14, California Code of Regulations

Regarding

Bighorn Sheep Hunting

May 5, 2011

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF FISH AND GAME

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CHAPTER 1. SUMMARY

Existing law (Section 4902, California Fish and Game Code) allows the Commission to authorize sport hunting of mature Nelson bighorn rams in geographic areas for which management plans have been developed. Section 4901 of the California Fish and Game Code provides the Commission to authorize the take of a limited number of mature Nelson bighorn rams by establishing the areas, seasons and hours, bag and possession limits, and the number of Nelson bighorn sheep rams that may be taken pursuant to its regulations.

State law (Section 207 of the Fish and Game Code) requires that the Commission review the mammal hunting regulations, and the Department to present its recommendations for changes to the mammal hunting regulations to the Commission at a public meeting. Mammal hunting regulations adopted by the Commission provide for hunting bighorn sheep in specific areas of the State (Section 362, Title 14, California Code of Regulations).

In adopting regulations providing for limited hunting of mature Nelson bighorn sheep rams, the Commission would be implementing section 4902 of the Fish and Game Code, which is consistent with the wildlife conservation policy adopted by the California Legislature (Section 1801, Fish and Game Code). The State's wildlife conservation policy, among other things, contains an objective of providing hunting opportunities when such use is consistent with maintaining healthy wildlife populations.

PROPOSED PROJECT AND ALTERNATIVES

The project discussed in this document (proposed project) involves hunting of mature male Nelson bighorn sheep (Sections 4900-4904, California Fish and Game Code). Specifically, the Department is proposing to adjust tag quotas, establish 2 additional hunt zones, modify hunt zone boundaries, and establish the zones in which tags for fund-raising purposes are valid. Because final hunter quotas cannot be established until harvest and survey results are completed and analyzed, the Commission is provided with a range of proposed hunting tag quotas (Appendix 1). Upon completion of the aforementioned analyses, the Department will determine and recommend to the Commission final hunting tag quotas.

The Department is also providing the Commission with a range of alternatives to the proposed project that could feasibly attain the basic objectives of the project. It is anticipated that the proposed project would fall around the upper end of the proposed tag ranges. Alternative 1 (no change) would maintain quotas and seasons for each existing hunt zone without change. Alternative 2 (increased harvest) would involve issuing tag quotas at a rate greater than the proposed project, and would necessarily involve legislative changes to the Fish and Game Code.

Table 1-1: Proposed 2011 Tag Allocation

HUNT ZONE	2010 Tag allocation	2011 Tag allocation (proposed)
Zone 1 - Marble/Clipper Mountains	4	3-4
Zone 2 - Kelso Peak/Old Dad Mountains	4	3-4
Zone 3 - Clark/Kingston Mountain Ranges	2	2
Zone 4 - Orocopia Mountains	1	1-2
Zone 5 - San Gorgonio Wilderness	2	2-3
Zone 6 - Sheep Hole Mountains	2	1-2
Zone 7 – White Mountains	4	3-5
Zone 8 - South Bristol Mountains	-	2-3
Zone 9 – Cady Mountains	-	3-4
Open Zone Fund-raising Tag	1	1
Marble/Clipper/Sheep Hole Mountains Fund-raising Tag	1	-
Marble/Clipper/South Bristol Mountains Fund-raising Tag	-	1
Kelso Peak/Old Dad Mountains Fund-raising Tag	1	1
TOTAL	22	23-32

SUMMARY OF IMPACTS AND MITIGATION

Table 1-2 summarizes Department findings that there are not significant long-term adverse impacts associated with the proposed project or any of the project alternatives considered for the 2011 bighorn sheep hunting regulations.

Table 1-2: Effects on the Environment of Limited Public Hunting of Bighorn Sheep

Alternative	Significant Impact	Nature of Impact	Mitigation Available	Nature of Mitigation
Proposed Project: Adding new hunt areas and modifying number of tags and zone boundaries	No	None	N/A	N/A
Alternative 1: No change	No	None	N/A	N/A
Alternative 2*: Increased harvest of mature rams	No	None	N/A	N/A

It is anticipated that the number of tags issued will fall near the upper end of the proposed ranges (Table 1-1). On a zone basis, the resulting harvest for 2011 will likely be similar to that which occurred in 2010, because hunter success generally approaches 100%. On a statewide basis, the total hunter harvest will likely exceed that of previous years because of the allocation of tags in 2 newly established hunt zones. Based on success rates from previous years, it is anticipated that the actual harvest will be approximately 95% of the bighorn sheep tags allocated for 2011.

PUBLIC INPUT AND AGENCY CONSULTATION

The Legislature has delegated authority to the Commission, whose members are appointed by the Governor, to regulate the take and possession of wildlife. The Legislature has further directed the Commission to hold no fewer than three public meetings for the purpose of considering and adopting revisions to regulations relating to hunting and trapping of mammals (Section 207, Fish and Game Code [FGC]).

Recommendations and comments from the Department, other agencies, and the public are to be received and considered at these meetings. The Commission may then, after considering public input, adopt regulations relating to any recommendations received at the initial meeting it deems necessary to preserve, properly utilize, and maintain each species or subspecies.

The California Environmental Quality Act (CEQA) encourages public input. One of the primary purposes of the environmental document review process is to obtain public comment, as well as to inform the public and decision makers. It is the intent of the Department to encourage public participation in this environmental review process.

Prior to preparing this environmental document, the Department developed a Notice of Preparation (NOP). On December 8, 2010, the NOP was provided to the State Clearinghouse for distribution, as well as to land management agencies in California that have an interest, or play a key role, in Nelson bighorn sheep management [including the U.S. Fish and Wildlife Service (USFWS), Bureau of Land Management (BLM), National Park Service (NPS) and U.S. Forest Service (USFS)]. The NOP requested that any comments regarding input to this environmental document be submitted to the Department within 30 days of receipt of the NOP.

In addition, this environmental document was available for public review for 45 days (Section 15087, Title 14, California Code of Regulations). During the review period, the public was encouraged to provide written comments regarding the document. During the comment period one comment letter was received. Responses to comments provided on the 2011 Draft Environmental Document Regarding Bighorn Sheep Hunting are included in Chapter 6. The Department received confirmation from the State Clearinghouse, noting that the Department had complied with the CEQA review requirements for the draft environmental document and that no State agency comments were received.

AREAS OF CONTROVERSY

The Department has encouraged public input into the environmental document by holding a scoping session to discuss documents prepared in support of mammal hunting and trapping regulations. This scoping session was held in Sacramento, CA on November 18, 2010. No areas of controversy were identified.

ISSUES TO BE RESOLVED

As provided by existing law, the Commission is the decision-making body (lead agency) considering the proposed project, while the Department has the responsibility for management activities, such as hunting, translocating bighorn sheep to historical range(s), and preparing management strategies. The primary issue for the Commission to resolve is whether to change bighorn sheep hunting regulations as an element of bighorn sheep management. If such changes are authorized, the Commission will specify the areas, seasons, methods of take, number of bighorn sheep tags to be allocated, and other special conditions as appropriate.

FUNCTIONAL EQUIVALENCY

California Environmental Quality Act (CEQA) review of the proposed project will be conducted in accordance with the Commission's certified regulatory program (CRP) approved by the Secretary for the California Resources Agency pursuant to Public Resources Code Section 21080.5. The California Environmental Quality Act requires all public agencies in the State to evaluate the environmental impacts of projects they approve, including regulations, which may have a potential to significantly affect the environment. The Department has prepared this Environmental Document (ED), which is the functional equivalent of an Environmental Impact Report, on behalf of the Commission in compliance with this requirement. The ED provides the Commission, other agencies, and the general public with an objective assessment of the potential effects of the proposed action.

CHAPTER 2. THE PROPOSED ACTION

1. Number of Tags

In order to maintain management goals and objectives, it is periodically necessary to adjust quotas in response to dynamic environmental and biological conditions. This proposed project adjusts bighorn sheep tag ranges to account for fluctuations in populations of bighorn sheep (Appendix 1).

Fish and Game Code Section 4902 limits the number of hunting tags for mature Nelson bighorn sheep rams to no more than 15% of the number of such males estimated to

occur in each geographic area for which an approved management plan has been prepared. Annual population estimates are based on aerial surveys carried out by Department biologists, or on models developed from data obtained during those aerial surveys. Annual survey data or resulting models of population size upon which tag allocations are based are available from the Wildlife Branch, California Department of Fish and Game, Sacramento, California.

2. Establish New Hunts

a. Establish a new bighorn sheep hunt in the South Bristol Mountains, San Bernardino County. Bighorn sheep are widespread in southeastern California, and the proposal would increase the total number of geographic areas, or hunt zones from 7 to 8. The proposal will add one new bighorn sheep hunt, termed the South Bristol Mountains bighorn sheep hunt, to the list of areas open to hunting of bighorn sheep (Figure 2-1). The number of tags (range 2 to 3) to be issued would be restricted to no more than 15% of the number of mature Nelson bighorn rams estimated to occur in the hunt zone, as stipulated by state law. Tags would be available to the general public during a season beginning on the first Saturday in December 2011, and continuing through the first Sunday in February 2012 (Appendix 1). This opportunity complies with Sections 4900-4904 of the California Fish and Game Code (Appendix 2) and recommendations provided in the approved management plan for the South Bristol Mountains Bighorn Sheep Management Unit (Bleich et al. 2010)

b. Establish a new bighorn sheep hunt in the Cady Mountains, San Bernardino County. Bighorn sheep are widespread in southeastern California, and the proposal would increase the total number of geographic areas from 8 to 9. The proposal will add one new bighorn sheep hunt, termed the Cady Mountains bighorn sheep hunt, to the list of areas open to hunting of bighorn sheep (Figure 2-1). The number of tags (range 3 to 4) to be issued would be restricted to no more than 15% of the number of mature Nelson bighorn rams estimated to occur in the hunt zone, as stipulated by state law. Tags would be available to the general public during a season beginning on the first Saturday in December 2011, and continuing through the first Sunday in February 2012 (Appendix 1). This opportunity complies with Sections 4900—4904 of the California Fish and Game Code and recommendations provided in the approved management plan for the Cady Mountains Bighorn Sheep Management Unit (Bleich et al. 2010).

3. Modify One Existing Hunt Boundary

a. Existing regulations specify the boundary for the Old Dad/Kelso bighorn sheep hunt. A small number of bighorn sheep now occupy the South Soda Mountains, near the west end of the Old Dad Peak-Kelso Mountains bighorn sheep hunt zone. Additionally, proposed regulatory changes will establish the Cady Mountains bighorn sheep hunt zone. The proposal to modify the existing boundary for the Old Dad/Kelso bighorn sheep makes the western boundary contiguous with the Cady Mountains bighorn sheep hunt zone while simultaneously encouraging continued expansion of the population of bighorn sheep now established in the South Soda Mountains (Appendix 1).

4. Establish Valid Areas and Dates for Three Fund-Raising Tags

a. Allocate one open zone fund-raising tag that shall be valid in any zone open to the hunting of mature Nelson bighorn sheep rams. In the White Mountains bighorn sheep hunt, this tag shall be valid from the first Saturday in August 2011 and continue through the last Sunday of September 2011. In the San Gorgonio Wilderness, this tag shall be valid from the third Saturday in November 2011 to the third Sunday of February 2012. In all other zones open to the hunting of mature Nelson bighorn sheep rams, this tag shall be valid from the first Saturday of November 2011 through the first Sunday of February 2012.

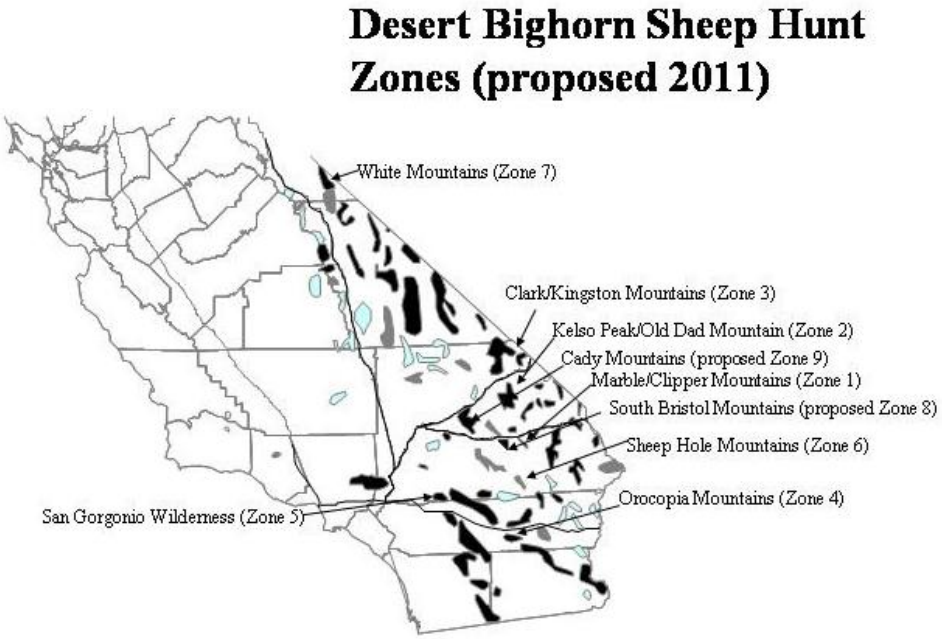
b. Allocate one fund-raising tag that shall be valid only in the Marbles and Clipper Mountains and the South Bristol Mountains hunt zones. This tag shall be valid from the first Saturday of November 2011 through the first Sunday of February 2012.

c. Allocate one fundraising tag that shall be valid only in the Kelso Peak /Old Dad Mountains hunt zone. This tag shall be valid from the first Saturday of November 2011 through the first Sunday of February 2012.

The Department is recommending that the Commission adopt regulations that will provide for taking no more than 15 percent of the mature Nelson bighorn rams from each management unit, the establishment of 2 additional hunt zones, a modification to existing hunt zone boundaries, and establish the zones and season dates in which tags

for fund-raising purposes are valid.

Figure 2-1: Location of Nelson Bighorn Sheep Hunt Zones



BACKGROUND AND EXISTING CONDITIONS

Historical Perspective of Bighorn Sheep Management in California

Bighorn sheep existing today probably are the descendants of similar animals that entered North America via the Bering land bridge during the Illinoisan glaciation, at least 150,000 years ago (Cowan 1940, Geist 1970). Wild sheep spread across the glaciated mountains of western North America during the Sangamon interglacial period. The Wisconsin glaciation, 10,000-125,000 years ago, then separated the animals into two populations that persisted in unglaciated areas. Subsequently, Dall's sheep (*Ovis dalli*) evolved from populations in the Alaska-Yukon region, and bighorn sheep (*Ovis canadensis*) evolved in a region south of glaciated mountains and forests in what is now the continental United States (as summarized by Bailey 1980). Following the Wisconsin glaciation, wild sheep radiated into dry, mountainous terrain.

Geist (1971) tied the evolution of Asiatic and North American sheep to the expanding availability of favorable habitat, an occurrence concomitant with receding

glaciers. The races, or subspecies, of *Ovis canadensis* currently recognized as desert bighorn sheep evolved from wild sheep that persisted in the southern region despite climatic changes. In part, they may have persisted because of the lack of competition with other large, native herbivores (Bailey 1980).

In California, bighorn sheep are found primarily in the southeastern part of the State in numerous Mojave and Sonoran desert mountain ranges. They also occur in several populations in the eastern Sierra Nevada; and, in three populations, in the Transverse Ranges of Ventura, Los Angeles, and San Bernardino counties. The probable historical and current distributions of bighorn sheep in California are illustrated in Figure 2-2.

Until recently, taxonomists have recognized three subspecies of mountain sheep in the state, including *O. c. californiana* (which was thought to occur throughout the Sierra Nevada and historically in northeastern California), *O. c. nelsoni* (which occurs throughout the majority of the Mojave and Sonoran deserts and in the transverse ranges of southwest California), and *O. c. cremnobates* (which occupied the peninsular ranges located primarily near the border with Mexico) (Cowan 1940). There have, however, been recent changes in nomenclature with respect to bighorn sheep inhabiting the Sierra Nevada and the peninsular ranges. Indeed, bighorn sheep occupying the Sierra Nevada were designated *O. c. californiana* and are the only representative of that taxon; at the same time, all other wild sheep formerly designated as *O. c. californiana* were synonymized with *O. c. canadensis*, and are now recognized as the Rocky Mountain subspecies (Wehausen and Ramey 2000). Moreover, bighorn sheep inhabiting the peninsular ranges and formerly recognized as the subspecies *cremnobates*, were synonymized with *O. c. nelsoni*, and no longer are considered a distinct subspecies (Wehausen and Ramey 1993).

To further complicate nomenclature, Joseph Grinnell (1912) had assigned the subspecific epithet *sierrae* to those animals he described from the Sierra Nevada before Cowan (1940) published his revision of the taxonomy of North American mountain sheep and, obviously, before Wehausen and Ramey (2000) synonymized *californiana* with *canadensis*. Because sheep in the Sierra Nevada warrant subspecific recognition (Wehausen and Ramey 2000), judicious application of the rule of priority as it appears in the International Code of Zoological Nomenclature dictates that those animals are once again assigned to the subspecies *sierrae* (Wehausen et al. 2005).

Throughout much of the range occupied by bighorn sheep, the downward trend in numbers began with the human settlement of vast, uninhabited areas (Buechner 1960). Although a great deal of attention has been paid to the potential impacts of unregulated market hunting associated with the influx of gold mining during the 1850s (Buechner 1960) another likely factor was the introduction of livestock, primarily domestic sheep, throughout much of the range of bighorn sheep (Buechner 1960). Indeed, Francisco Garces, who chronicled the expeditions of Father Anza as he traveled from what is now Arizona north and west toward the Pacific coast of California, described dead and dying bighorn sheep in the Santa Rosa Mountains of southern California as early as 1776 (Bolton 1930). Garces described dead and moribund animals in association with livestock being herded northward by the Anza Expedition (Bolton 1930). Further evidence persists in the form of a legend among the Kaliwa Indians of Baja California, which describes a pestilence that killed many wild sheep in northern Mexico following the arrival of Spaniards and their livestock (Tinker 1978).

Historically, bighorn sheep were more numerous than they are today (Buechner 1960); a reasonable estimate for California is about 10,000 individuals in 1800 (Bleich 2006). These animals were distributed among approximately 100 populations at that time (Wehausen et al. 1987a).

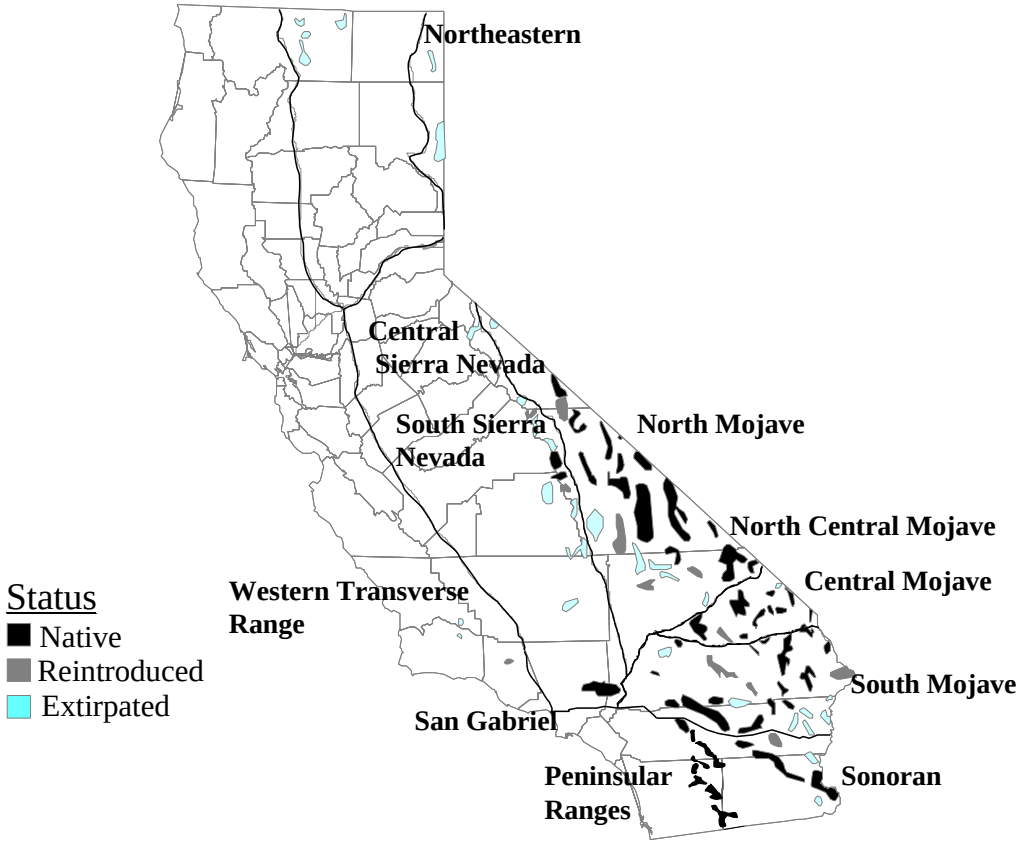
In the decades immediately following the discovery of gold in California, several populations of bighorn sheep in the Sierra Nevada were eliminated, likely as a result of diseases contracted from domestic sheep that were grazed in that mountain range. The reduction in bighorn sheep, and wildlife populations in general, resulted in the first legal protection for bighorn sheep and other species of large mammals in California. At that time, it was believed that wildlife populations protected from hunting would flourish and recolonize former ranges and, in 1872, the California Legislature passed a law protecting deer (*Odocoileus hemionus*), elk (*Cervus elaphus*), and pronghorn (*Antilocapra americana*) for eight months of the year. In 1878, the Legislature amended the act to establish a four-year moratorium on the taking of any elk, pronghorn antelope, bighorn sheep, or female deer and, in 1883, the moratorium on taking bighorn sheep was extended indefinitely. In 1933, bighorn sheep became the first species in California to be classified as "fully protected" by the California Legislature (California Department of Fish and Game 2005a).

Despite the well-intentioned efforts of the California Legislature, total protection did not halt the loss of bighorn sheep in California (Wehausen et al. 1987a, Bleich 2006), and populations of bighorn sheep continued to disappear (Epps et al. 2003). Historic surveys and population estimates suggest that diseases, habitat changes, and competition for forage, rather than illegal take, resulted in the elimination of bighorn sheep in some areas, of which the most recent examples were the losses of translocated populations of bighorn sheep at Lava Beds National Monument in Siskiyou County (Weaver 1983), and in the Warner Mountains of Modoc County (Weaver and Clark 1988), both of which are thought to have resulted from respiratory disease contracted from domestic sheep in those areas (Foreyt and Jessup 1982, Weaver and Clark 1988).

Contemporary Management of Bighorn Sheep in California

Currently, bighorn sheep occupy about 60 mountain ranges in California (Wehausen et al. 1987a); these populations are distributed primarily in the Sierra Nevada and desert regions of eastern and southern California (Epps et al. 2003). About 400 bighorn sheep occupy the Sierra Nevada, 950 occupy the peninsular ranges, and the remainder (about 3,850) occurs in the transverse ranges, the Mojave Desert, and the Sonoran Desert. There are more populations than there are mountain ranges supporting bighorn sheep, because some larger mountain ranges contain multiple populations based on distinct ranges of females (Bleich et al. 1996).

Figure 2-2: Bighorn sheep distribution



As a result of the aforementioned taxonomic and nomenclatural revisions, two subspecies of bighorn sheep currently are recognized in California. *Ovis canadensis nelsoni* occurs in suitable habitat in the Transverse Ranges, the Mojave Desert, and the Sonoran Desert; *O. c. sierrae* is restricted to the Sierra Nevada. Since 1998, bighorn sheep occupying the peninsular ranges have been afforded protection under the federal Endangered Species Act (U.S. Fish and Wildlife Service 2000), and bighorn sheep occupying the Sierra Nevada have been afforded similar protection since 2000 (U.S. Fish and Wildlife Service 2008). The California Fish and Game Commission has classified bighorn sheep inhabiting the peninsular ranges as threatened, and those inhabiting the Sierra Nevada are classified by the Commission as endangered.

Although the Department has supported an active management program for many years, contemporary management of bighorn sheep began with the passage of Senate Resolution 43 in 1963 (Bleich 2006). Input from interested conservation groups was instrumental in the passage of that resolution, which resulted in funding for the most detailed survey of bighorn sheep yet conducted in California; until that time, basic

inventory data consisted only of cursory surveys that occurred in 1940, 1946, and 1957. Survey work completed during 1968-1972 as a result of Senate Resolution 43 yielded an estimate of 3,700 bighorn sheep in California (Weaver 1972). More importantly, however, was the fact that for the first time ever the management needs of bighorn sheep, including land-use conflicts, water developments, and re-introductions, were addressed.

As a result of management recommendations resulting from implementation of Senate Resolution 43, the Department of Fish and Game implemented an ambitious program to acquire habitat for bighorn sheep occupying the peninsular ranges. Additionally, the Volunteer Desert Water and Wildlife Survey (VDWWS) was founded to help carry out recommendations for water developments put forth by Weaver (1972), and to assist the Department with census efforts and other work related to bighorn sheep and other desert wildlife. Since 1970, volunteers have contributed thousands of hours of labor to the program, resulting in dozens of habitat enhancement projects directed specifically at conserving populations of bighorn sheep (Bleich et al. 1982, Bleich 1990).

An effort to reestablish bighorn sheep on historical ranges also occurred as a result of Senate Resolution 43. The first such effort took place in 1971 at Lava Beds National Monument, and in 1980 a similar effort was initiated in the Warner Mountains. As described previously, both of those attempts ultimately were unsuccessful.

In 1979, translocation of California bighorn sheep from the Mount Baxter herd in the Sierra Nevada was initiated, largely as a result of research conducted by Wehausen (1979) in combination with recommendations by the Department (Leach 1974) that the subspecies be introduced to areas from which it had been eliminated. Since then, a total of 118 animals have been translocated, 108 of which were used to reestablish bighorn sheep populations in three areas of the Sierra Nevada: Wheeler Crest, Mount Langley, and Lee Vining Canyon or to augment other extant populations in that range, and 10 of which were translocated to the Warner Mountains of Modoc County, California. These translocations took place in 1979, 1980, 1982, 1986, 1987, 1988, 2001, 2005, and 2009.

In 1981, Assembly Concurrent Resolution 41 was passed and directed the Department to prepare a study plan to investigate population status, competition,

diseases, and the potential to introduce bighorn sheep to historically occupied areas in California. Funding was allocated from the California Environmental License Plate Fund for the purpose of carrying out the investigations outlined by the Department's study plan (Weaver 1983).

In 1983, the Department completed a statewide management plan for bighorn sheep (California Department of Fish and Game 1983). A number of specific management programs, designed to help meet statewide goals for the management and restoration of bighorn sheep populations, were contained in that plan. Goals specifically listed in the statewide plan are to: (1) maintain, improve, and expand bighorn sheep habitat where possible or feasible; (2) reestablish bighorn sheep populations on historic ranges where feasible; (3) increase bighorn sheep populations so that all races become numerous enough to no longer require classification as threatened or fully protected; and (4) provide for aesthetic, educational, and recreational uses of bighorn sheep. Aside from the specific recommendations of Leach et al. (1974) regarding California bighorn sheep, this was the first official Department document to advocate the reintroduction of all subspecies of bighorn sheep in California.

Subsequently, in 1983 a series of translocation projects involving Nelson bighorn sheep (*O. c. nelsoni*) from two large Mojave Desert mountain ranges began. To date, 230 animals have been removed from Old Dad Peak for translocation to the Whipple Mountains, Sheep Hole Mountains, Eagle Crags, Argus Mountains, Avawatz Mountains, Chuckwalla Mountains, Bristol Mountains, and Bullion Mountains. A total of 55 animals have been removed from the Marble Mountains for translocation to the Whipple Mountains and Eagle Crags (Bleich et al. 1990, Torres et al. 1994).

By 1983, it was determined that the population of Nelson bighorn sheep in the San Gabriel Mountains was large enough to support removals for translocation (Holl and Bleich 1983), and in 1983, 1985, and 1987, a total of 71 animals were removed from winter ranges in the South Fork of Lytle Creek and Cattle Canyon. Those animals were translocated to a vacant, historical winter range in the Prairie Fork of the San Gabriel River (within the San Gabriel Mountains) and to historical habitat near San Rafael Peak, in Ventura County (Bleich et al. 1990). In 1988, 10 sheep were captured in Lone Tree Canyon of the White Mountains, Mono County, and translocated to Silver Canyon, also in the White Mountains, Inyo County. Since 1979, the Department has reestablished 11 new populations and augmented four small populations through

translocation projects.

In 1986, the enactment of Assembly Bill 3117 (Chapter 745) created a series of laws which comprised the most significant legislation affecting bighorn sheep management in California since the 1878 legislation that established the initial moratorium on the taking of bighorn sheep. This law contained language that directed the Department to prepare management plans for each population of bighorn sheep in California. In addition, Assembly Bill 3117 differed from previous legislation that would have authorized hunting in that it: (1) made bighorn sheep a game mammal in only two areas (Old Dad Peak and the Marble Mountains); (2) provided for one hunting tag to be available for fund-raising purposes each year, with the revenues from bighorn sheep hunting to be put in an account set aside solely for the benefit of bighorn sheep; (3) set a biologically conservative limit on the number of tags which could be offered each year, not to exceed 15 percent of the mature males counted annually in each population; and (4) contained an expiration date of December 31, 1992, unless the Legislature extended it beyond that date. In 1990, the Legislature removed the expiration date.

Implementation of Section 4902 of the California Fish and Game Code (Appendix 2) has included hunting of a limited number of mature Nelson bighorn rams since 1987, when specific regulations similar to the proposed action were initially adopted by the Commission. Hunts have been conducted annually since then, pursuant to Section 362 of Title 14, CCR.

Assembly Bill 977 amended sections 4902 and 4903, Fish and Game Code, and thereby (1) permitted the Commission to authorize hunting of Nelson bighorn rams in management units for which plans have been developed pursuant to Section 4901, Fish and Game Code; (2) increased to three the permissible number of fund-raising license tags to be available for programs and projects to benefit bighorn sheep (the number of these authorized, if more than one, would not be permitted to exceed 15 percent of the total number of tags authorized generally); and (3) specified that any use of those revenues for the Department's administrative overhead shall be limited to the reasonable costs associated with direct administration of the program.

The Department's Bighorn Sheep Management Program is currently revising the statewide management plan or bighorn sheep in California. This planning effort will identify and prioritize activities to ensure the long-term viability of bighorn sheep

populations, consistent with existing State policy. Protection of important habitats and inter-mountain movement corridors, identification of future introduction sites, and habitat enhancements will be addressed. This planning effort is occurring in cooperation with the Bureau of Land Management, California Department of Parks and Recreation), Department of Defense (Military), and National Park Service (NPS).

Intensive data collection continues to provide basic information for updating and preparing additional management plans, as required by the California Fish and Game Code. These efforts include assessing habitat and potential movement corridors, and surveys to estimate population sizes, age class structure, sex ratios, sampling individual animals for the prevalence of diseases and parasites, and implementing strategies to stabilize or enhance individual populations of bighorn sheep.

EXISTING REGULATIONS REGARDING BIGHORN SHEEP HUNTING

Regulated public hunting for Nelson's bighorn sheep began in 1987 in California with passage of AB 3117, and has occurred without interruption since that date. Additional public hunts for Nelson's bighorn sheep have been established subsequent to 1987, annual hunts for Nelson's bighorn sheep have been part of the existing conditions in California for the last 24 years. Appendix 1 lists the verbatim for the current and proposed conditions for hunting Nelson's bighorn sheep in California.

POLICY CONSIDERATIONS

The Legislature formulates laws and policies regulating the management of fish and wildlife in California. The general wildlife conservation policy of the State is to encourage the conservation and maintenance of wildlife resources under the jurisdiction and influence of the State (Section 1801 of the California Fish and Game Code). The policy includes the following objectives:

1. To provide for the beneficial use and enjoyment of wildlife by all citizens of the State;
2. To perpetuate all species of wildlife for their intrinsic and ecological values, as well as for their direct benefits to man;
3. To provide for aesthetic, educational, and non-appropriative uses of the various wildlife species;

4. To maintain diversified recreational uses of wildlife, including hunting, as proper uses of certain designated species of wildlife, subject to regulations consistent with the maintenance of healthy, viable wildlife resources, the public safety, and a quality outdoor experience;
5. To provide for economic contributions so the citizens of the State through the recognition that wildlife is a renewable resource of the land by which economic return can accrue to the citizens of the State, individually and collectively, through regulated management. Such management shall be consistent with the maintenance of healthy and thriving wildlife resources and the public ownership status of the wildlife resource;
6. To alleviate economic losses or public health and safety problems caused by wildlife; and
7. To maintain sufficient populations of all species of wildlife and the habitat necessary to achieve the above-stated objectives.

With respect to Nelson's bighorn sheep, the Legislature has established the State's policy regarding management in sections 4900-4904 of the California Fish and Game Code (Appendix 2). Section 4900 declares that bighorn sheep are an important wildlife resource of the state that are to be managed and maintained at sound biological levels, and that it is the policy of the state to encourage the preservation, restoration, utilization, and management of California's bighorn sheep population, and that such management shall be in accordance with the policy set forth in Section 1801 of the Fish and Game Code. Section 4901 directs the Department to determine the status and trend of bighorn sheep populations by management units, and to prepare plans for each of the management units. Each plan is to address (a) the numbers, age, sex ratios, and distribution of bighorn sheep within the management unit; (b) range conditions and any competition that may exist as a result of human, livestock, wild burro, or any other mammal encroachment; (c) the need to relocate or reestablish bighorn populations; (d) the prevalence of disease or parasites within the population; and (e) recommendations for achieving the policy objective of Section 4900.

Section 4902 provides that the Commission (a) may adopt all regulations pertaining to biologically sound management of Nelson bighorn sheep (O. c. nelsoni), including sport hunting of mature Nelson bighorn rams; (b) may not authorize permits in a single year within a single management unit in excess of the Department's annual estimate of the population in that management unit; (c) may determine the fee for a tag

to take a Nelson bighorn ram, but restricts that amount to five hundred dollars; (d) shall annually direct the department to authorize not more than three of the tags available for issuance that year to take Nelson bighorn rams for the purpose of raising funds for programs and projects to benefit Nelson bighorn sheep, that those tags may be sold to residents or nonresidents for fund-raising purposes and shall not be subject to any fee limitation as described in Section 4902(c), specifies certain non-profit organization(s) as the seller(s) of not less than one of those tags if more than one fund-raising tag is authorized, restricts the number of fund-raising tags, if more than one, to no more than 15 percent of the total number of tags authorized to hunt Nelson bighorn rams in any given year, and mandates that all successful applicants complete a hunter familiarization and orientation conducted by the Department prior to hunting.

Section 4903 establishes a special bighorn sheep account into which funds generated from the sale of tags for hunting Nelson bighorn sheep rams shall be deposited and made available solely for programs and projects to benefit bighorn sheep and for the direct costs and administrative overhead incurred solely in carrying out the Department's bighorn sheep activities.

Section 4904 mandates that the Department prepare and submit a biennial report that includes information on any management plans prepared, losses of bighorn sheep, a summary of data used to prepare recommendations pursuant to Section 4902 of the Fish and Game Code, and an assessment of the environmental impacts of hunting mature Nelson bighorn rams on the various herds.

CHAPTER 3. POTENTIAL FOR SIGNIFICANT IMPACTS

Hunting of bighorn sheep will result in the deaths of individual animals. The removal of individual male animals from only 9 populations (Marble Mountains, Old Dad Peak/Kelso Mountains, Clark/Kingston Mountains, Orocopia Mountains, San Gorgonio Wilderness, Sheep Hole Mountains, White Mountains, South Bullion Mountains, and Cady Mountains) is not expected to significantly reduce herd size, or to affect the reproductive base of the population. The proposed action (modification of hunting tag numbers in 7 existing hunt zones and the addition of two hunt zones) will result in maintaining these herds at or above the approved management plan objectives and will maintain the ratio of male to female bighorn sheep at levels adequate to insure reproduction.

The approximately 60 herds of bighorn sheep in California occur from Mono County in the north, to the Mexican border in the south (Torres et al. 1996). These populations are widely distributed, primarily throughout the southeastern part of the State and in the Sierra Nevada. Nelson bighorn sheep, the subspecies currently being considered in the proposed action, number about 4,800 and occur in Mono, Inyo, San Bernardino, San Diego, Riverside, Ventura, Imperial, and Los Angeles counties. Only nine populations of Nelson bighorn sheep are proposed to be hunted. Therefore, the other populations will not be influenced by that activity.

Assuming that all holders of bighorn sheep tags are successful, as many as 32 mature Nelson bighorn rams could be removed in 2011 from the statewide estimated population of 4,800 Nelson bighorn sheep. This short-term reduction of less than one percent of the total statewide population of Nelson bighorn sheep is well within the ability of the statewide population to maintain or increase in size over the long-term. The ability of bighorn sheep populations to experience a given level of hunting mortality without decreasing in health or vitality is described by Savidge and Ziesenis (1980) as sustained-yield management. It is reasonable that a removal of less than one percent of the statewide population is compatible with the long-term conservation of the subspecies. Thus, the removal of up to 32 male bighorn sheep is not expected to have a measurable impact on regional or statewide populations.

Pursuant to Section 4902, Fish and Game Code, the number of tags allocated will not exceed more than 15 percent of the mature rams estimated in any management unit. Depending on the management unit, assessment of aerial or ground survey data will ensure that harvest will not exceed 15 percent of the mature rams in each management unit, as provided for by State law.

Before taking action regarding this proposal, the Commission will consider bighorn sheep populations, habitat, food supplies, the welfare of individual animals, and other pertinent facts and testimony.

THE SPECIES

Population

Under the proposed hunting programs, it is expected that a segment of the mortality previously identified as "natural" mortality will be shifted to hunting mortality. To a degree, hunting mortality will be substituted for, rather than added to, natural mortality. This follows the concept of compensatory mortality as described by Peek (1986) who noted that, "If hunting is a compensatory form of mortality then populations may be presumed to fluctuate in response to other factors, and stocks are little affected by exploitation. However, if hunting is additive to other forms of mortality then it serves as a depressant."

According to the concept of compensatory mortality, the production and survival of young animals within each population are ultimately expected to replace the animals removed by hunting. At the low level of proposed harvest, when combined with differential use of habitats by males and females during the birthing season (Bleich et al. 1997), influences of compensatory mortality are not expected to be measurable. Ongoing long-term demographic research on bighorn sheep populations has been funded to identify the primary factors influencing the abundance of those specialized herbivores. Given the importance and significant variation in annual precipitation in these desert ecosystems, and the associated variation in diet quality, density-dependent mechanisms are difficult to observe (Wehausen 1992), but increased recruitment of young should compensate for increased rates of death resulting from harvest.

Since the hunting of bighorn sheep will occur, at most, in only nine of the State's approximately 60 populations of bighorn sheep under the alternatives considered, the removal of individual animals is not expected to have a significant effect on the statewide population of bighorn sheep. The existing populations of bighorn sheep in California are geographically separated and widely distributed, yet capable of moving among and between mountain ranges (Bleich et al. 1996). Therefore, the proposed action of providing opportunities to harvest no more than 4 male bighorn sheep in the South Bristol Mountains, where a minimum of 32 mature males are estimated to occur, and 5 male bighorn sheep in the Cady Mountains, where a minimum of 61 mature males are estimated to occur, and the total potential statewide harvest of 32 mature Nelson bighorn rams from an estimated population of 4,800 total Nelson bighorn sheep

will not have a significant adverse impact on any specific population to be hunted or on the statewide population of bighorn sheep.

The Department is committed to long-term demographic investigations of bighorn sheep populations. This research is particularly important in management units for which individual bighorn sheep are removed for translocation or harvest. To facilitate this research, animals have been telemetered and monitored in each proposed hunt zone.

The Department annually conducts fall/winter aerial surveys that involve counting bighorn sheep within the majority of the management units being considered in this assessment, and ground counts are conducted during summer in the White Mountains Management Unit. These surveys result in minimum population estimates, because many animals are missed during such surveys. Several published articles (Caughley 1974, Samuel et al. 1987, Graham and Bell 1989, Bodie et al. 1995, Bleich et al. 2001, Bernatas and Nelson 2004) have demonstrated that significant portions of populations being surveyed using aerial census techniques are not observed because of "visibility bias".

In some of the proposed hunt zones, aerial survey data are supplemented with independent ground surveys to record numbers of marked and unmarked sheep, which are used to generate additional information on population size. This synthesis of data has made it possible to accurately assess the changes in bighorn sheep numbers, ratios of males to females or young to females, and to monitor the impacts of hunting and relocation (Wehausen 1992). Additionally, these aerial and ground survey results are used for determining tag allocations, and to ensure that the proposed harvest does not exceed 15 percent of the mature rams in any of the respective management units.

Tag allocations have historically been determined by computing 15 percent of the mature rams observed during the annual surveys. These data are used to adjust the range of tags to be allocated to ensure that tags for no more than 15% of the minimum number of mature males known to be present are harvested. The results of such surveys represent the minimum number of bighorn sheep, including mature males, present in a given population, and result in under-estimates the true population of males and the total population. This procedure will continue to be used to generally assign tag allocations.

Independent estimates of population size and demographic parameters of bighorn sheep populations are derived using a combination of aerial census and ground observations of marked and unmarked animals in the hunt zones, and intensive ground surveys are conducted in the White Mountains. Wehausen (1990) and Jaeger et al. (1992) refer to this method as Multiple Direct Sampling (MDS). This method estimates population parameters from cumulative (or repeated) surveys that record the number of marked and unmarked animals observed, and assumes binomial sampling probabilities with replacement (Wehausen 1992).

The herd plan objectives include maintaining a 40 ram: 100 ewe ratio to provide a reasonable opportunity to view mature rams and insure reproductive success.

Social Structure

Bighorn sheep demonstrate pronounced sexual segregation (rams and ewes separate) during the majority of the year (Bleich et al. 1997). During periods of segregation, competition between the sexes for food and water is limited or nonexistent. In order for density-dependent responses to occur, a reduction in competition between males and females and the offspring of those females must occur if the population size is limited by the habitat. The removal of so few rams, that likely do not compete with females and young to any appreciable extent, is unlikely to result in substantial increases in recruitment of young animals into any population. Nevertheless, enhanced body condition among males, decreased consumption of available resources by bighorn sheep throughout the management unit, and decreased energetic costs resulting from fewer potential interactions among mature males, would be among the compensatory responses expected to occur as a result of the removal of < 15% of mature Nelson bighorn rams from any particular hunt zone, as specified by State law.

The proposed action has the potential to increase the current hunter harvest by one ram each in the Orocopia Mountains, San Gorgonio Wilderness, and White Mountains, thereby altering rate of change of the ratio of males to females in each of those zones. It is unlikely, however, that the proposed action will increase the survivorship of young in those populations, given that males and females live separately for the majority of the year. Moreover, removal of 55 bighorn sheep from the Marble Mountains for translocation during 1983-85 did not result in measurable responses in

recruitment rates (Wehausen 1988). Thus, it is unlikely that the removal of a small number of males from the proposed hunt zones will result in a detectable increase in recruitment rates of young.

Although 230 animals have been removed from Old Dad Peak for translocation purposes since the early 1980s, the population has continued to expand. Recruitment rates have been very high in that population (Wehausen et al. 1987a, 1987b, 1992; Bleich 1986) and the population remains one of the largest in California. Further, the possibility exists that improved habitat conditions, resulting from an aggressive water development program, have produced the high recruitment rates in that population (Bleich 1983). The removal of less than fifteen percent of the total number of rams present in the population is not expected to result in an appreciable increase in recruitment rate.

Genetics

Apollonio et al. (1989) reported that the removal of the majority of successfully breeding males from a population of lek-breeding fallow deer (*Dama dama*) resulted in a decrease of the overall productivity of the lek. Byers and Kitchen (1988) reported that in pronghorn (*Antilocapra americana*), the deaths of all mature males during a severe winter storm was followed by a mating system change from territoriality to harem defense, apparently because no males were sufficiently dominant to exclude other males from a territory. Speculation regarding the removal of large, old males of bighorn sheep, a species in which males form a tending bond with estrous females, thus warrants some consideration (Festa-Bianchet 1989).

It has been hypothesized that harvesting older males may remove the “best genes” from populations of bighorn sheep subject to “trophy hunting”. Fitzsimmons et al. (1995) reported that horn growth was higher males with greater genetic diversity, or heterozygosity, than less heterozygous rams for the 6th, 7th, and 8th years of life, and that by the end of the 8th year males exhibiting the greatest heterozygosity had higher horn volumes than males exhibiting lower heterozygosity.

The unregulated harvest of male bighorn sheep from a small, isolated population of Rocky Mountain bighorn sheep reportedly resulted in significant declines in body size and horn size (Coltman et al. 2003). Moreover, severe rates of selective harvesting that

are unlikely to be implemented by management agencies, potentially elicit an undesired evolutionary response when the targeted trait is heritable, as are size of horns or antlers (Hartl et al. 1991, 1995; Williams et al. 1994, Lukefar and Jacobson 1998, Kruuk et al. 2002). Nevertheless, the only example demonstrating the negative effects of selective harvest of ungulates in North America is that of Coltman et al. (2003), who investigated this phenomenon at Ram Mountain, Alberta, Canada. That population of Rocky Mountain bighorn sheep was small and isolated, but harvest was regulated only by a 4/5 curl regulation, and hunter opportunity essentially was unlimited. As a result, nearly every male was harvested upon attaining legal size, thereby allowing males with slow-growing horns to reach older age classes and do a disproportionate amount of the breeding. As a result, Coltman et al. (2003) concluded that the harvest rate in their study population resulted in selection against the fastest growing males before they reached their reproductive peak, and thereby reduced their genetic contribution to the population. Conversely, Coltman (2008) recognized that the selective effect reported by Coltman et al. (2003) may have been overestimated because it was not possible to account for the confounding effects of changes in population density during their study, a phenomenon that affected nutrient availability among animals in that population. Garel et al. (2007) concluded that selective harvest in a bottlenecked and genetically mixed population of mouflon (*Ovis* spp.) reduced the reproductive contribution of males that possessed a horn conformation desirable to hunters, which ultimately resulted in a selective advantage for smaller-horned males in that population. Neither of the situations described by Coltman et al. (2003) or Garel et al. (2007) are applicable to the harvest of bighorn sheep in California because of the very limited (< 15%) potential harvest of mature males resulting from carefully regulated hunting opportunities.

Despite these observations, selection of large males by hunters may facilitate copulations by younger, smaller-horned males that may not encounter breeding opportunities in the presence of larger males (Hogg 1984). Resultant breeding by subdominant, smaller-horned males has the potential to increase the ratio of effective population size to census population size and, thereby, the potential to increase total genetic diversity within some populations (Singer and Zeigenfuss 2002). The effect of an increase in the ratio of effective population size to census population size would, thus, offset the potential effects of the removal of some dominant males.

The consequences of declines in genetic diversity have also been questioned with respect to their demographic influences. Nevertheless, bighorn sheep that have

been severely impacted by population bottlenecks and have resultant low genetic diversity appear not to be impacting the potential of those populations to recover in size (Wehausen and Ramey 2004). In contrast to the essentially unlimited harvest rates described by Coltman et al. (2003), harvest proposals considered in this document are extremely restricted, and remove but a very small proportion (≤ 15%) of the minimum number of mature males from any single population, and < 1% of the statewide population as a whole. As a result, the limited harvests proposed by the Department will not result in the small population sizes described by Wehausen and Ramey (2004).

Geist (1971) suggested that, if mortality of older males was related to rutting activity, younger males should be expected to suffer greater mortality if allowed to participate in the rut because of the absence of older males. Indeed, Heimer (1980), Heimer et al. (1984), and Heimer and Watson (1986) suggested that the removal of older and larger males by hunters would result in lowered survival of young males. Moreover, Heimer et al. (1984) reported that natural survival of Dall's sheep (*Ovis dalli*) males aged four to eight years was lower in areas with greater hunting pressure and a less restrictive definition of legal males.

In a specific test of Heimer's predictions, Murphy et al. (1990) reported no support for the hypothesis that reducing the number of older males had an adverse effect on the survival rate of young males. Similarly, other studies of *Ovis spp*. (Stewart 1980, Hoefs and Barichello 1984) have failed to demonstrate evidence of depressed survival of young rams in heavily hunted populations. The strongest support for the hypothesis is Heimer et al.'s (1984) study of the high rate of disappearance of young rams that had been trapped and marked, and were part of a hunted population. Murphy et al. (1990) concluded, however, that the disappearance of those young rams could be explained by dispersal and reduced sightability, rather than by reduced survivorship. Males tend to move over larger areas than do females, and their absence in areas they occupied as lambs does not mean they died. Further, Whitten (2001) concluded that sheep harvest trends were driven largely by weather patterns that affected sheep productivity, survival, and abundance, rather than by horn curl regulations. Moreover, in populations of Rocky Mountain bighorn sheep and desert bighorn sheep in which removal rates were carefully regulated and very low, Singer and Zeigenfuss (2002) concluded that young rams did not expend greater energy than young rams in non-hunted populations. Those authors concluded that there was no detectable affect on survivorship of those young rams and that harvesting of mature males did not lower

survivorship of young males.

The nine populations under consideration in this proposed project are dominated by old, large rams. Indeed, in 2009 and 2010, the majority of rams observed were three-quarter curl in all of the proposed hunt zones. Moreover, the low harvest rates proposed to be implemented should not disrupt the age structure and, hence, the social structure of these populations. An analysis of the hunter harvest to date indicates that the average age of all rams taken as of 2009 was about 8.5 years. This mean age is lower than the life expectancy of a desert bighorn sheep, suggesting that harvests are not particularly concentrated on the oldest or largest males; hence, selective removal of the fastest growing males is an unlikely consequence of the limited opportunities being proposed.

The extremely conservative harvest rates in populations dominated by large, mature males have likely precluded any shift in the age structures or genetic diversity of these populations. Even with the combined removal of up to 32 mature Nelson bighorn sheep rams from nine proposed hunt zones, and with a maximum potential of 6 in any single zone, no changes in the age structure of the populations are anticipated, nor are any other adverse effects.

Habitat

The removal of one additional ram from the Orocopia Mountains, San Gorgonio Wilderness, and White Mountains, combined with the removal of up to 3 mature males from the South Bristol Mountains and up to 4 from the Cady Mountains will slightly reduce the total number of bighorn sheep in each of the hunt zones, as well as the statewide population, until the birth of young the following spring. Under the proposed regulations, the maximum number of bighorn sheep that could be removed from any single zone is 6, and that take would be limited to the White Mountains. The maximum number of mature male bighorn sheep that could be removed from any other zone is 5 (Old Dad Peak-Kelso Mountains, Marble/Clipper Mountains, and Cady Mountains). Those rates of harvest could yield some slight improvement in habitat conditions, particularly in areas of those hunt zones that are utilized primarily by adult males. It is unlikely, however, that any substantial improvement in habitat conditions will result, nor that any increase in recruitment rate, will be realized. The maximum number of mature Nelson bighorn rams that would be removed during the 2011 hunting season is 32. The

proposed removal rate and the distribution of animals to be removed among 9 separate hunt zones is again expected to be too low to result in any measurable change in habitat conditions.

Wehausen et al. (1987b) demonstrated a strong relationship between precipitation and recruitment rates in a Sonoran Desert bighorn sheep population. Similarly, Monson (1960) noted the relationship between precipitation and bighorn sheep populations. Beatley (1974) emphasized the relationship between precipitation and phenological events in Mojave Desert ecosystems, and Wehausen (1988, 1990) noted the apparent relationship between high recruitment in the Marble Mountains in the late 1970s and early 1980s and levels of precipitation. Thus, it is likely that timing and amount of precipitation, rather than population levels of bighorn sheep, are the primary factors determining habitat conditions in the proposed hunt zones.

OTHER WILDLIFE AND PLANT SPECIES

The results of the Department's previous determination that no significant impacts would be incurred by other wildlife or plant species as a result of bighorn sheep hunting, as published in the Environmental Document for Bighorn Sheep Hunting (California Department of Fish and Game 2005b) is hereby incorporated by reference and can be found online at http://dfg.ca.gov/wildlife/hunting/sheep/dates.html.

RECREATIONAL OPPORTUNITIES

Hunting Opportunities

The proposed action would authorize up to 10 additional hunting opportunities for taking Nelson bighorn sheep rams, resulting in a maximum of 10 additional hunters participating in this unique outdoor experience. This will be the 25th such hunt in as many years. The demand for bighorn sheep hunting opportunities in California, and worldwide, is extremely high, as described in the Environmental Document for Bighorn Sheep Hunting (California Department of Fish and Game 2005b), and hereby incorporated by reference.

In 2010, all applicants for bighorn sheep tags paid a $7.50 nonrefundable application fee just to enter the drawing, and they must possess a California hunting

license. Additionally, a total of approximately $ 3.6 million has been received through the auction of fundraising tags from 1987 – 2010. The proposed action will positively impact the hunting public of the State by providing hunting opportunities consistent with sections 203.1 and 4902, Fish and Game Code, and the State's wildlife conservation policy, contained in Section 1801 of the Fish and Game Code, and will provide funds specifically for the conservation and restoration of bighorn sheep in California, consistent with Sections 4902 and 4903 of the Fish and Game Code.

As noted in the Environmental Document for Bighorn Sheep Hunting (California Department of Fish and Game 2005) and incorporated herein by reference, there will be overlap of upland game (quail and chukar), rabbit, predator, and deer hunting seasons in two additional hunt areas for a portion of the year. However, due to the low numbers of sheep hunters in each area, coupled with the large areas open to hunting, it is unlikely that sheep hunters will affect hunters of other species of wildlife in terms of hunter success or quality of experience.

Nonhunting Opportunities

As noted in the Environmental Document for Bighorn Sheep Hunting (California Department of Fish and Game 2005) and incorporated herein by reference, the non-hunting users of the bighorn sheep resource (viewing, nature study, research, photography) are not expected to be significantly impacted by the take of up to 32 mature bighorn sheep rams from a statewide population of that now numbers approximately 5,200 animals. No populations of bighorn sheep occurring in 52 other mountain ranges will be exposed to hunting as a result of this project and, as a result, opportunities for non-hunting uses of those populations will not be affected.

ECONOMICS

As noted in the Environmental Document for Bighorn Sheep Hunting (California Department of Fish and Game 2005b) and incorporated herein by reference, the proposed action has the potential to result in an insignificant positive economic effects on communities located near the proposed sheep hunting areas.

Under the proposed alternative, hunters from outside the local areas would continue to visit the region and purchase goods and services from local merchants.

This additional spending will generate retail sales, income, and possibly employment in businesses such as motels, restaurants, and retail stores. Spending effects would be minor, because of the small number of tags sold. Any potential effects would likely be distributed among those communities located nearest to the sheep hunt areas, including Barstow, Baker, Blythe, Cadiz, Ludlow, Indio, Morongo Valley, Desert Center, Needles, Twenty-Nine Palms, and Amboy, in Riverside, San Bernardino, Inyo, and Imperial counties.

PUBLIC SAFETY

Since 1987, the Department has not received any reports of bighorn sheep hunting related casualties in California, as discussed in the Environmental Document for Bighorn Sheep Hunting (California Department of Fish and Game 2005b) and incorporated herein by reference.

SHORT-TERM USES AND LONG-TERM PRODUCTIVITY

The proposed project allows an increase of up to 10 successful bighorn sheep hunters, bringing the potential harvest to a total of 32 animals distributed across 9 hunt zones, assuming that the maximum number of tags is allocated. As noted in the Environmental Document for Bighorn Sheep Hunting (California Department of Fish and Game 2005b) and incorporated herein by reference, this short-term use could enhance long-term productivity by reducing competition for forage but, given the extremely limited harvest, any reduction in intraspecific competition would be negligible and likely undetectable.

If the proposed project were delayed, no significant long-term impact on the population would be expected. However, this delay would eliminate the proposed allocation of additional hunting opportunities as per the Department's bighorn sheep management program, and would not address the high demand for more recreational hunting opportunities involving bighorn sheep or be consistent with State policy regarding bighorn sheep management.

As noted in the Environmental Document for Bighorn Sheep Hunting (California Department of Fish and Game 2005b) and incorporated herein by reference, the proposed action of removing a maximum of 32 mature Nelson bighorn sheep rams by

hunting will not have a significant long-term adverse impact on either the specific populations to be hunted or on the statewide population of bighorn sheep.

CHAPTER 4. CUMULATIVE IMPACTS

As noted in the Environmental Document for Bighorn Sheep Hunting (California Department of Fish and Game 2005b) and incorporated herein by reference, the Commission could consider and may approve additional hunts in the future, and the Department has concluded that there will be no significant adverse cumulative effects on the State's bighorn sheep resource is the proposed project is implemented. The statutorily mandated regulation process involves review at least once every three years, and data are collected by the Department during each year, appropriate, biologically sound recommendations would be presented by the Department to the Commission prior to consideration of any future hunt. Existing law requires that the Commission receive recommendations regarding mammal hunting regulations from Commission members, its staff, the Department, other public agencies and the public. The process is comparable to the Commission establishing specific harvest quotas or regulations for deer, elk, and pronghorn antelope seasons annually, and has worked well over time in adjusting the hunting program to maintain healthy populations of the aforementioned species.

HABITAT LOSS OR DEGRADATION

As noted in the Environmental Document for Bighorn Sheep Hunting (California Department of Fish and Game 2005b) and incorporated herein by reference, the proposed project, in combination with current bighorn hunts and other factors, is not likely to cause habitat loss and degradation. A maximum of 32 hunters, their guides, and selected individuals will participate in the bighorn sheep hunt. Given the low densities of human use, any habitat loss and degradation attributable to the proposed project would be negligible. Therefore, the cumulative environmental impact of habitat loss and the proposed project will not be significant.

DROUGHT

As noted in the Environmental Document for Bighorn Sheep Hunting (California Department of Fish and Game 2005b) and incorporated herein by reference, drought

can have an impact on local populations of bighorn sheep, and droughts are a natural occurrence with which bighorn sheep have been faced throughout their evolutionary history. Further, drought conditions are generally localized, both spatially and temporally. The removal of no more than 32 mature Nelson bighorn sheep rams would, in fact, decrease competition among males for available forage within hunt zones, but the effects of such a reduction in competition would be difficult to detect. Further, the possibility of drought impairing the bighorn sheep population on a statewide basis is unlikely. It is anticipated that the statewide population will remain in a healthy, viable condition, even though dynamic weather patterns may affect some populations in some years.

WILDFIRES

As noted in the Environmental Document for Bighorn Sheep Hunting (California Department of Fish and Game 2005b) and incorporated herein by reference, the sparse vegetation and lack of fuel makes it unlikely that wildfires have the potential to adversely affect bighorn sheep in the majority of the hunt zones. However, the San Gorgonio Wilderness occurs in an area of potential wildfires, and a wildfire burned portions of the Hackberry Mountains and Providence Range during recent years. Most research has shown burning, especially prescribed burning, to be favorable to bighorn sheep and deer. These fires maintain movement corridors, escape terrain, and provide new herbaceous vegetation, which is higher in nutrition than decadent vegetation and, ultimately, enhance nutrient availability to animals foraging in newly burned areas.

DISEASE, ROAD KILLS AND OTHER MORTALITY

As noted in the Environmental Document for Bighorn Sheep Hunting (California Department of Fish and Game 2005b) and incorporated herein by reference, there are no data available to indicate that road kills, disease, predation, or natural mortality factors will act as additive impacts which, along with the mortalities associated with the limited hunting program, will have significant adverse cumulative impacts on local, regional or statewide bighorn sheep populations. The Department does not anticipate any significant impacts resulting from disease in combination with the proposed hunting project.

ILLEGAL HARVEST

As noted in the Environmental Document for Bighorn Sheep Hunting (California Department of Fish and Game 2005b) and incorporated herein by reference, the Department has documented annually approximately one to three cases of bighorn sheep being killed illegally statewide; four such incidents currently are being investigated. The verified illegal take involves an extremely low proportion of the State's approximately 5,200 bighorn sheep and is widely distributed. Illegal take does not appear to be a significant factor affecting the population and, even with the potential harvest of up to 32 bighorn sheep statewide, the cumulative impacts of illegal harvest are not expected to be significant. Since the bighorn sheep outside the hunt zones are either fully protected or State-listed species, detecting and preventing illegal take is a high priority for the Department.

DEPREDATION

As noted in the Environmental Document for Bighorn Sheep Hunting (California Department of Fish and Game 2005b) and incorporated herein by reference, the Department does not have the authority to issue kill permits for bighorn sheep causing property damage (Section 4181, Fish and Game Code).

THE INDIVIDUAL ANIMAL

As noted in the Environmental Document for Bighorn Sheep Hunting (California Department of Fish and Game 2005b) and incorporated herein by reference, the preferred project will result in the deaths of individual bighorn sheep, and wounding losses could occur as a result of implementation of the proposed project. However, the Department is aware of only one animal having been lost after being wounded in 24 hunting seasons. Thus, the rate of wounding is extremely low, and the cumulative impacts of the potential harvest of 32 bighorn sheep statewide, combined with the exceedingly low rate of wounding, would not result in an impact that could be considered to significantly impact the population of bighorn sheep inhabiting any hunt zone, or the state of California as a whole.

GLOBAL CLIMATE CHANGE

Climate changes caused by increasing atmospheric concentrations of greenhouse gases are expected to result in marked changes in climate throughout the world (deVos and McKinney 2007). Although many wildlife habitats in North America have become progressively warmer and drier in the last 12,000 years (Lane et al. 1994, Ball et al. 1998), the greatest rate of change has occurred during the last 150 years (Fredrickson et al. 1998). Predicted changes due to continued warming include increased frequency and severity of wildfires, increased frequency of extreme weather events, regional variation in precipitation, northward and upward shifts in vegetative communities, and modifications to existing biotic communities (Bachelet et al. 2001, McCarty 2001, Walther et al. 2002). These changes are expected to affect abundance, distribution, and structure of vegetative and animal communities (Kapelle et al. 1999).

Local and specific regional changes in climate and associated changes in vegetative communities will be the determining factors regarding the distribution and abundance of bighorn sheep in California and elsewhere. Although research specific to bighorn sheep responses to climate change is limited, what information that is available indicates that those populations inhabiting the hottest, low-lying mountain ranges will be among the first to be impacted (Epps et al. 2004), but those populations inhabiting the highest and most botanically diverse desert ranges may be less affected, and serve as refugia for the species (Epps et al. 2006). Moreover, some areas occupied by bighorn sheep may experience increases in the quality of habitat (Epps et al. 2006).

Populations of bighorn sheep in California are vulnerable to any decrease in habitat quality as mediated by climate change (Epps et al. 2006) For example, higher spring and summer temperatures will result in reduced diet quality for bighorn sheep (Epps 2004), and extended droughts and drying of water sources may produce die-offs of adult animals (Allen 1980). Among bighorn sheep inhabiting desert environments, diet quality or forage availability influence body condition, which affects reproduction and recruitment rates (Wehausen 2005) and, ultimately, population size. Thus, future changes in climate that result in warmer temperatures or greater aridity have the potential to result in fewer bighorn sheep in desert ecosystems (Epps et al. 2006). Nevertheless, habitat conditions in some areas that currently are occupied by bighorn sheep, for example the San Gabriel Mountains and other transverse ranges of

California, may experience changes that will be of benefit to bighorn sheep (Epps et al. 2006) as a result of lower densities of vegetation (Epps et al. 2006). Thus, information that currently is available indicates that global climate change portends both adverse and beneficial effects to bighorn sheep habitat and, ultimately, bighorn sheep populations.

Bighorn sheep hunting in California is regulated by the California Fish and Game Commission. Hunting seasons and tag quotas are proposed to the Commission for adoption on an annual basis. These seasons and quotas are based on annual population estimates as dictated by the California Legislature (Fish and Game Code Section 4902), and are adjusted each year. Although the impacts of climate change on bighorn sheep in California could be positive in some instances, they most certainly will be negative in others. Nevertheless, the Department and the Commission have the ability to quickly respond to population fluctuations by increasing or decreasing hunter opportunity in accordance with current and future management objectives for this species. Reducing one mortality factor, for example sport hunting, will not alone mitigate for impacts associated with global climate change; the ability to manage and provide adequate amounts of resources, both nutritional and otherwise, will be the factor that ultimately dictates which populations persist, and which do not.

CHAPTER 5. ALTERNATIVES TO THE PROJECT

The Department considered two alternatives to the proposed project, which would create two additional zones in which the hunting of bighorn sheep will be legal, place constraints on the way that hunting effort would be distributed among holders of special fund-raising tags, and change the boundary of one existing hunt zone.

ALTERNATIVE 1 – NO CHANGE

The "no-change" alternative would continue to provide hunting opportunities for mature Nelson bighorn rams in the 7 hunt zones that currently are open to that activity, the range of tags available to hunt bighorn sheep in each of those zones would remain the same, and would not be subject to adjustment as determined by the Department's annual population estimates as specified in Section 4901 of the Fish and Game Code. In short, there would be no change from the 2010 bighorn sheep hunting regulations.

This alternative would continue to provide 2 special bighorn sheep tags for fund-raising purposes, and distribution of hunting effort by hunters holding those fund-raising tags would remain unrestricted. The "no-change" alternative would preclude any adjustments to hunting opportunities associated with the fund-raising tags, and could result in the harvest of more than 15% of mature Nelson bighorn rams estimated to be present in any of the 7 open hunt zones if individuals holding fund-raising tags all elected to hunt in the same open zone along with other hunters drawn for that zone, an outcome inconsistent with existing State law as specified in Section 4902 of the Fish and Game Code.

Bighorn sheep now occupy the South Soda Mountains, which is included within the existing boundary of the Old Dad Peak - Kelso Mountains Hunt Zone, and currently is open to hunting. The Department's goal of allowing the population of bighorn sheep in the South Soda Mountains to increase in size at its maximum potential rate would not be realized, and would be inconsistent with the Department's overall strategy of encouraging natural colonizations of historical ranges.

On a statewide basis, the total number of mature Nelson bighorn sheep rams potentially harvested would remain unchanged, but opportunities to provide additional recreational hunting opportunity, consistent with the approved management plans for the Cady Mountains and South Bristol Mountains bighorn sheep hunts, would not be realized. Under this alternative, it is possible that support for bighorn sheep management programs by interested conservation groups and hunters would decline. This decline could result from reducing the value of bighorn sheep to a segment of the public by unnecessarily preventing the hunting of an additional, albeit very limited, number of mature rams. These groups have provided support, both politically and financially (Bleich et al. 1982), for bighorn sheep management in California and have been the primary supporters of habitat protection and improvement projects (Bleich 1990). Without the continuing support of these individuals and organizations, it is possible that activities associated with the protection and enhancement of bighorn sheep habitat and the political support for the Department's conservation and restoration program would be reduced.

ALTERNATIVE 2 – INCREASED HARVEST

The ranges of potential hunting tags available for each zone is intentionally conservative, and is based on the number of mature rams that are known to exist in any given zone, or on the number of mature rams estimated to be present following application of an extremely conservative correction factor (N/0.80) that assumed aerial surveys resulted in observations of 80% of the animals present; Wehausen and Bleich (2007) reported that aerial surveys in an ecologically similar mountain range produced observations of < 50% of the total number estimated to be present using mark-resight methods. To increase the harvest beyond the range of tags proposed by the Department (Appendix 1) could result in a violation of state law if the end result exceeded more than 15% of the total number of mature Nelson bighorn sheep rams known to be, or estimated to be, present in any single hunt zone. Even if the very conservative proposed rates of harvest could be increased, and yet the total harvest remained at or below 15% of the total number of mature Nelson bighorn rams known to be, or estimated to be, present in each of the hunt zones, the potential for negative interactions among participants would increase, resulting in a decline in the quality of this special hunting experience. Under the ”increased harvest” alternative, it is possible that support for bighorn sheep management programs among interested conservation groups and hunters would decline, because conservation has been at the forefront of issues affecting bighorn sheep. An increased rate of harvest would not have unanimous support among bighorn sheep advocacy groups.

The Department has concluded that the proposed project will not have a significant adverse effect on the environment. No mitigation measures or alternatives to the proposed project are needed.

CHAPTER 6. PUBLIC REVIEW AND COMMENTS

Public input and agency consultation were encouraged throughout the draft environmental document review process. A Notice of Preparation (NOP) was provided to the State Clearinghouse, land management agencies having a key role in desert bighorn sheep management and all individuals and organizations which expressed an interest in bighorn sheep management. The DED was made available for public review on February 3, 2011 and comments were due by March 21, 2011. It was mailed to 181 libraries located throughout California and was made available on the Department's website.

During the 45-day notice period one comment letter was received from Marilyn Jasper of the Public Interest Coalition. The Department appreciates the effort and time this organization put forth into comments regarding the DED.

1. Comment: Non-Hunting Opportunities to view, study, research or photograph bighorn sheep have to be significantly impacted when the kill quota is increased. For every ram killed, there is one less chance for the non-hunting citizen to observe bighorn sheep. Thus, raising the kill quota is a significant impact in regard to wildlife recreation for the non-hunting public.

   Response: The DED disclosed changes to the current project which proposes adjusting tag quotas, establishing two additional hunt zones, modifying hunt zone boundaries and establishing the zones in which tags for fund-raising purposes are valid. As described on page 1, the proposed project will increase the kill of mature rams from 22 to as many as 32. As described on pages 19—20 of the DED, at the maximum level of kill, the bighorn sheep population in the hunt areas will be slightly reduced from 4,800. Non-hunting opportunities were previously analyzed in the 2005 Final Environmental Document Regarding Bighorn Sheep Hunting which has been incorporated by reference into the current document as described on page 28 of the current document.

2. Comment: Economics may be negatively impacted by hunters. Non-hunting tourists do not want to be exposed to lethal weaponry or be any where near a "firing," a wounding, or a kill. Since there are more tourist to the various sheep hunt areas than hunters, it is logical to assume that the impacts to the local

economy will be negative. Please consider reducing the number of areas to be opened to bighorn sheep hunting, rather than increasing them.

Also, after being fired at, all sheep will be "skittish" and tend to stay out of sight of human non-hunting visitors, thus making it even more difficult to see (observe/photograph/study, etc.) bighorn sheep.

Response: The DED disclosed changes to the current project. Economic impact near hunt areas and non-hunting opportunities were previously analyzed in the 2005 Final Environmental Document Regarding Bighorn Sheep Hunting on pages 97 –98. At the maximum kill quota, there will be on 32 hunters throughout over 400,000 acres of bighorn sheep range in California. As disclosed on page 18, 51 sheep populations are not included in the area open to hunting.

3. Comment: It is a bit of a stretch to believe that only one sheep has been lost after being wounded in 24 hunting seasons. It might be more accurate to state that only one hunter admitted to wounding and losing a big horn sheep. How many hunters will volunteer to DFG that they wounded and lost a sheep, let alone any animal? To base the claim, "Thus the rate of wounding is extremely low," on one person's reporting to DFG that he wounded and lost a bighorn sheep is not scientifically justifiable. One can just as easily conclude that many more are wounded and lost, and that the conclusions in the DED are either highly exaggerated or naively optimistic.

   The pursuit of sheep can and does cause extreme stress, which can be exacerbated in severe weather conditions and have long-term negative impacts. Because extreme or severe weather conditions are not unusual in bighorn sheep habitat, please consider no hunt days when weather conditions are likely to increase sheep distress levels to significant impact levels. The ability of the sheep to flee could attribute to lack of "wounding" statistics; they exist, but the hunter does not observe them to report back.

   DFG is mandated by Section 203.1 of the California Fish and Game Code to consider the welfare of individual animals. Please address how the welfare of any bighorn sheep is impacted with chase, blasts from firearms, wounding, and any other hunt/hunter stress-producing activities[1].

This DED is silent on sheep bow hunting. With sheep, bow hunting should not be allowed, in part because of the exorbitantly high wounding rates and loss[2]. Please recognize the wounding/infection's significant negative impact and insert language to prohibit bow or archery hunting with sheep.

Response: The DED disclosed changes to the current project. Wounding and infection as a result of archery hunting were previously addressed on pages 110-111 in the 2005 Final Environmental Document Regarding Bighorn Sheep Hunting.

4. Comment: We are grateful that the DFG and FGC can respond quickly to population fluctuations. However, the potential severity of Climate Change impacts is too volatile to gamble with. We urge DFG and FGC to follow the Precautionary Principle and issue fewer tags and reduce the number of open hunt areas, rather than issuing additional tags and opening more hunt areas.

   Response: The Department has addressed the potential influences of climate change on bighorn sheep on pages 33--34 in the 2011 Draft Environmental Document Regarding Bighorn Sheep Hunting. Global climate has become progressively warmer over thousands of years (Lane et al. 1994, Ball et al. 1998). The Commission makes regulatory changes on an annual basis and would be able to respond to climate change when adopting changes in hunting seasons, zones and tag quotas.

   Since 1987, the Commission has adopted regulations to provide for bighorn sheep hunting. The adoption of projects that include an increase in hunting zones and tags are adjusted annually to match legislative mandate, ensuring a conservative and regulated take of mature rams.

   Furthermore, the Commission has the authority to close the taking of bighorn sheep as added protection against factors such as climate change pursuant to Fish and Game Code section 314. There is no documentation to suggest that climate change is likely to occur in a significant and rapid manner that would affect the project in 2011.

5. Comment: Possibly it's understood or stated elsewhere, but this DED and any changes in regulations must reiterate that no dogs may be used in any type of sheep hunting. The absence of mentioning that rule can open the door to huge problems. Please insert the language in the DED and the Final Enviro Documents.

   Response: The DED disclosed changes to the current project. Furthermore, the use of dogs is prohibited for the take of bighorn sheep under Title 14 CCR §265.

6. Comment: This DED does not provide enough information on compliance with existing hunting regulations. What is the rate of compliance with the requirement that "All tags must be returned to the DFG within 10 days after the close of the season, even though the tag holder may not have killed a Nelson bighorn ram?" And what is the rate of compliance with the 24 hour notice and/or 48-hour validation after killing? Without that information, how accurate and reliable can DFG's statistics be? We cannot rely on assumptions to establish hunt regulations on such an important species.

   Response: The DED disclosed changes to the current project which proposes adjusting tag quotas, establishing two additional hunt zones, modifying hunt zone boundaries and establishing the zones in which tags for fund-raising purposes are valid. The Department's hunt tag statistics are not used to determine tag allocation for bighorn sheep hunt zones; tag allocations are derived from survey data collected from each hunt zone. Because bighorn sheep hunting is a unique experience, hunters are required as per Fish and Game Code Section 4902 (e) to participate in pre-hunt orientation meetings. The Department has received 100 percent of the tags that were issued as over 95% percent of the hunters have been successful since 1987.

7. Comment: Limiting the fee for a Nelson bighorn ram to less than five hundred dollars ($500) is woefully low and short sighted. The killing or wounding of one ram has huge impacts on the non-hunting millions of citizens who would enjoy seeing and photographing a ram. To allow the kill/wound opportunity for a mere $500 is a give away of our natural resource. The fee should start at $1,000 and have no upper "limit." In addition to justifying increased tag fees for intangible reasons (non-hunter wildlife recreation), real or tangible costs for Game Warden

resources and DFG research (and/or the “Fish and Game Preservation Fund) should be fully factored into the fee. If the high bid of $80,000 is accurate for one open-zone fundraising tag, then a $500 tag fee limit brings new meaning to “take” of a public resource.

Response: The fee for the purchase of bighorn sheep tag is limited by the legislation as described by Fish and Game Code Section 4902. As discussed in response to comment number 1, at the maximum number of tags, the statewide bighorn sheep population would be reduced by about one-half of one percent.

8. Comment: There is no discussion of grazing (all livestock possibilities) and its impacts on the bighorn sheep populations. The negative impacts of grazing on bighorn sheep should be thoroughly examined and the issuance of tags lowered accordingly.

   Response: Grazing of domestic livestock near bighorn sheep was previously analyzed in the 2005 Final Environmental Document Regarding Bighorn Sheep Hunting.

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Appendix 1.
Regulatory Language for 2010 Bighorn Sheep Hunting with Proposed Changes

§362. Nelson Bighorn Sheep.

(a) Areas:

(1) Zone 1 -Marble/Clipper Mountains: That portion of San Bernardino County beginning at the intersection of Kelbaker Road and the National Trails Highway; north on Kelbaker Road to the junction with Interstate Highway 40; east on Interstate Highway 40 to the intersection with National Trails Highway; southwest on National Trails Highway to junction with Kelbaker Road.

(2) Zone 2 -Kelso Peak and Old Dad Mountains: That portion of San Bernardino County beginning at the intersection of Kelbaker Road and the Union Pacific Railroad in Kelso; southwest along the Union Pacific Railroad to intersection with unnamed road at Crucero; north on unnamed road to the ~~junction~~ merging with ~~Rasor~~ Mojave Road; north~~west~~east on ~~Rasor~~ Mojave Road to the junction with Zzyzx Road; north on Zzyzx Road to intersection with Interstate Highway 15; northeast on Interstate Highway 15 to the intersection with Cima Road; south on Cima Road to the intersection with the Union Pacific Railroad in Cima; southwest on the Union Pacific Railroad to the intersection with Kelbaker Road in Kelso.

(3) Zone 3 -Clark and Kingston Mountain Ranges: That portion of San Bernardino and Inyo counties beginning at the intersection of Interstate Highway 15 and California State Highway 127 in Baker; north on California State Highway 127 to the junction with Old Spanish Gentry Road ~~on~~at Tecopa; southeast on Old Spanish Gentry Road to the junction with Furnace Creek Road; southeast on Furnace Creek Road to the junction with Mesquite Valley Road; north on Mesquite Valley Road to Old Spanish Trail Highway; north and east on Old Spanish Trail Highway to California/Nevada state line; southeast on California/Nevada state line to the intersection with Interstate Highway 15; southwest on Interstate Highway 15 to the junction with California State Highway 127.

(4) Zone 4 -Orocopia Mountains: That portion of Riverside County beginning at the intersection of Interstate Highway 10 and Cottonwood Springs Road; east on Interstate Highway 10 to the junction with Red Cloud Mine Road; south on Red Cloud Mine Road to the junction with the Eagle Mountain Mining Railroad; southwest on the Eagle Mountain Mining Railroad to the junction with the Bradshaw Trail; southwest on the Bradshaw Trail to the Intersection with the Coachella Canal; west along the Coachella Canal to the junction with Box Canyon Road; northeast on Box Canyon Road to the junction with Cottonwood Springs Road; north on Cottonwood Springs Road to the intersection with Interstate Highway 10.

(5) Zone 5 -San Gorgonio Wilderness: That portion of Riverside and San Bernardino counties beginning at the intersection of Interstate Highway 10 and California State

Highway 62, west on Interstate Highway 10 to the junction with California State Highway 30; north on California State Highway 30 to the junction with California State Highway 38; east and north on California State Highway 38 to the junction with Forest Service Route 1N01; east on Forest Service Route 1N01 to its joining with Pipes Road; east on Pipes Road to the junction with Pioneertown Road; southeast on Pioneertown Road to the junction with California State Highway 62; southwest on California State Highway 62 to the intersection with Interstate Highway 10.

(6) Zone 6 -Sheep Hole Mountains: That portion of San Bernardino County beginning at the junction of California State Highway 62 and Ironage Road; northwest on Ironage Road to the intersection with Amboy Road; north on Amboy Road to the intersection with National Trails Highway; east on National Trails Highway to the junction with Saltus Road; southeast on Saltus Road to the junction with unnamed road in Saltus that runs through Cadiz Valley; southeast on unnamed road to the intersection with California State Highway 62; west on California State Highway 62 to the junction with Ironage Road.

(7) Zone 7 -White Mountains: That portion of Mono County within a line beginning at U.S. Highway 6 and the Mono-Inyo county line; northward on Highway 6 to the California-Nevada State Line; southeasterly along the California-Nevada State Line to the Mono-Inyo County Line; westward along the Mono-Inyo County Line to the point of beginning.

(8) Zone 8 –South Bristol Mountains: That portion of San Bernardino County beginning at the junction of Kelbaker Road and the National Trails Highway; west on the National Trails Highway to the intersection with Interstate Highway 40; east on Interstate Highway 40 to the junction with Kelbaker Road; south on Kelbaker Road to the point of beginning.

(9) Zone 9 –Cady Mountains: That portion of San Bernardino County beginning at the junction of Interstate Highway 40 and Newberry Road; north on Newberry Road to intersection with Riverside Road; East on Riverside Road to junction with Harvard Road; north on Harvard Road to junction with Interstate Highway 15; northeast on Interstate Highway 15 to junction with Basin Road; south on Basin Road to intersection with Union Pacific Railroad; east on Union Pacific Railroad to intersection with Crucero Road; south on Crucero Road to intersection with Interstate Highway 40; west on Interstate Highway 40 to the point of beginning.

(b) Seasons:

(1) Open Zone Fund-raising Tag: The holder of the fund-raising license tag issued pursuant to subsection 4902(d) of the Fish and Game Code may hunt:

(A) Zones 1 through 4, ~~and~~ 6, 8 and 9: Beginning the first Saturday in November and extending through the first Sunday in February.
(B) Zone 5: Beginning the third Saturday in November and extending through the third Sunday in February.
(C) Zone 7: Beginning the first Saturday in August and extending through the last Sunday in September.
(2) Marble/Clipper/~~Sheep Hole~~South Bristol Mountains Fund-raising Tag: The holder of the fund-raising license tag issued pursuant to subsection 4902(d) of the Fish and Game Code may hunt:
(A) Zones 1 and ~~6~~8: Beginning the first Saturday in November and extending through the first Sunday in February.
(3) Kelso Peak and Old Dad Mountains Fund-raising Tag: The holder of the fund-raising license tag issued pursuant to subsection 4902(d) of the Fish and Game Code may hunt:
(A) Zone 2: Beginning the first Saturday in November and extending through the first Sunday in February.
(4) Except as provided in subsection 362(b)(1), the Nelson bighorn sheep season in the areas described in subsection 362(a) shall be defined as follows:
(A) Zones 1 through 4, ~~and~~ 6, 8 and 9: The first Saturday in December and extend through the first Sunday in February.
(B) Zone 5: The third Saturday in December and extend through the third Sunday in February.
(C) Zone 7: Beginning the third Saturday in August and extending through the last Sunday in September.
(5) Except as specifically provided in section 362, the take of bighorn sheep is prohibited.
(c) Bag and possession Limit: One mature ram defined as follows: a male Nelson bighorn sheep (Ovis canadensis nelsoni) having at least one horn, the tip of which extends beyond a point in a straight line beginning at the front (anterior) edge of the horn base, and extending downward through the rear (posterior) edge of the visible portion of the eye and continuing downward through the horn. All reference points are based on viewing the ram directly from a 90 degree angle from which the head is facing. A diagram showing the correct viewing procedure shall be distributed by the department to each successful applicant.
(d) Number of License Tags:

Nelson Bighorn Sheep Hunt Zones for 201~~0~~1

Tag	Allocation
Zone 1 - Marble/Clipper Mountains	3-4
Zone 2 - Kelso Peak/Old Dad Mountains	3-4
Zone 3 - Clark/Kingston Mountain Ranges	2
Zone 4 - Orocopia Mountains	1-2
Zone 5 - San Gorgonio Wilderness	2-3
Zone 6 - Sheep Hole Mountains	1-2
Zone 7 - White Mountains	3-5
Zone 8 - South Bristol Mountains	2-3
Zone 9 - Cady Mountains	3-4
Open Zone Fund-Raising Tag	1
Marble/Clipper/~~Sheep Hole~~South Bristol Mountains Fund-Raising Tag	1
Kelso Peak/Old Dad Mountains Fund-Raising Tag	1
Total:	22-32

(e) Conditions:

(1) Nelson bighorn rams shall only be taken between one-half hour before sunrise and one-half hour after sunset.

(2) Only methods specified in sections 353 and 354, Title 14, CCR, for taking bighorn sheep may be used.

(3) Each tagholder shall possess a spotting telescope capable of magnification of 15 power (15X), which is not affixed to a rifle, while hunting.

(4) Successful general tagholders shall present the head and edible portion of the carcass of a bighorn ram to the department's checking station within 48 hours after killing the animal. All successful tagholders shall notify the department's Bishop office by telephone at (760) 872-1171 or (760) ~~240~~413-~~1372~~9596 within 24 hours of killing the animal and arrange for the head and carcass to be examined.

(5) All successful bighorn sheep tagholders shall make the horns of each ram available to the department to be permanently marked in the manner prescribed by the department for identification purposes within 48 hours of killing the animal. The purpose of the permanent marking shall be to identify Nelson bighorn rams which were legally taken and which may be transported and possessed outside the areas described in subsection 362(a).

(6) The department reserves the right to take and use any part of the tagholder's bighorn ram, except the horns, for biological analysis as long as no more than one pound of edible meat is removed.

Note: Authority cited: Sections 200, 202, 203, 220, 1050 and 4902, Fish and Game Code. Reference: Sections 200, 202, 203, 203.1, 207, 1050, 3950 and 4902, Fish and Game Code.

Appendix 2.
California Fish and Game Code
Chapter 11. Bighorn Sheep

4900. The Legislature declares that bighorn sheep are an important wildlife resource of the state to be managed and maintained at sound biological levels. Therefore, it is hereby declared to be the policy of the state to encourage the preservation, restoration, utilization, and management of California's bighorn sheep population. The management shall be in accordance with the policy set forth in Section 1801.

4901. The department shall determine the status and the trend of bighorn sheep populations by management units. A plan shall be developed for each of the management units. The plan for each management unit shall include all of the following:

(a) Data on the numbers, age, sex ratios, and distribution of bighorn sheep within the management unit.

(b) A survey of range conditions and a report on the competition that may exist as a result of human, livestock, wild burro, or any other mammal encroachment.

(c) An assessment of the need to relocate or reestablish bighorn populations.

(d) A statement on the prevalence of disease or parasites within the population.

(e) Recommendations for achieving the policy objective of Section 4900.

4902. (a) The commission may adopt all regulations necessary to provide for biologically sound management of Nelson bighorn sheep (subspecies Ovis canadensis nelsoni).

(b) (1) After the plans developed by the department pursuant to Section 4901 for the management units have been submitted, the commission may authorize sport hunting of mature Nelson bighorn rams. Before authorizing the sport hunting, the commission shall take into account the Nelson bighorn sheep population statewide, including the population in the management units designated for hunting.

(2) Notwithstanding Section 219, the commission shall not,

however, adopt regulations authorizing the sport hunting in a single year of more than 15 percent of the mature Nelson bighorn rams in a single management unit, based on the department's annual estimate of the population in each management unit.

(c) The fee for a tag to take a Nelson bighorn ram may be determined by the commission, but shall not exceed five hundred dollars ($500).

(d) The commission shall annually direct the department to authorize not more than three of the tags available for issuance that year to take Nelson bighorn rams for the purpose of raising funds for programs and projects to benefit Nelson bighorn sheep. These tags may be sold to residents or nonresidents of the State of California at auction or by another method and shall not be subject to the fee limitation prescribed in subdivision (c). Commencing with tags sold for the 1993 hunting season, if more than one tag is authorized, the department shall designate a nonprofit organization organized pursuant to the laws of this state, or the California chapter of a nonprofit organization organized pursuant to the laws of another state, as the seller of not less than one of these tags. The number of tags authorized for the purpose of raising funds pursuant to this subdivision, if more than one, shall not exceed 15 percent of the total number of tags authorized pursuant to subdivision (b).

(e) No tag issued pursuant to this section shall be valid unless and until the licensee has successfully completed a prehunt hunter familiarization and orientation and has demonstrated to the department that he or she is familiar with the requisite equipment for participating in the hunting of Nelson bighorn rams, as determined by the commission. The orientation shall be conducted by the department at convenient locations and times preceding each season, as determined by the commission.

4903. Revenue from the fees authorized by this chapter shall be deposited in the Fish and Game Preservation Fund and shall be expended solely for purposes of the bighorn sheep program. Notwithstanding Sections 711 and 13004, this revenue, upon appropriation by the Legislature, shall be available for expenditure

by the department solely for programs and projects to benefit bighorn sheep and for the direct costs and administrative overhead incurred solely in carrying out the department's bighorn sheep activities. Administrative overhead shall be limited to the reasonable costs associated with the direct administration of the program. These funds shall be used to augment, and not to replace, moneys appropriated from existing funds available to the department for the preservation, restoration, utilization, and management of bighorn sheep. The department shall maintain internal accountability necessary to ensure that all restrictions on the expenditure of these funds are met.

4904. (a) The department shall biennially report the following to the Legislature:

(1) The management units for which plans have been developed pursuant to Section 4901.

(2) A summary of the data from the annual count conducted by the department for the purposes of subdivision (b) of Section 4902.

(3) The number of tags issued in the preceding season, and the number of mature Nelson bighorn rams taken under valid tags in the preceding season.

(4) Any instance known to the department of the unlawful or unlicensed taking of a Nelson bighorn sheep in this state and the disposition of any prosecution therefor.

(5) The number of Nelson bighorn sheep relocated during the previous year, the area where reintroduced, a statement on the success of the reintroduction, and a brief description of any reintroduction planned for the following year.

(b) The report shall consist of a compilation of the results of the ongoing study conducted pursuant to this section each year since the enactment of this chapter and an assessment of the environmental impact of the hunting of Nelson bighorn sheep on the herds.

Appendix 3
Biennial Report to the Legislature

State of California
THE RESOURCES AGENCY
Department of Fish and Game

Biennial Report to the Legislature

Regarding Bighorn Sheep Management

December 2010

Submitted in compliance with Fish and Game Code Section 4904

INTRODUCTION

This report was prepared pursuant to Section 4904 of the Fish and Game Code, and is the most recent in a series of biennial reports to the Legislature summarizing activities and information related to bighorn sheep management. Through legislation enacted in 1986, it was declared to be the policy of the State to encourage the preservation, restoration, utilization, and management of California's bighorn sheep population in accordance with Section 1801 of the Fish and Game Code. In addition, the Fish and Game Commission was authorized to adopt all necessary regulations to provide for biologically sound management of Nelson bighorn sheep, including sport hunting of rams. However, sport hunting regulations shall not authorize hunting in a single year of more than 15 percent of the estimated mature Nelson bighorn rams in the management units.

The results for the period 2009 – 2010 are presented in this report as required by law. Requisite elements of this report include: status of unit management plans; summary of bighorn sheep counts in specified units; numbers of hunting license tags issued; summary of unlawful take of bighorn sheep; number of bighorn sheep translocated; and environmental impacts of hunting bighorn sheep.

The California Department of Fish and Game's (CDFG) Bighorn Sheep Conservation Program maintains an inventory of the distribution of bighorn sheep in California. This assessment of bighorn sheep populations is conducted as part of a long-term management strategy for bighorn sheep in California. We have grouped the populations of bighorn sheep in California into metapopulations, or regional systems of subpopulations, that represent the most logical geographic areas for managing for the long-term viability of this species. This approach recognizes the importance of intermountain areas that allow movement and exchange of individuals among populations, the recolonization of vacant habitats, and the interagency coordination of land management activities. Our definition of regional populations considers not only vegetative and geographic boundaries, but also man-made barriers such as freeways that define distributions, and that have resulted in the fragmentation of bighorn sheep habitat.

Although a metapopulation approach is an important biological principle for management and long-term survival of bighorn sheep populations, it is equally important as a management concept that emphasizes the importance of the regional coordination of bighorn sheep population and habitat management. Several investigations have emphasized the importance of population size and genetic diversity to the long-term survival of bighorn sheep populations. Although

population size is important, the number of populations, the maintenance of genetic diversity, and the ability to recolonize vacant areas are equally important aspects of metapopulation function.

Ten metapopulations of bighorn sheep have been defined within California; distributed among these were 3 subspecies defined by early scientists, but recent taxonomic revisions indicate that only two subspecies occur in California. The majority of bighorn sheep in the state currently are recognized as belonging to the Nelson subspecies (*Ovis canadensis nelsoni*), and inhabit the Sonoran Desert, the Mojave Desert, portions of the Great Basin Desert, and the transverse ranges of Ventura, Los Angeles, and San Bernardino counties. Sierra Nevada bighorn sheep (*O. c. sierrae*) are restricted in distribution to the Sierra Nevada of eastern California. Bighorn sheep inhabiting the peninsular ranges of Riverside, San Diego, and Imperial counties (and designated as the peninsular metapopulation) have been classified as endangered by the Federal Government since 1998, and are classified as threatened by the State of California. Bighorn sheep comprising the Sierra Nevada metapopulation are listed as endangered by the State, and were classified as endangered by the Federal Government in 1999. All bighorn sheep are fully protected, although limited harvest occurs in selected areas as a result of state law that provides for the biologically sound management of bighorn sheep, including the sport hunting of mature male Nelson bighorn sheep.

Given the need to understand the status and dynamics of regional populations of bighorn sheep, we have categorized all known populations by the numbers of animals (size class) within each. The Department continues to utilize historical and current data from ground, waterhole, and aerial surveys to categorize these populations. Although population estimates vary in precision, we believe the size classes are adequate to provide an accurate and conservative assessment of each population.

Our defined metapopulations are summarized by size classes, and population estimates are subsequently computed by totaling the median interval estimates. At the close of 2010, we estimate that there are about 5,200 bighorn sheep distributed across 61 mountain ranges in California. Of these, the metapopulations of Nelson bighorn sheep total approximately 4,800 individuals and, based on the most recent information available (June 2009), the Sierra Nevada metapopulation was estimated to number nearly 400 individuals. A survey conducted by CDFG in 1972 resulted in a statewide estimate of 3,737 bighorn sheep; a similar estimate in 2003 was about 4,500 bighorn sheep. These data indicate that the total number of bighorn sheep in California has increased over the past 40 years. Although the overall statewide trend has been

upward, conditions vary among local populations. Declining local populations have been, and will continue to be, a high priority for research and management programs.

Nelson Bighorn Sheep

Nelson bighorn sheep numbers continue to remain stable, continuing to fluctuate around long-term means. In general, populations of bighorn sheep in the Mojave Desert have been increasing slowly, but population dynamics are influenced strongly by the amount and timing of precipitation, which varies widely across southern and eastern California. Our helicopter surveys indicate that the recruitment of rates of lambs was quite variable in 2009 and 2010, reflecting the influences of localized rainfall as well as population density.

During 2009 and 2010, a rangewide survey of the peninsular ranges metapopulation was conducted and an analysis of those data resulted in an estimate of about 950 adult bighorn sheep and recruited lambs distributed among nine distinct subpopulations as of December 2010. Thus, the number of bighorn sheep inhabiting the Peninsular Ranges has been on an upward trend since the mid-1990s, and the population of bighorn sheep in the Peninsular Ranges currently approaches the highest previous estimate (1,070), which was reported in 1974. The U.S. Fish and Wildlife Service completed and published the recovery plan for bighorn sheep in the Peninsular Ranges in 2000.

Sierra Nevada Bighorn Sheep

Emergency action was taken in 1999 by the California Fish and Game Commission to uplist Sierra Nevada bighorn sheep from threatened to endangered, and the taxon received emergency listing as endangered in 1999 by the Federal Government, a classification that was formalized in 2000. These actions were in response to a substantial decline from an estimated 310 in 1985 to about 100 individuals in 1999, potentially the result of a combination of predation, severe winter weather, and accidental deaths. The U.S. Fish and Wildlife Service completed and published the recovery plan for Sierra Nevada bighorn sheep in 2007.

Sierra Nevada bighorn sheep are among the rarest and most endangered mammals in North America, and have been the object of an intensive recovery program directed by the California Department of Fish and Game since 2000. Elements of the recovery program include intensive population monitoring, reducing mortality, reestablishing additional populations in historic range, maintaining genetic diversity, and increasing population size. The most recent data

available indicate that about 400 bighorn sheep currently inhabit the Sierra Nevada, and that the population is on an upward trend.

MANAGEMENT PLANS

Intensive data collection continued during this report period and provided basic information for preparing additional population management plans. These efforts addressed range conditions, population sizes, age class structure, and sex ratios, as well as sampling individual animals for the prevalence of diseases and parasites.

Pursuant to Section 4901 of the Fish and Game Code, management plans have been completed for a number of major herds of bighorn sheep in California. The CDFG Bighorn Sheep Management Program currently is preparing a rangewide management plan that will inventory and evaluate the population status of all bighorn sheep populations and subpopulations within the State, and establish an overall strategy to conserve bighorn sheep in California. This planning effort will identify and set priorities for management activities to ensure the long-term viability of bighorn sheep populations. Protection of important habitats and inter-mountain movement corridors, identification of future reintroduction sites, and the maintenance, improvement, and development of wildlife water developments will be addressed as part of the overall conservation strategy. Separate recovery plans have been prepared for bighorn sheep inhabiting the Peninsular Ranges and the Sierra Nevada, and are being implemented. During 2010, drafts of two regional management plans (Cady Mountains Management Unit and South Bristol Mountains Management Unit) were completed and have been submitted for final approval.

SUMMARY OF ANNUAL SURVEYS

During 2009, aerial surveys were conducted in the Marble Mountains, Clipper Mountains, Old Dad and Kelso Peaks, Clark, Kingston, and Mesquite mountains, Orocopia Mountains, San Gorgonio Wilderness, Sheephole Mountains, and White Mountains management units. Aerial surveys were conducted during both 2009 and 2010 in the Cady Mountains and South Bristol Mountains management units. Although results obtained during 2009 in the Cady Mountains and South Bristol Mountains are shown, only survey results from 2010 contributed to the total numbers presented in the following table. These results were used to establish the 2010 hunting tag allocations, and form the basis of preliminary tag allocations for the 2011 hunting season.

Mountain Range	Survey Date	Ewes	Lambs	Rams	Total
Marble Mountains	October 2009	88	34	65	187
Clipper Mountains	October 2009	13	4	16	33
Kelso Peak and Old Dad Peak	October 2009	95	15	69	179
Clark, Kingston, and Mesquite Mountains	October 2009	45	6	28	79
Orocopia Mountains	September 2009	39	7	21	67
Sheephole Mountains	May 2009	22	3	17	42
South Bristol Mountains	October 2009	44	13	26	83
South Bristol Mountains	October 2010	33	9	30	72
Cady Mountains	September 2009	92	37	38	167
Cady Mountains	October 2010	102	23	49	174
White Mountains	March 2009	59	16	31	106
San Gorgonio Wilderness	May 2009	48	15	20	83
TOTALS		544	132	346	1,022

These data represent minimum population sizes, since they involve only animals actually observed and classified; experience indicates that actual populations are much larger. Conservative population estimates (as derived from the above results and corrected for an average visibility bias of 0.80) for the Marble Mountains, Clipper Mountains, Kelso Peak and Old Dad Peak, Clark, Kingston, and Mesquite Mountains, Orocopia Mountains, Sheephole Mountains, South Bristol Mountains, Cady Mountains, White Mountains, and San Gorgonio Wilderness management units are 270, 50, 250, 110, 100, 60, 100, 250, 150, and 120 adults and recruited young, respectively.

NUMBER OF HUNTING TAGS

After 22 successful hunting seasons since 1987, a 23rd hunt was approved by the Fish and Game Commission in 2009, and a 24th hunt was approved in 2010. A total of 19 Nelson bighorn ram hunting tags were authorized for the season in 2009. Four tags were allocated in the Marble Mountains Management Unit, 6 tags were allocated in the Kelso Peak-Old Dad Peak Management Unit, 2 tags were allocated in the Clark-Kingston Mountains Management Unit, 1 tag was allocated in the Sheephole Mountains Management Unit, 3 tags were allocated in the White Mountains Management Unit, and 1 tag was allocated in the San Gorgonio Wilderness

Management Unit. In addition, two fund-raising tags were valid in any open unit; each of these fund-raising tags was provided pursuant to Section 4902 of the Fish and Game Code. During the 2009 hunting season, hunters harvested a total of 19 mature rams, ranging from 5-11 years-of-age.

In 2010, a total of 22 Nelson bighorn ram hunting tags were authorized by the Fish and Game Commission. Four tags were allocated in the Marble Mountains Management Unit, 4 tags were allocated in the Kelso Peak/Old Dad Mountains Management Unit, 2 tags were allocated in the Clark/Kingston Mountains Management Unit, 1 tag was allocated in the Orocopia Mountains Management Unit, 2 tags were allocated in the Sheephole Mountains Management Unit, 4 tags were allocated in the White Mountains Management Unit, and 2 tags were allocated in the San Gorgonio Wilderness Management Unit. Additionally, one fund-raising hunting license tag was valid in any open unit, a second fund-raising tag was valid in both the Marble-Clipper Mountains Management Unit and Sheephole Mountains Management Unit, and a third fund-raising tag was valid in only the Old Dad Peak-Kelso Peak Management Unit; each of these fund-raising tags was provided pursuant to Section 4902 of the Fish and Game Code. As of 31 December 2010, 15 of 22 hunters had been successful in taking mature rams ranging from 3 to 13 years-of-age. A total of 7 hunters will remain eligible to hunt until termination of the 2010 hunting season during February 2011.

The 2009 open-zone fundraising tag produced a high bid of $55,000, and the second fund-raising tag produced a high bid of $50,000; thus, a total of $105,000 was raised through the sale of these special tags. A total of 8,219 applications with a $ 7.50 non-refundable application fee were received for the drawing for 17 general tags, which were distributed by computerized random selection. Each of the 15 successful resident applicants paid an additional $ 357.50 hunting license tag fee. Total revenue generated from the sale of applications, permits, and special fund-raising tags for the 2009 hunting season was $ 173,378. As specified by law, this revenue was deposited in the bighorn sheep account and shall be used to augment, and not replace, existing funds available to the Department for the preservation, restoration, utilization, and management of bighorn sheep.

The 2010 the open zone fund-raising hunting license tag produced a high bid of $ 80,000, the second fund-raising tag produced a high bid of $ 60,000, and the third fund-raising tag produced a high bid of $ 50,000; thus, a total of $190,000 was raised through the sale of these special tags A total of 11,417 applications with a $7.50 non-refundable application fee were received for the drawing for 19 general tags, which were distributed by computerized random selection. Each of

18 successful resident applicants paid an additional $367.50 hunting license tag fee. One nonresident applicant was drawn in 2010, and that individual paid an additional $500 in hunting license tag fees. Total revenue generated from the sale of applications, permits, and special fund-raising tags, up to and including the 2010 hunting season, is approximately $3.6 million. As specified by law, this revenue was deposited in the bighorn sheep account and shall be used to augment, and not replace, existing funds available to the Department for the preservation, restoration, utilization, and management of bighorn sheep.

UNLAWFUL TAKING

California Department of Fish and Game Law Enforcement Division personnel reported 4 confirmed incidents involving the illegal killing of bighorn sheep during 2010; there were no known violations by hunters during either the 2009 or 2010 bighorn sheep hunt.

POPULATION RECOVERY AND REINTRODUCTION PROJECTS

The two primary management objectives of the Mountain Sheep Conservation Program are to (1) maintain, improve, and expand bighorn sheep habitat; and (2) re-establish bighorn sheep populations on historic ranges. Population reintroduction projects are a major activity used by management agencies to restore historic populations. Since 1983 the Department has captured and moved nearly 500 bighorn sheep from native ranges to restore or augment populations of *O. c. nelsoni* and *O. c. sierrae*. It is anticipated that bighorn sheep will be translocated within the Sierra Nevada during the next report period (2011-2012), but at the present time no other plans for translocation have been formulated.

During 2009, 6 bighorn sheep were translocated within the Sierra Nevada to augment existing populations in that mountain range. As the result of an aerial accident that resulted in the tragic deaths of 4 individuals early in 2010, all scheduled translocations were cancelled; hence, no bighorn sheep were captured and moved in 2010. Nevertheless, detailed demographic assessments have continued, and ensure the recovery of bighorn sheep populations from which animals previously have been removed for translocation. Comprehensive long-term demographic studies are underway in populations throughout California, and have been designed to monitor and direct management activities.

During 2010, a very limited number of bighorn sheep were captured for research purposes. A total of only 10 individuals were captured, sampled, collared, and released, all of them in the

peninsular ranges. Capture activities in 2010 were constrained substantially as the result of the helicopter accident. The following capture, sample, radio-collar, and release projects occurred in 2010:

Population	County	# Rams	# Ewes	Total
Santa Rosa Mountains	Riverside and San Diego	0	8	8
Vallecito Mountains	San Diego	1	1	2
Total		1	9	10

ASSESSMENT OF ENVIRONMENTAL IMPACT OF HUNTING ON NELSON BIGHORN SHEEP

A detailed discussion of the environmental impact of regulatory changes affecting the hunting Nelson bighorn sheep on the herds is contained in the Final Environmental Document regarding bighorn sheep hunting prepared by CDFG in 2005.

Bighorn sheep exist in approximately 61 populations (herds), with 5,200 individual animals estimated statewide. Nelson bighorn sheep occur in Mono, Inyo, San Bernardino, Riverside, Imperial, San Diego, Ventura, and Los Angeles counties. In 2010, a total of only 7 herds were hunted: the Marble Mountains, Kelso Peak/Old Dad Peak, Clark and Kingston ranges of San Bernardino and Inyo counties, Orocopia Mountains, Sheephole Mountains, San Gorgonio Wilderness (Riverside and San Bernardino counties), and the White Mountains (Mono County). Therefore, the remaining populations of bighorn sheep were not influenced by hunting activity. The potential harvest of 22 bighorn rams during the 2010 hunting season will represent less than 0.5 percent of the total number of bighorn sheep estimated to occur in California.

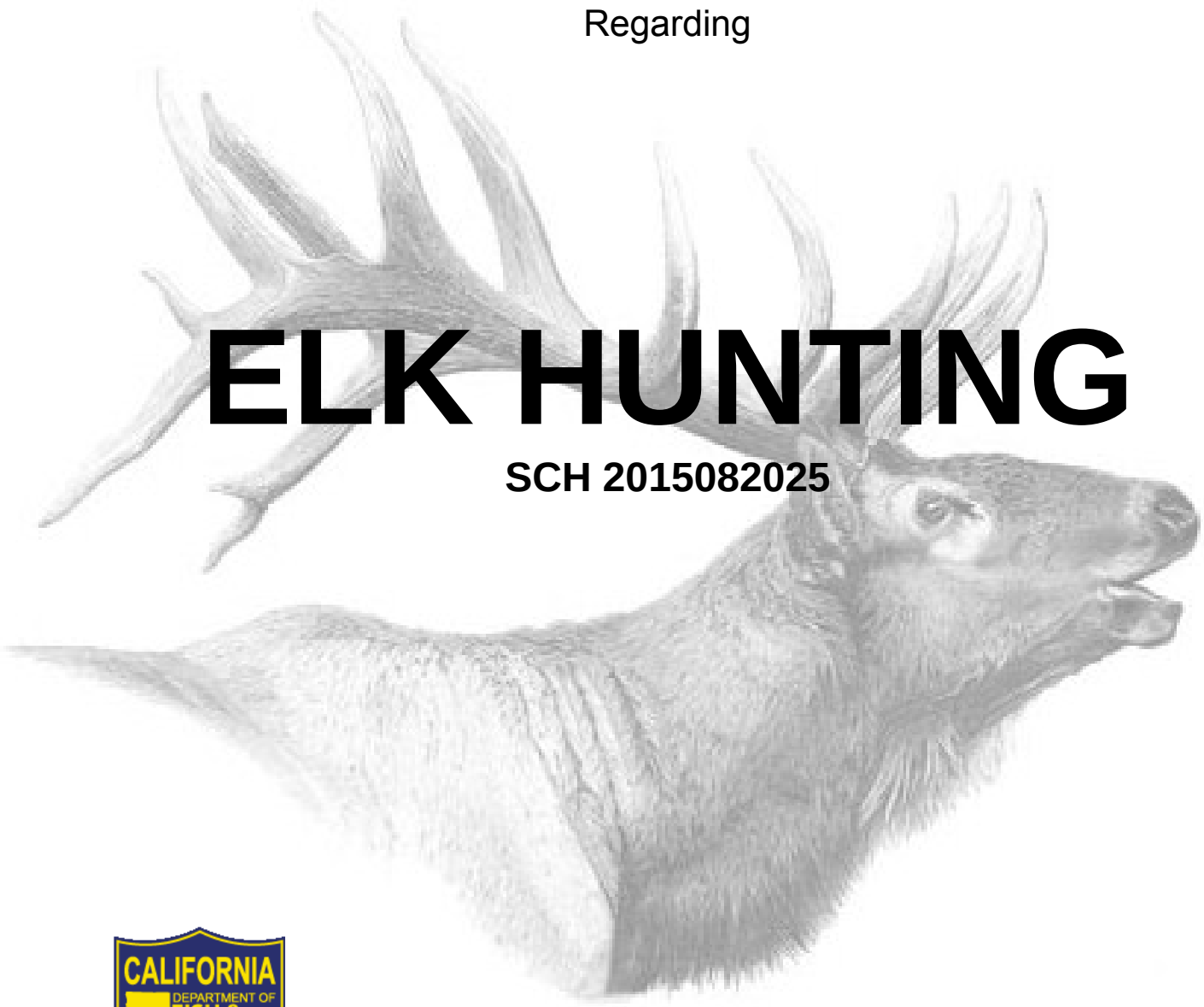
The proportion of legal rams in the Marble Mountains, Kelso Peak-Old Dad Peak, Clark-Kingston-Mesquite Mountains, Orocopia Mountains, Sheephole Mountains, White Mountains, and San Gorgonio Wilderness populations has been relatively stable from 1987 to present. This indicates that the removal of the limited number of mature rams from the herds has no adverse impact on the age structures of the herds. The number of males removed has been too small to

result in a measurable increase in lamb recruitment when compared to unhunted herds. Because the age structure is not impacted, the social structure of the herds is maintained. No impacts are expected in the future to adversely affect genetic variability or diversity due to changes in the social structure of the herds.

DRAFT
ENVIRONMENTAL DOCUMENT

Section 364, 364.1, 555, and 601
Title 14, California Code of Regulations

Regarding



ELK HUNTING

SCH 2015082025

November 15, 2015

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF FISH AND GAME

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CHAPTER 1. SUMMARY

Existing law (Section 3950, Fish and Game Code) designates elk (genus *Cervus*) as a game mammal in California. Section 332, Fish and Game Code, provides that the Commission may fix the area or areas, seasons and hours, bag and possession limit, sex, and total number of elk that may be taken pursuant to its regulations. Section 203.1, Fish and Game Code, requires the Commission to consider populations, habitat, food supplies, the welfare of individual animals, and other pertinent facts when establishing hunting regulations for elk.

Existing law (Section 207 of the Fish and Game Code) also requires the Fish and Game Commission (Commission) to review mammal hunting regulations and the Department of Fish and Game (Department) to present recommendations for changes to the mammal hunting regulations to the Commission at a public meeting. Mammal hunting regulations adopted by the Commission provide for hunting elk in specific areas of the State [Section 364 and 364.1, Title 14, California Code of Regulations (CCR)].

The regulations also provided for up to 40 tags through the Cooperative Elk Hunting Program during 2015 (Section 555, Title 14, CCR), however only 28 tags were issued. Hunting for Rocky Mountain, Roosevelt, and tule elk also occurred under authority of the Private Lands Wildlife Habitat Enhancement and Management (PLM) Area Program. During 2014 116 bull tags and 87 antlerless tags were issued under the PLM program (Appendix 1).

In adopting regulations providing for limited public elk hunting, the Commission would be implementing sections 332 and 3951 of the Fish and Game Code, which is consistent with the wildlife conservation policy adopted by the Legislature (Section 1801, Fish and Game Code). The State's wildlife conservation policy, among other things, contains an objective of providing hunting opportunities when such use is consistent with maintaining healthy wildlife populations.

PROPOSED PROJECT AND ALTERNATIVES

The project discussed in this document (proposed project) involves elk hunting for the 2016 elk hunting season and subsequent seasons until a new environmental document is prepared and certified. Specifically, the Department is proposing to modify annual tag quotas, establish 9 new hunt zones, and modify hunt boundaries, season dates, and hunt periods for various existing hunts.

The Department is also providing the Commission with a range of alternatives to the proposed project that could feasibly attain the basic objectives of the project. It is anticipated that the proposed project will fall near or below the median of the proposed tag ranges in most zones. Alternative 1 (no change) would maintain quotas and seasons for each hunt zone without change. Alternative 2 (increased harvest) involves issuing tag quotas at approximately 50% above the proposed project. Alternative 3

(reduced harvest) involves issuing approximately 50 % fewer elk license tags than the proposed project. Alternative 4 (herd growth) proposes tag allocations if the elk populations increased within the zones. Population growth for elk zones were estimated based on the potential for those herds to increase in time. Growth estimates ranged from 18% to 400%. The time frame to reach the herd growth level for the analyzed population under this alternative will vary by herd. This is an alternative harvest that could be utilized within the life span of this environmental document. Current and proposed harvest strategies, for most herds, allow for population growth through time.

SUMMARY OF IMPACTS AND MITIGATION

Table 1 summarizes Department findings that there are no significant long-term adverse impacts associated with the proposed project or any of the project alternatives considered for the 2016 elk hunting regulations.

Table 1. Impact Summary

Alternative	Significant Impact	Nature of Impact	Mitigation Available	Nature of Mitigation
(Proposed Project)	No	None	N/A	N/A
1. No Change	No	None	N/A	N/A
2. Increased Harvest (+50%)	No	Some population levels may temporarily be reduced	N/A	Reducing hunting opportunity in future years
3. Reduced Harvest (-50%)	No	None	N/A	N/A
4. Herd Growth	No	None	N/A	N/A

It is anticipated that the number of tags issued will fall near or below the median from the proposed ranges (Appendix 2). The resulting harvest for 2016 will likely be lower than the proposed tag median because hunter success has historically been less than 100 percent and hunts with multiple periods may have low number of tags issued or not have tags issued in every period every year. Based on success rates from previous years, the Department expects that the actual harvest will range from 55-80 percent of the elk tags allocated for 2016 (1990-present, Department of Fish and Wildlife data on file in the Wildlife Branch, Sacramento, California).

AREAS OF CONTROVERSY

A Notice of Preparation (NOP) for the proposed project was prepared and circulated on August 17, 2015. The NOP included the Initial Study which provided a project description, a preliminary, relatively brief environmental impact analysis for the proposed project, and information regarding a public scoping meeting to be held on August 26, 2015. This started a 30-day scoping period, which ended on September 15, 2015. A public scoping meeting was held on August 26, 2015 in Sacramento, CA.

The Department noticed stakeholders about the NOP, scoping period, and scheduled scoping meeting through the following methods:

- Posting in the State Clearinghouse
- Posting Initial Study and meeting notification on CDFW's public notice website
- Email meeting notification to members of the Big Game Management Advisory Committee dated August 14, 2015

The Notice of Preparation, initial study, preliminary impact assessment, summary of the issues identified at the scoping meeting, and written comments received during the 30-day scoping period are located in Appendix 3.

ISSUES TO BE RESOLVED

As provided by existing law, the Commission is the decision-making body (lead agency) considering the proposed project, while the Department has responsibility for management activities, such as hunting, translocating elk to suitable historic range, and preparing management plans. The primary issue for the Commission to resolve is whether to change elk hunting regulations as an element of elk management. If such changes are authorized, the Commission will specify the areas, seasons, methods of take, bag and possession limit, number of elk to be taken, and other appropriate special conditions.

FUNCTIONAL EQUIVALANCY

California Environmental Quality Act (CEQA) review of the proposed project will be conducted in accordance with the Commission's certified regulatory program (CRP) approved by the Secretary for the California Resources Agency pursuant to Public Resources Code section 21080.5 (See generally Cal. Code Regs., tit. 14, §§ 781.5, and 15251, subd. (b).). CEQA requires all public agencies in the State to evaluate the environmental impacts of projects they approve, including regulations, which may have a potential to significantly affect the environment. The Department has prepared this Environmental Document (ED), which is the functional equivalent of an Environmental Impact Report, on behalf of the Commission in compliance with this requirement. The ED provides the Commission, other agencies, and the general public with an objective assessment of the potential effects.

CHAPTER 2. THE PROPOSED ACTION

The proposed project being considered consists of the following modifications to existing elk hunting regulations:

1. Number of Tags

In order to maintain hunting quality in accordance with management goals and objectives, it is periodically necessary to adjust quotas in response to dynamic environmental and biological conditions. This proposed project adjusts elk tag ranges to account for fluctuations in population numbers and hunting pressure (Appendix 2).

Elk Pop (Smith and Updike 1987) is a microcomputer-based model which was developed by the Department for the purpose of analyzing harvest alternatives. Elk Pop was used to assess effects of the proposed project (and project alternatives) on the specific Roosevelt, Rocky Mountain, and tule elk herds where hunting is proposed. The model allows the user to vary carrying capacity to reflect real-world changes in habitat capability. Population age and sex ratios (observed and estimated) are primary inputs to the model. Elk Pop allows analysis of multiple harvest alternatives simultaneously and is easily adapted to most herd situations.

Elk Pop utilizes data on age and sex composition of the herd, maximum calf survival, estimated population numbers, nonhunting mortality, and hunting mortality. Age and sex composition and maximum calf survival figures used in the model are based on observed and estimated rates. Population level and nonhunting mortality rates were estimated. Estimates of nonhunting mortality rates were considered valid representations of actual nonhunting mortality rates when the model predicted the observed herd composition ratios for 10 consecutive years. Effects of various harvest scenarios were then predicted on the basis of composition ratios and estimated nonhunting mortality rates. The computer model runs for various harvest scenarios (proposed project and the alternatives) for each elk zone where hunting is proposed can be found in Appendix 4.

2. Establish New Hunts:

a. Split existing Northwestern Roosevelt elk hunt into two separate zones within Del Norte, Humboldt, and Trinity counties (Del Norte and Humboldt Roosevelt elk hunts) and modify season framework.

Public opportunity to hunt elk in Del Norte, Humboldt, and Trinity counties currently exists. The proposal would establish two zones within Del Norte, Humboldt, and Trinity counties and adjust tag ranges and season dates. These zones will be created by splitting the Northwestern Roosevelt Elk Hunt zone into two zones (Del Norte and Humboldt Roosevelt elk zones – Appendix 5) and minor boundary adjustments for clarification. The establishment of these zones will allow the Department to distribute

hunting pressure to address landowner concerns over elk damage and increase opportunity while providing a biologically appropriate harvest within each zone. Bull (range 0-20), antlerless (range 0-50), and either-sex (0-10) tags would be available to the public during five hunt periods. Each hunt period would begin on the first of the month for September, October, November, December, and January and extend for 20 consecutive days.

b. Split existing Marble Mountains Roosevelt elk hunt into two separate zones within Humboldt, Shasta, Siskiyou, and Trinity counties (Marble Mountain North and Marble Mountain South Roosevelt elk hunts) and modify season framework.

Public opportunity to hunt elk in Humboldt, Shasta, Siskiyou, and Trinity counties currently exists. The proposal would establish two zones within Humboldt, Shasta, Siskiyou, and Trinity counties. In addition it would make minor boundary adjustments, modify seasonal framework, and adjust tag ranges. These zones will be created by splitting the Marble Mountain Roosevelt elk zone into two zones (Marble Mountain North and Marble Mountain South – Appendix 6). The establishment of these zones will allow the Department to distribute hunting pressure in relation to elk distribution, increase opportunity, and obtain an appropriate harvest level. As part of these modifications hunting periods will be divided into early season archery/muzzleloader either-sex (range 0-20); period 1 bull (range 0-50), antlerless (range 0-20), and either-sex apprentice (range 0-4); period 2 bull (range 0-10) and antlerless (range 0-40); period 3 bull (range 0-5) and antlerless (range 0-15) tags would be available to the public during the hunt periods in each zone. Early season archery/muzzleloader shall open on the last Wednesday in August and continue for 9 consecutive days. Period 1 would open on second Saturday in September and continue for 12 consecutive days. Period 2 shall open on the last Saturday in September and continue for 12 consecutive days. Period 3 shall open on the first Wednesday in November and continue for 16 consecutive days.

c. Split and expand the existing Mendocino tule elk hunt into five elk hunts within Mendocino County. (Mendocino North Coast, Mendocino Middle Fork, Mendocino Upper Russian River, Mendocino Little Lake, and Mendocino South Coast elk hunts).

Public opportunities to hunt elk are limited in Mendocino County. The proposal would establish five zones within Mendocino County (splitting the current Mendocino elk hunt zone and extending the boundaries (Mendocino North Coast, Mendocino Middle Fork, Mendocino Upper Russian River, Mendocino Little Lake, and Mendocino South Coast elk hunt zones – Appendix 7). Sufficient numbers of elk occur within the proposed hunt boundary to provide opportunity for the public to hunt elk. The establishment of these zones will allow the Department to distribute hunting pressure to address landowner concerns over elk damage and increase hunter opportunity while providing a biologically appropriate harvest within each zone. Mendocino North Coast, bull (range 0-10) and antlerless (range 0-40); Mendocino Middle Fork, bull (range 0-10) and antlerless (range 0-40); Mendocino Upper Russian River, bull (range 0-10) and antlerless (range 0-40); Mendocino Little Lake, bull (range 0-5) and antlerless (range 0-10), no tags to be issued

under current conditions (establishing zone boundaries); Mendocino South Coast, bull (range 0-5), antlerless (range 0-10) tags would be available to the public in each zone. The bull season shall open on the Wednesday preceding the third Saturday in August and continue for 10 consecutive days. The antlerless season shall open the first Saturday in November and continue for 10 consecutive days.

d. Split the Independence tule elk hunt in Inyo County into two zones, establishing a new tule elk zone (Goodale) in the Owens Valley.

In conjunction with zone boundary modifications for the Independence tule elk zone a new zone (Goodale – Appendix 8) will be created by dividing the Independence zone into two zones (Goodale and Independence). This zone is being established to efficiently distribute hunting pressure and manage harvest. Sufficient numbers of elk occur within the proposed hunt boundary to provide opportunity for the public to hunt elk. Creating a new hunt boundary (splitting the zone) allows the Department to more appropriately manage harvest. The proposal would add a new hunt (portion of existing Independence zone) in Inyo County. Bull (range 0-10) tags and antlerless tags (range 0-10) would be available to the public during the established seasons.

e. Establish new tule elk hunt in portions of Kern, San Luis Obispo, Santa Barbara, and Ventura Counties (San Emigdio Mountain tule elk hunt).

Public opportunities to hunt elk in Kern, San Luis Obispo, Santa Barbara, and Ventura Counties are limited or non-existent. Sufficient numbers of elk occur within the proposed hunt boundary to provide additional opportunity for the public to hunt elk. The proposal would add a (new) hunt for elk in Kern, San Luis Obispo, Santa Barbara, and Ventura Counties called San Emigdio Mountain tule elk hunt (Appendix 9). The establishment of this zone will allow the Department to address landowner concerns and increase opportunity while providing a biologically appropriate harvest. Bull (range 0 to 15) and antlerless (0-40) tags would be available to the public during a season beginning on the second Saturday in November and continuing for 14 consecutive days.

f. Establish new tule elk hunt in portions of Monterey and San Luis Obispo Counties (Camp Roberts tule elk hunt).

Public opportunities to hunt elk in Monterey and San Luis Obispo counties are limited. Sufficient numbers of elk occur within the proposed hunt boundary to provide additional opportunity for the public to hunt elk. The proposal would add a (new) hunt in Monterey and San Luis Obispo Counties called Camp Roberts tule elk hunt (Appendix 10). Bull (range 0 to 10) and antlerless (0-20) tags would be available to the public and military during each of the three hunt periods. The season for period one shall open on the third Saturday in September and continue for 16 consecutive days. The season for period two shall open on the second Saturday in November and continue for 16 consecutive days. The season for period three shall open 16 days prior to January 2 and continue for 16 consecutive days.

3. Modify Existing Hunt Boundaries:

a. La Panza tule elk hunt boundary modification.

Existing regulations specify boundaries for the La Panza tule elk hunt. In conjunction with modifications to the Fort Hunter Liggett boundary the La Panza boundary will also be modified (Appendix 11). A portion of the area previously within the La Panza zone north of highway 198 will now be within the Fort Hunter Liggett Central Coast tule elk zone. This is in an effort to better distribute harvest within these zones, increase opportunity, and address landowner concerns. The La Panza season framework will remain as previously identified.

b. Grizzly Island tule elk hunt boundary modification.

Existing regulations specify boundaries for the Grizzly Island tule elk hunt. During the last several years elk population numbers have increased and their range has expanded beyond existing hunt boundaries. The modifications will expand the boundary to outside of the Grizzly Island Wildlife Area (Appendix 12). The proposal to expand boundaries for the Grizzly Island tule elk hunt is necessary to improve hunter opportunity and implement an appropriate harvest level.

c. Fort Hunter Liggett tule elk hunt boundary modification.

Public opportunities to hunt elk in Monterey and San Benito counties are limited to the lands within the confines of Fort Hunter Liggett Military base and a portion of the La Panza and San Luis Reservoir tule elk zones. Existing regulations specify boundaries for the Fort Hunter Liggett tule elk hunts. Tule elk populations have increased and their range has expanded beyond existing hunt boundaries. The proposal expands boundaries for the Fort Hunter Liggett tule elk hunt to encompass areas not previously part of an established hunt zone. The proposed modification expands the Fort Hunter Liggett zone to encompass portions of Monterey, San Benito, and San Luis Obispo counties and changes the zone name to the Fort Hunter Liggett Central Coast tule elk hunt (Appendix 13). In conjunction with modifications to the La Panza zone, a portion of the expanded hunt zone will encompasses the northern portion of the previously established La Panza tule elk zone north of highway 198 to the boundary of the San Luis Reservoir tule elk zone. This is in an effort to improve hunter opportunity, address expanding elk populations, and respond to landowner concerns. These modifications will result in an appropriate harvest level.

4. Modify Season Dates, Hunt Periods, and Tag Ranges:

a. Siskiyou Roosevelt elk hunt.

Public opportunity to hunt elk in Siskiyou County currently exists. The recommended changes will increase opportunity and address private property conflicts through the establishment of primitive weapon, apprentice, and additional hunt periods while maintaining an appropriate harvest level. As part of these modifications hunting periods will be divided into early season archery/muzzleloader either-sex (range 0-20); period 1 bull (range 0-40), antlerless (range 0-40), apprentice either-sex (range 0-2); period 2 bull (range 0-10) and antlerless (range 0-40); period 3 bull (range 0-5) and antlerless (range 0-20) tags would be available to the public during the hunt periods in each zone. Early season archery/muzzleloader would open on the last Wednesday in August and continue for 9 consecutive days. Period 1 would open on second Saturday in September and continue for 12 consecutive days. Period 2 would open on the last Saturday in September and continue for 12 consecutive days. Period 3 would open on the first Wednesday in November and continue for 16 consecutive days.

b. Northeastern Rocky Mountain elk hunt.

The proposal modifies the season dates for the bull and antlerless tags in the Northeastern Rocky Mountain elk hunt zone. This is an effort to distribute hunter pressure for this zone. This change will modify the hunt dates for the antlerless tag to begin separately from the bull season. Currently the Northeastern Rocky Mountain elk hunt has authorized tag ranges for antlerless (range 0-10) and archery only either-sex (range 0-20). In an effort to manage at an appropriate harvest level and provide additional opportunity the proposal would modify tag ranges for antlerless (range 0-20), add archery only bull (range 0-10), and archery only antlerless (range 0-10) tags The bull season shall open on September 19 and continue for 12 consecutive days. The antlerless season shall open on the second Saturday in November and continue for 12 consecutive days.

c. Cache Creek tule elk hunt.

Currently the Cache Creek tule elk hunt has authorized tag ranges for bull (range 0-4) and antlerless (range 0-4) tags. In an effort to manage at an appropriate harvest level and allow additional future opportunity to hunters the proposal would modify tag ranges for bull (range 0-10) and antlerless (range 0-10) tags.

d. La Panza Tule Elk Hunt.

Currently the La Panza elk tule elk hunt has authorized tag ranges for bull (range 0-12 Periods 1 and 2) and antlerless (range 0-10 Period 1 and range 0-12 Period 2) tags. In an effort to manage at an appropriate harvest level, allow additional future opportunity to hunters, and address landowner concerns, the proposal would modify tag ranges for bull (range 0-20 Period 1 and 2) and antlerless (range 0-30 Period 1 and 2) tags.

e. Grizzly Island Tule Elk Hunt.

The Grizzly Island tule elk population has substantially increased over the last several years. The proposal modifies the seasonal framework, adds additional hunt periods, and modifies tag ranges. This is in an effort to safely distribute hunting pressure while maintaining an appropriate level of harvest. Currently there are five hunt periods consisting of four days each, bull (range 0-3 during periods 1-3 and range 0-2 during periods 4-5), antlerless (range 0-12 during all periods), and spike (0-6 during all periods). The proposal modifies tag ranges for bull (range 0-3), antlerless (range 0-12), and spike (range 0-10) for each of the proposed 13 periods.

f. Fort Hunter Liggett Central Coast tule elk hunt.

As part of the overall modifications to the Fort Hunter Liggett tule elk hunt zone. This proposal modifies season dates for the Fort Hunter Liggett tule elk hunts, adjusts tag quotas, and identifies the name change to Fort Hunter Liggett Central Coast tule elk hunt. Due to military use constraints, hunt dates on the base are subject to change from year to year. This is part of an effort to increase hunter opportunity and success while achieving an appropriate harvest level. The following season dates apply to both civilian and military tags (military tags are only valid on Fort Hunter Liggett military base). The archery only either-sex hunt shall open on the last Wednesday in July and continue for 9 consecutive days (range 0-6). The archery antlerless hunt shall open on the last Wednesday in September and continue for 9 consecutive days (range 0-10). Period 1 bull (range 0-14) and antlerless (range 0-16) shall open on the first Thursday in November and continue for 9 consecutive days. Period 2 bull (range 0-14) and antlerless (range 0-16) shall open November 22 and continue for 9 consecutive days. Period 3 bull (range 0-14), antlerless (range 0-14), apprentice bull (range 0-2) and apprentice antlerless (range 0-8) hunt shall open on the third Saturday in December and continue for 16 consecutive days. The muzzleloader bull (range 0-10) and antlerless (range 0-6) shall open on the second Saturday in October and continue for 12 consecutive days. Early season military only hunt bull (range 0-2) and antlerless (range 0-2) shall open on August 22 and continue for 5 consecutive days.

g. San Luis Reservoir tule elk hunt.

Tule elk numbers have significantly increased within the San Luis Reservoir zone. The proposal modifies the season dates for the San Luis Reservoir tule elk hunt zone, establishes three separate hunt periods, and modifies tag ranges. This is an effort to distribute hunter pressure over time, reduce potential crowding in popular hunt areas, provide additional opportunities for hunters, and achieve an appropriate harvest level. Currently San Luis Reservoir elk hunt has authorized tag ranges for bull (range 0-10), antlerless (range 0-10), and either-sex (range 0-10). The proposal would establish three separate hunt periods, bull (range 0-10), antlerless (range 0-20), and either-sex (range 0-10) tags for each period. The season for period 1 shall begin on the first Saturday in October and continue for 23 consecutive days. The season for period 2 shall begin on the second Saturday in November and continue for 12 consecutive days. The season for period 3 shall begin on the third Saturday in December and continue for

12 consecutive days.

h. Bear Valley tule elk hunt.

Currently the Bear Valley tule elk hunt has authorized tag ranges for bull (range 0-4) and antlerless (range 0-2) tags. In an effort to manage at an appropriate harvest level, address landowner concerns, and allow additional future opportunity to hunters the proposal would modify tag ranges for bull (range 0-10) and antlerless (range 0-10) tags.

i. Lake Pillsbury tule elk hunt.

Tule elk numbers have increased within the Lake Pillsbury zone. The proposal modifies the season dates for the Lake Pillsbury tule elk hunt zone, establishes three separate hunt periods, and modifies tag ranges. This is an effort to distribute hunter pressure over time, reduce potential crowding in popular hunt areas, provide additional opportunities for hunters, and achieve an appropriate harvest level. Currently Lake Pillsbury elk hunt has authorized tag ranges for bull (range 0-4) and antlerless (range 0-4). The proposal would establish three separate hunt periods, bull (range 0-10) and antlerless (range 0-10) tags for each period. Period 1 shall open on the Monday following the fourth Saturday in September and continue for 10 consecutive days. The season for period 2 shall open on the second Wednesday in October and continue for 10 consecutive days. The season for period 3 shall open on the fourth Wednesday in October and continue for 10 consecutive days.

j. Santa Clara tule elk hunt.

Currently the Santa Clara tule elk hunt has authorized tag ranges for bull (range 0-4). In an effort to manage at an appropriate harvest level and allow additional future opportunity to hunters when appropriate the proposal would establish tag ranges for antlerless (range 0-20) tags and modify the bull tag range to 0-15.

k. Alameda tule elk hunt.

Currently the Alameda tule elk hunt has authorized tag ranges for bull (range 0-4). In an effort to manage at an appropriate harvest level and allow additional future opportunity to hunters when appropriate the proposal would establish tag ranges for antlerless (range 0-10) tags.

l. Cache Creek apprentice tule elk hunt.

Currently the Cache Creek apprentice tule elk hunt has authorized tag ranges for bull (range 0-4) tags. In an effort to manage at an appropriate harvest level and allow additional future opportunity to hunters the proposal would establish tag ranges for antlerless (range 0-2) tags.

m. Grizzly Island apprentice tule elk hunt.

Currently the Grizzly Island apprentice hunts have authorized tag ranges for period 1 antlerless (range 0-4), spike (range 0-4) and period 2 spike (range 0-4). In an effort to manage at an appropriate harvest level and allow additional future opportunity to hunters the proposal would establish tag ranges for period 2 antlerless (range 0-4) tags, period 3 and 4 antlerless and spike (range 0-4) tags in addition to the established tag ranges for period 1.

n. Owens Valley multiple zone tule elk archery only hunt.

Currently tag holders can hunt in the Bishop, Independence, Lone Pine, Tinemaha Mountain, and Whitney zones. As part of the zone splitting of the Independence zone and to more effectively distribute hunting pressure the proposal would make the tag valid in the Bishop, Independence, and Lone Pine zones.

o. Multi-zone Fund Raising License Tag.

Current season dates for each of the zones this tag is valid in (Siskiyou, Marble Mountain, Northwestern, Northeastern, and La Panza) begin prior to the earliest season opening date within each zone. In conjunction with modifications (zone splitting) and the season frame work (additional hunt periods) within these zones and for consistency of seasonal framework the proposal establishes a single season for this tag which shall be valid across the zones. The season for all zones (Del Norte, Humboldt, Marble Mountain North, Marble Mountain South, Northeastern, and La Panza) shall open on the second Saturday in August and continue for 90 consecutive days.

The Department is recommending that the Commission adopt regulations that will provide for limited public hunting of Roosevelt, Rocky Mountain, and tule elk in 31 zones. The department is recommending tag allocations within the ranges listed in Appendix 2 for each hunt area with the following seasons: Archery only, muzzleloader only, general, apprentice, archery/muzzleloader only, military, SHARE, and fund raising hunts. Based on historic quotas from the past 5 years, the department expects that the tag quota for 2016 will fall near or below the median of the listed ranges. Additional hunt periods have been added to several hunts to provide the framework for yearly tag adjustments in response to elk movements and distribution. It is anticipated that tag issuance within hunt periods will fall below the median for most periods.

Three of the bull elk license tags shall be made available for fund-raising purposes, as authorized pursuant to subsection 332(d), Fish and Game Code. These tags will be sold pursuant to a regulation adopted by the Commission. In addition, up to 55 Cooperative Elk Hunting tags would be available (directly correlated with the number of general elk tags issued for each hunt). Hunting under authority of the PLM Program would continue and not more than 115 antlerless and 140 bull tags would be recommended under the PLM Program.

One element of the proposed project provides archery only elk hunt periods at specified locations. The proposed project provides archery only tags each for Fort Hunter Liggett Central Coast tule elk hunt, Northeastern California Rocky Mountain elk hunt, and tule elk hunts within the Owens Valley. Hunt periods exclusively for archers are designated at each location.

Another element of the proposed project provides muzzleloader only elk hunt periods at specified locations. The proposed project provides muzzleloader only tags for Fort Hunter Liggett Central Coast, and hunts within the Owens Valley tule elk hunts.

An additional element of the proposed project provides archery/muzzleloader only hunt periods at a specified location. The proposed project provides combination archery and muzzleloader only tags for the Marble Mountain (North and South) and the Siskiyou Roosevelt elk hunts.

BACKGROUND AND EXISTING CONDITIONS

THE MANAGEMENT OF ELK IN CALIFORNIA

There are three subspecies of elk in California: Roosevelt, Rocky Mountain, and tule elk. Roosevelt elk occupied the Cascade and Coast mountain ranges as far south as San Francisco (Harper et al. 1967), and eastward at least to Mount Shasta (Murie 1951). Tule elk were distributed throughout the Central, Sacramento and San Joaquin valleys and the grasslands and woodlands of central California's Coast Range (McCullough 1969). Although there appears to be disagreement regarding their subspecific status, both Murie (1951) and McCullough (1969) included portions of Shasta, Siskiyou and Modoc counties in northeastern California within the historical range of Rocky Mountain elk. Further clarification of the historical and current subspecific status of elk in northeastern California is unlikely because of the translocation of Rocky Mountain elk to the Pit River area in the early 1900s. However, predictions of genetic flow across the landscape supported by the journal entries of early American explorers suggest that elk have been endemic to northeastern California for thousands of years. Locations where historical specimens of Rocky Mountain elk have been recovered have helped scientists map the probable routes taken by these highly mobile ungulates as they populated North America (McCullough 1969).

Because of their large body size and the availability of smaller prey, it is unlikely that Native Americans had a significant impact on elk populations in California. Early explorers also had little direct impact on elk populations. Apparently they preferred domestic livestock to elk (McCullough 1969). However, these early explorers were responsible for the introduction of exotic annual grasses and domestic livestock, both of which had long-term, deleterious impacts on California's elk populations. Livestock competed directly with elk for forage and contributed to the conversion of the native perennial grasslands to annual grasslands, which resulted in the loss of important

forage plants used by elk during the summer and fall months.

Historical Perspective of Roosevelt Elk Management

Although once widely distributed throughout northern California, by the late 1800s, Roosevelt elk were extirpated throughout much of their historic California range. Barnes (1925a, 1925b) reported that by 1925, Roosevelt elk range in California was reduced to one small area in Humboldt and Del Norte counties. Mining, logging, agriculture, and market shooting were factors that contributed to the decimation of Roosevelt elk in much of California. Because of their large body size and herding behavior, elk were vulnerable to market shooting. Harper et al. (1967) discussed the historical distribution of Roosevelt elk in California and reported that by 1967 the population was increasing in size and in no danger of extinction.

Based on the current distribution of Roosevelt elk in California (Appendix 14), population growth and range expansion has continued since 1967. Public ownership (USFS and BLM) of large tracts of Roosevelt elk habitat and the associated Congressional mandates and directions to provide for and maintain wildlife habitats have resulted in significant Roosevelt elk population increases during the 20th century. Roosevelt elk herds in California are now healthy and viable. Populations of Roosevelt elk currently exist in the coastal areas of Mendocino, Humboldt, and Del Norte counties, in addition to the Cascade and Klamath mountain ranges in Siskiyou and Trinity counties. Some of these populations were established when the Department (in cooperation with other State and Federal agencies) relocated elk to suitable historic range. Other populations were established when elk moved into California from Oregon. Additionally, new populations have become established through the dispersal of elk from existing populations to adjacent suitable areas. The Department currently estimates the statewide Roosevelt elk population at between 5,000-6,000 individuals. This estimate is based on field observations and professional judgment and experience obtained in studying elk throughout California, the Department has determined that this estimate of total population size is reasonable.

Tule elk generally exist in open habitat types and can be captured in large numbers (40 or more at a time) by herding them into large corral type traps with the aid of a helicopter. On the other hand, Roosevelt elk use forested habitat types, where they are often impossible to see from a helicopter because of the dense forest canopy. For this reason, helicopter-assisted capturing of Roosevelt elk is generally not effective in California. Nevertheless, successful Roosevelt elk translocations have occurred when large groups have been captured in Redwood National Park or on winter range in Oregon. Since 1985, the Department has translocated more than 280 Roosevelt elk to reestablish populations in portions of southern Humboldt, Mendocino, Siskiyou, and Trinity counties.

Historical Perspective of Rocky Mountain Elk Management

There are currently three populations of Rocky Mountain elk in the State (Appendix 14), totaling approximately 1,500-2,000 animals. This estimate was developed using procedures similar to those used to estimate Roosevelt elk numbers.

One population of elk has become established in the Warner Mountains in Modoc County. This population was established by natural immigration of elk from southeastern Oregon and/or northern California. Two populations of Rocky Mountain elk exist in the southern part of the State. One population in southwestern Monterey and northwestern San Luis Obispo counties occurs on the Los Padres National Forest and the surrounding private lands. Another Rocky Mountain elk population exists in southern Kern County. Based on periodic ground and aerial surveys conducted by the Department, there are approximately 300-500 elk in these two southern populations, which were established through translocation efforts. The population of Rocky Mountain elk proposed for regulated public hunting is scattered throughout portions of Lassen, Modoc, Shasta and Siskiyou counties. A portion of this population was established in 1913 by the Redding Elks Club. Fifty elk were loaded on boxcars in Gardiner, Montana (near Yellowstone National Park), and released at the Bully Hill Mine in Shasta County. During subsequent years, animals dispersed from the release site (and from other locations in southeastern Oregon) to scattered locations throughout northeastern California.

Historical Perspective of Tule Elk Management

Although smaller than Roosevelt elk, the tule elk is one of the largest land mammals endemic to California. Tule elk likely evolved from Rocky Mountain elk in California during the Pleistocene (McCullough 1969). Tule elk made a lasting impression on the first Europeans to arrive in California. Accounts in journals and diaries of these early explorers indicate that approximately 500,000 tule elk inhabited much of the oak-woodland and oak-grassland habitat types in the State (McCullough 1969). Appendix 15 depicts historic tule elk range.

The discovery of gold at Sutter's Mill in 1848 brought about the greatest impact on the tule elk population, both in terms of immediate reduction of total elk numbers and permanent loss of habitat. The large influx of people into California during the gold rush era resulted in tremendous pressures placed on the State's wildlife resources. People needed clothing and food, which could be obtained from elk. Market hunters soon eliminated tule elk from large accessible areas of their range. The elk's large size, coupled with their social behavior (herding), increased their vulnerability to market shooting (McCullough 1969). However, more important than market hunting, competition with livestock, or the conversion of perennial grasslands to annual grasslands, was the conversion of large amounts of tule elk habitat to agricultural land uses. By the late 1860s, tule elk were extirpated from all but one small locale in the southern San Joaquin Valley (McCullough 1969).

In 1874, while draining a marsh on the Miller-Lux Cattle Ranch in what is now Kern

County, workers observed a small group of tule elk. Henry Miller, an extremely wealthy and powerful landowner, ordered complete protection of tule elk on his land. This was to be the first in a series of cases where, under complete protection, tule elk numbers and distribution expanded, resulting in considerable damage to private property (Fowler 1985).

By the turn of the century, the elk on the Miller-Lux Ranch were causing extensive damage to fences, crops, and irrigated pasture. Miller requested the elk be relocated in an effort to reduce his damages. Over the next few years, the U.S. Biological Survey attempted to relocate tule elk via the "rodeo technique" (ropes and horseback). This technique did not provide positive results. In fact, the majority of the elk were killed during capture attempts or during transport to the release sites. A single relocation was considered partially successful when 21 elk were relocated to the Sequoia National Park. However, they died out by 1926 (McCullough 1969).

McCullough (1969) stated that by 1914 tule elk were causing $5,000-$10,000 damage per year on the Miller-Lux Ranch. At this time, the California Academy of Science took over the tule elk relocation effort. The Academy was much more successful in capturing tule elk because they baited elk into a corral trap instead of attempting to capture them from horseback. During the period from 1914 to 1934, the Academy relocated 235 tule elk to 22 different locations, including Cache Creek and the Owens Valley. As was the case with the earlier relocation attempts by the U.S. Biological Survey, the majority of the relocation projects were unsuccessful.

Tule elk at Cache Creek were allowed to expand their range and, until the summer of 1986, did not cause significant damage to private property. At the Tupman Tule Elk Reserve, elk were confined to a 953-acre enclosure, no mechanisms for population control were used, and the herd expanded to a point where the habitat was essentially destroyed and artificial feeding was necessary. This situation was greatly improved as a result of reducing the population by moving tule elk to other sites. In addition, the California Department of Parks and Recreation has undertaken numerous habitat improvement projects. In an effort to reduce damage to the improved habitat, the Department of Fish and Wildlife has held the herd size at 30-35 individuals by periodically relocating surplus elk.

In the Owens Valley, the Miller-Lux story repeated itself. Under total protection, elk numbers in the Valley increased rapidly, and local farmers and ranchers soon were experiencing serious depredation problems, including damage to fences, irrigation equipment, and alfalfa. In 1943, the Department attempted to provide depredation relief by recommending public hunting of tule elk in the Valley. From 1943 through 1969, the Commission approved a total of seven elk hunts. These hunts were not well received by farmers, who wanted all the elk removed, or animal preservationists, who objected to the rather drastic herd reductions.

By 1960, concern by tule elk preservationists resulted in the formation of the Committee

for the Preservation of Tule Elk. The Committee and other interested groups opposed hunting of tule elk. After the adoption of the 1969 tule elk hunt by the Commission, the Committee for the Preservation of Tule Elk sought legislation to prohibit hunting of tule elk. In 1971, specific legislation (commonly referred to as the Behr Bill) was enacted into law. This law restricted the Commission's authority to authorize the take of tule elk until their statewide numbers exceeded 2,000 or until the Legislature determined that there were insufficient areas available to accommodate such a number in a healthy state. It also required the Department to relocate elk to suitable areas and to report to the Legislature every two years on the status of the State's tule elk herds. Additionally, the legislation stated the Owens Valley elk population should not exceed 490 individuals.

Tule Elk Management (1971 through Present)

In 1971, Section 332, Fish and Game Code, was amended to prohibit the Commission from authorizing the take of tule elk until the statewide population estimate exceeded 2,000 animals (Koch 1989). At that time, approximately 500 tule elk inhabited California. In 1971, upon amendment of Section 332, and addition of Section 3951, Fish and Game Code, the Department was required to identify suitable relocation sites for a species which was known to wander great distances (over and through fences) and for its potential to damage agricultural crops. There were very few individuals or government agencies with suitable tule elk habitat which offered their lands for tule elk relocation.

In 1976, the United States Congress passed Public Law (PL) 94-389, which concurred with the amended California law in recognizing that the establishment of tule elk populations totaling 2,000 animals was an appropriate national goal and in setting the ceiling of 490 tule elk for the Owens Valley. More important, however, PL 94-389 required the secretaries of Defense, Agriculture, and the Interior to cooperate with the State in making suitable Federal lands reasonably available for tule elk. Additionally, in 1977, the Secretary of the Interior recommended to Congress that an Interagency Task Force be established to carry out the provisions of Federal and State legislation. At the direction of Congress, the Tule Elk Interagency Task Force was established in 1977.

The Management Plan for the Conservation of Tule Elk was completed by the Task Force in 1977 and revised in 1985. In the plan, the Task Force provided specific criteria to be met for an area to be considered a suitable tule elk release site. These criteria are based on sound biological principles, and take into account land-use practices and the laws and regulations of the State (Appendix 16).

Since its preparation, the Management Plan for the Conservation of Tule Elk has served as the foundation for the Department's tule elk management activities. Total protection after 1971, coupled with an aggressive reintroduction program in which over 1,170 tule elk have been moved to new areas of the State, resulted in a dramatic increase in the statewide tule elk population.

However, as in the past, this increase in elk numbers and occupied range has resulted in a situation where at least 12 of the State's tule elk herds have caused or are continuing to cause damage to private property. In response to the increasing level of tule elk damage to property occurring in the State, Assemblyman Hauser introduced legislation (AB 998) in 1987 which amended sections 332 and 3951, Fish and Game Code. Assembly Bill 998 was approved by the Legislature and signed by the Governor on September 27, 1987. As amended, Section 332 of the Fish and Game Code allows the Commission to authorize tule elk hunting if the average of the Department's statewide tule elk population estimate exceeds 2,000 animals. Section 3951 specified that the maximum number of tule elk in the Owens Valley should not exceed 490 individuals, and directed the Department to relocate tule elk to suitable areas within the State and report to the Legislature every two years on their status in California (the last report to the Legislature was submitted in October, 2000 and legislation in 2001 eliminated the reporting requirement). The statute also requires that, where economic or environmental damage occurs, emphasis shall be placed on managing each tule elk herd at biologically sound levels through the use of relocation, hunting, or other appropriate means determined by the Department.

Section 3951, Fish and Game Code, also requires the Department to prepare management plans for "high priority areas, including, but not limited to Potter Valley and Mendocino County..." The Legislature only defined Potter Valley and Mendocino County as high-priority areas and left the responsibility of determining other high-priority areas to the Department. In addition to Potter Valley and Mendocino County, the Department identified Grizzly Island, La Panza, Cache Creek, Lone Pine, Tinemaha, and Bishop as other high-priority areas. Management plans for these and eight other areas have been completed and approved by the Department.

In 1987, the statewide tule elk population exceeded 2,000 animals and the Commission established regulations under which a limited number of tule elk would be hunted in 1988 (Fish and Game Commission, Statement of Purpose for Regulatory Action, January 11, 1988). However, in September 1988, a citizens group obtained a court order preventing implementation of the regulations, based primarily on a finding that the Commission's decision did not comply with CEQA. In 1989, the Department prepared an environmental document regarding tule elk hunting, which was circulated for review as provided for by CEQA. The Commission certified the environmental document and adopted regulations providing for the take of up to 95 tule elk from specific areas in the State (the Bishop and Lone Pine subherds and a portion of the herd at Cache Creek). Eighty-four elk were taken by hunters during the 1989 tule elk hunting season.

Since 1989 the Department has prepared the appropriate environmental documentation to continue to provide for public hunting of tule elk from specific populations. In 1990, Assemblyman Hauser introduced legislation which was passed by the Legislature and signed by the Governor (AB 2848), amending Section 332, Fish and Game Code, to allow the Commission to authorize issuance of up to three elk tags for fund-raising

purposes. All revenue generated by the "fund-raising" tags is to be used for elk management in California. Since 1990, the Commission has authorized public tule elk hunting at additional locations, including Alameda County, Glenn County, Grizzly Island, Fort Hunter Liggett, Fresno County, Kern County, Kings County, Lake County, Mendocino County, Merced County, Inyo County, Santa Clara County, and Stanislaus County.

The dramatic increase in numbers and distribution has provided a substantial increase in opportunities for viewing, photographing, and natural history study of tule elk. Currently (October 2016), there are at least 5,100 tule elk in 22 separate herds throughout California (Appendix 14). Four herds (San Luis, Tupman, Point Reyes, and Grizzly Island) have formal interpretive programs where the public has the opportunity to view, photograph, and observe the natural history of tule elk with assistance provided by experienced State, Federal, or volunteer staff. A tule elk viewpoint along a major highway has been established for the Tinemaha subherd. There the public can view, photograph, and study the behavior of tule elk. Interpretive signs can also be found for the Cache Creek tule elk herd.

Additionally, major land acquisitions by the Department, The Nature Conservancy, and BLM in the La Panza Tule Elk Management Unit in San Luis Obispo County and in the Cache Creek Tule Elk Management Unit (Colusa, Lake, and Yolo counties) provide increased access to areas used by elk. The management plan for the La Panza Tule Elk Management Unit contains a specific element for developing formal interpretive programs. In addition to the herds which have established interpretive programs, approximately one-half of the State's tule elk exist on public lands where the public has opportunities to observe and photograph tule elk.

Existing conditions regarding elk hunting

Regulated public hunting for Roosevelt elk has occurred annually in California since 1986, whereas annual hunting for Rocky Mountain began in 1987. Public tule elk hunting has been authorized by the Commission annually since 1989. Although additional public hunts for Roosevelt, Rocky Mountain and tule elk have been established subsequent to 1986, annual elk hunting has been part of the existing conditions in California for the last 29 years. Appendix 17 lists the verbatim for the current condition of elk hunting in California.

PLM Hunts

The PLM Program was authorized by the Legislature to protect and improve wildlife habitat by encouraging private landowners to manage their property to benefit fish and wildlife. Economic incentives are provided to landowners through biologically sound yet flexible seasons for game species, resulting in high-quality hunting opportunities which may be marketed by the landowner in the form of fee hunting and other forms of recreation. Section 601, Title 14, CCR, contains regulations adopted by the

Commission pertaining to the program, and sections 3400-3409, Fish and Game Code, contain the subject statutes.

Landowners have the right to charge access fees for hunting, fishing, and other recreation on their property. The Department carefully reviews each plan to ensure that required habitat improvement efforts benefit many species of wildlife and that harvest strategies comply with accepted goals and objectives for management of the game species involved. The PLM Program further allows the Commission to authorize hunting and fishing seasons and bag limits specific to licensed PLM areas pursuant to approved management plans.

The PLM Program currently is an element of the Department's elk management program. During 2015, five landowners offered opportunities to hunt Rocky Mountain elk, 35 landowners offered opportunities to hunt tule elk, and ten landowners offered opportunities to hunt Roosevelt elk through the PLM Program. It is anticipated that up to three additional landowners will enroll in the program and hunt Roosevelt elk in 2016 and potentially two will enroll and hunt tule elk in 2016.

During 2015 PLM hunts for elk will occur at the following ranches: Alexander Ranch, Alexander Dairy, Amann Ranch, Avenales Ranch, Bardin Ranch, Big Lagoon, Black Ranch, Camp 5 Outfitters (Morisoli), Capistran Ranch, Carnaza Wildlife Management Area, Carrizo Ranch, Chimney Rock Ranch, Clark and White Ranch, Connolly Ranch, Cottrell Ranch, D-Rafter L Ranch, DeFrancesco and Eaton, Eden Valley Ranch, Fulton Ranch, Gabilan Ranch, Hartnell Ranch, Hearst Ranch, Hunter Ranch, Indian Valley Cattle Co., Isabel Valley Ranch, JS Ranch, Klamath, Lewis Ranch, Lone Ranch, Miller-Eriksen Ranch, PBM Farms, Potter Valley Wildlife Management Area, Rancho La Cuesta, Redwood House Ranch, Rooster Comb Ranch, Roseburg Resources Pondosa, R-R Ranch, Shamrock Ranch, Slick Rack Ranch, Smith River, Spring Valley Ranch, Stover Ranch, Summer Camp Ranch, Sweetwater Ranch, Tejon Ranch, Temblor Wildlife Management Area, Trinchero Ranch, Wiggins Ranch, and the Work Ranch. During 2016, the Department does not expect major changes to the PLM participants identified in Appendix 18.

<u>Cooperative Elk Hunting Area hunts (Section 555, Title 14, CCR).</u>

The existing regulations also provided for up to 40 tags through the Cooperative Elk Hunting Program during 2015 (Section 555, Title 14, CCR), however only 30 tags were issued.

To encourage protection and enhancement of elk habitat and provide eligible landowners an opportunity for limited elk hunting on their lands, the department may establish cooperative elk hunting areas and issue license tags to allow the take of elk as specified in Section 364, and subject to the following conditions:

(a) Definition and Scope. A cooperative elk hunting area is an area of private land located within the boundary of an area open to public elk hunting (as identified in Section 364). Minimum size of a cooperative elk hunting area shall be 5,000 acres, except that contiguous parcels of at least 640 acres in size may be combined to comprise a cooperative elk hunting area. Within an area open to public elk hunting, the number of cooperative elk hunting license tags issued shall not exceed 20 percent of the number of public license tags for the corresponding public hunt and shall be of the same designation (i.e., antlerless, spike bull, bull or either-sex) as the public license tags.

(b) Application Process. Application forms are available from the department's headquarters and regional offices. A person (as defined by Fish and Game Code Section 67) owning at least 640 acres within a cooperative elk hunting area shall be eligible to apply for a cooperative elk hunting area permit. Applicants shall designate one individual eligible to receive one elk license tag by the date indicated under subsection (3) below. Such individuals shall be at least 12 years of age and possess a valid California hunting license. A person may annually submit a cooperative elk hunting area application where they own sufficient habitat as described in subsection (a) above, for each public hunt area in which their property occurs.

(1) Applications shall be submitted to the department's regional office nearest the proposed cooperative elk hunting area. Department of Fish and Game regional offices are located as follows:
Northern California and North Coast Region, 601 Locust Street, Redding 96001 (530) 225-2300
Sacramento Valley and Central Sierra Region, 1701 Nimbus Road, Rancho Cordova 95670 (916) 358-2900
Central Coast Region, 7329 Silverado Trail, Box 47, Yountville 94599 (707) 944-5500
San Joaquin Valley and Southern Sierra Region, 1234 East Shaw Avenue, Fresno 93710 (559) 243-4005
South Coast Region, 4949 View Crest Avenue, San Diego 92123 (858) 467-4201
Eastern Sierra and Inland Deserts Region, 4775 Bird Farm Road, Chino Hills 91709 (909) 597-9823

(2) Completed applications must be received by the first business day following July 1. Only those applications that are filled out completely will be accepted. The Department will evaluate applications to determine if the specified parcels are of sufficient size within the boundary of a public elk hunt area, and contain important elk habitat. Rejected applications and those that are incomplete will be returned within 15 days of receipt by the department. If the number of accepted applications exceeds the license tags available, the department will determine successful applicants and a list of alternates by conducting a random drawing from the pool of qualified applicants as soon as possible after the application deadline. For any license year that the demand for cooperative elk hunting license tags within an area open to public hunting (as identified in Section 364) exceeds the number of tags available, tags will be first issued to applicants that did not

receive a tag the previous year. If the quota is not filled, tags will be issued to the remaining applicants by random drawing.

(3) Successful applicants will be notified by the department as soon as possible after the application deadline. Applicants shall submit the name, address, and valid California hunting license number of designated elk license tag recipients and payment of elk license tag fees by check, money order, or credit card authorization in the amount specified by subsection 702(b)(1)(L)(M), to the department's regional office nearest the proposed cooperative elk hunting area, by the first business day following August 1.

(c) An elk license tag issued pursuant to the provisions of this section is valid only during the general elk season in which the cooperative elk hunting area occurs and shall only be used on land specified in the landowner's application. License tags are not transferable.

(d) All provisions of the Fish and Game Code and Title 14, CCR, relating to the take of birds and mammals shall be conditions of all license tags issued pursuant to this section.

(e) Any permit issued pursuant to Section 555 may be canceled or suspended at any time by the commission for cause after notice and opportunity to be heard, or without a hearing upon conviction of a violation of this regulation by a court of competent jurisdiction.

Note: Authority cited: Section 1575, Fish and Game Code.
Reference: Sections 67 and 1575 Fish and Game Code.

POLICY CONSIDERATIONS

The Legislature formulates laws and policies regulating the management of fish and wildlife in California. The general wildlife conservation policy of the State is to encourage the conservation and maintenance of wildlife resources under the jurisdiction and influence of the State (Section 1801, Fish and Game Code). The policy includes several objectives, as follows:

1. To provide for the beneficial use and enjoyment of wildlife by all citizens of the State;
2. To perpetuate all species of wildlife for their intrinsic and ecological values, as well as for their direct benefits to man;
3. To provide for aesthetic, educational, and non-appropriative uses of the various wildlife species;
4. To maintain diversified recreational uses of wildlife, including hunting, as proper uses of certain designated species of wildlife, subject to regulations consistent with the maintenance of healthy, viable wildlife resources, the public safety, and a quality outdoor experience;

5. To provide for economic contributions to the citizens of the State through the recognition that wildlife is a renewable resource of the land by which economic return can accrue to the citizens of the State, individually and collectively, through regulated management. Such management shall be consistent with the maintenance of healthy and thriving wildlife resources and the public ownership status of the wildlife resource;
6. To alleviate economic losses or public health and safety problems caused by wildlife; and
7. To maintain sufficient populations of all species of wildlife and the habitat necessary to achieve the above-stated objectives.

With respect to tule elk, the Legislature has established the State's policy regarding management in sections 332, 3951 and 3952, Fish and Game Code. Section 332 provides that the Commission may determine and fix the area or areas, the season and hours, the bag and possession limit, procedures for making elk hunting tags available (including fund-raising tags), and the number of elk that may be taken under the rules and regulations of the Commission. This law also provides that the Commission may authorize the take of tule elk if the average of the Department's statewide tule elk population estimate exceeds 2,000 animals or the Legislature determines, pursuant to reports provided by the Department, that suitable areas cannot be found in California to accommodate such a number in a healthy condition. In addition to providing the Commission with the authority to authorize the take of tule elk pursuant to Section 332, Section 3951 requires that when relocating tule elk to suitable areas the Department shall cooperate to the maximum extent possible with Federal and local agencies, as well as private landowners. Sections 3951 and 3952 require that, when economic or environmental damage occurs, the Department shall manage tule elk herds at sound biological levels through the use of relocation, hunting, or other appropriate means, as determined by the Department. Section 3951 establishes a maximum tule elk population level of 490 animals in the Owens Valley.

The Department has concluded that the proposed project will not have a significant adverse effect on the environment. No mitigation measures or alternatives to the proposed project are needed.

GLOBAL CLIMATE CHANGE

Climate changes caused by increasing atmospheric concentrations of greenhouse gases are expected to result in marked changes in climate throughout the world (deVos, J.C. and T. McKinney, 2007). Although many wildlife habitats in North America have become progressively warmer and drier in the last 12,000 years, the greatest rate of change has occurred during the last 150 years (Fredrickson et al. 1998). Predicted changes due to continued warming include increased frequency and severity of wildfires, increased frequency of extreme weather events, regional variation in precipitation, northward and upward shifts in vegetative communities, and replacements

of biotic communities. These changes are expected to affect abundance, distribution, and structure of animal and vegetative communities.

Local and specific regional changes in climate and associated changes in vegetative communities will be the determining factors regarding the distribution and abundance of elk in California. Although research specific to elk responses to climate change is limited, what information does exist indicates that both adverse and beneficial effects - depending on a variety of local/regional factors such as latitude, elevation, topography, and aspect – can be expected to result. For example, in the Rocky Mountain National Park where snow accumulation currently limits elk winter range, computer simulations suggest a reduction in future snow accumulations of up to 25-40%. An expansion of winter range would serve to increase over-winter survival and recruitment of juveniles into the adult population, leading to an increase of the overall elk population in that area (Hobbs et al. 2006). Conversely, research in Banff National Park, Canada indicates climate change will result in colder winter temperatures, increased snowfall, and a higher frequency of winter storms (Hebblewhite, 2005). These factors would result in a decrease in over-winter survival and recruitment, leading to an overall reduction of the elk population for that area.

Elk hunting in California is regulated by the State Fish and Game Commission. Hunting seasons and tag quotas are proposed to the Commission for adoption on an annual basis. These seasons and quotas are based on annual population and harvest data, annual population model results, and area-specific population/harvest objectives. Although the impact of climate change on California's elk population is difficult to predict and warrants continued study, the Department and the Commission have the ability to quickly respond to population fluctuations (positive or negative) by increasing or decreasing hunter opportunity in accordance with current and future management objectives for this species. However, reducing one mortality factor (sport hunting) will not alone mitigate for impacts associated with global climate change; the ability to manage and provide adequate amounts of required habitats is the ultimate deciding factor in wildlife populations.

POTENTIAL FOR SIGNIFICANT EFFECTS

The potential for significant effects include impacts on the gene pool, impacts on social structure, effects on habitat, effects on recreational opportunities, effects on other wildlife species, effects on economics, effects on public safety, growth inducing impacts, short-term uses and long term productivity, significant irreversible environmental changes, welfare to the individual animal, and cumulative impacts.

The proposed project allows limited public, PLM, and Cooperative hunting of Roosevelt elk in six areas including all or portions of Del Norte, Humboldt, Mendocino, Tehama, Trinity, and Siskiyou counties. In addition, Rocky Mountain elk in portions of Lassen, Modoc, Monterey, Shasta, San Luis Obispo, and Siskiyou counties, and tule elk in portions of Alameda, Colusa, Fresno, Glenn, Kern, Kings, Lake, Mendocino, Monterey,

San Benito, San Luis Obispo, Santa Barbara, Santa Clara, Solano, Sonoma, and Ventura counties. The project is designed to avoid adverse environmental impacts and will result in removing not more than 625 Roosevelt elk, 108 Rocky Mountain elk, and 621 tule elk as a result of hunting programs on an annual basis (including PLM, SHARE, and Cooperative Elk Hunting). The number of tags issued to result in at or below the analyzed harvest is based on previous years average hunter success for the corresponding zone and tag type. Of these tags not more than 255 tags will be issued to hunt at specific locations in California under the PLM Program. In summary, the proposed project will involve elk hunting (public, PLM, SHARE, and Cooperative elk tags) for six of the State's Roosevelt elk areas, three Rocky Mountain elk areas, and 16 tule elk areas.

Elk hunting will result in the death of individual animals. The removal of individual animals from selected herds which are relatively large and healthy will not significantly reduce herd size on a long-term basis. Production and survival of young animals within each herd will replace the animals removed by hunting (Fowler 1985, Racine et al. 1988). Since public elk hunting will affect no more than 25 of the State's elk areas under the proposed project and all alternatives considered, removal of individuals will have little influence on the statewide elk population. The herds where hunting is proposed are geographically separated and widely distributed. The proposed project will result in maintaining the statewide tule elk population well above the legislative limit of 2,000 elk. Therefore, the proposed action of removing no more than approximately 1,099 elk by public hunting (general, SHARE, and Cooperative hunts) and 255 elk through the PLM Program will not have a significant adverse impact on either local or statewide elk populations. The Department does not anticipate issuing up to the maximum number of tags in most areas but has analyzed that potential impact under the proposed project.

Appendix 19 describes the modifications from the 2015 elk hunting regulations the Department is proposing to incorporate in the 2016 elk hunting regulations. Appendix 20 describes the impacts these modifications will have on the twelve (12) factors examined in each of the prior nineteen (19) environmental documents (1988 through 2010 – Department files) certified by the Fish and Game Commission regarding elk hunting. The modifications proposed include adding two (2) entirely new hunt boundaries, splitting four existing hunt zones into eleven (11) zones, expanding two (2) hunt zones, modifying one (1) hunt boundary, adding additional periods to six (6) hunt zones, modifying season dates for one (1) hunt zone, modifying tag ranges for ten (10) elk zones, modifying available hunt areas for one (1) archery only elk hunt, and modifying season dates for the fund raising tags.

Methodology

A computer model which simulates herd performance (Smith and Updike 1987) was used to assess effects of the proposed action on elk herds where hunting is anticipated.

A variety of natural and human-induced factors combine to affect the status of a wildlife population. Natural factors affecting elk populations include, but are not limited to, such things as predation, starvation, disease, and parasitism. Environmental factors (e.g., precipitation) can affect food quantity and quality, thereby affecting elk populations. Theoretically, competition among members of the same species and between different species (e.g., deer, elk) also can affect elk populations. Catastrophic events (e.g., wildfires) can affect localized populations on a short-term basis. Human-induced factors, such as urbanization and agricultural development, also affect elk populations. Hunting can affect a population in various ways, depending on the intensity and level of harvest.

Modern wildlife management uses models to analyze, understand, and predict the outcomes and complex interactions of the natural environment. Like many other technical fields that affect everyday life of society, such as chemical engineering, aerospace technology, and climatology, the science of wildlife management has found that the use of models is invaluable for predicting the effects of human-induced and natural events on wildlife and their habitat.

Population models can range from simple word models (the statement "elk are born, grow up, reproduce and die" is a grossly simple word model of a population process) to highly complex and sophisticated mathematical abstractions. Some models are empirical (that is, based on observed data), and others are theoretical. Many models are useful in helping to frame conceptualizations of population processes, resulting in testable predictions about the subject at hand. Nevertheless, the goal of a model is to aid in analyzing known facts and relationships that would be too cumbersome or time consuming to analyze manually. Some of these models describe specific systems in a very detailed way, and others deal with general questions in a relatively abstract fashion. All share the common purpose of helping to construct a broad framework within which to assemble an otherwise complex mass of field and laboratory observations. Though we often think of models in terms of equations and computers, they can be defined more generally as any physical or abstract concepts of the structure and function of "real systems" or natural occurrences.

There are numerous software packages available to aid in the analysis of data from elk populations and their ranges. To effectively investigate the combined effects of hunting on an elk population, a population model which acts dynamically should be employed. Simulation modeling, in which the dynamics of a population are mimicked through bookkeeping of birth and death rates, is useful in wildlife management for exploring population responses to changes in management strategies, (i.e., hunting; Walters 1986). This modeling will be discussed further.

Key in the development and use of any model is its reliability. The models used in this document have been developed based on field observation, published literature, and/or expert opinion. They have been tested against known results and are consistent.

Compensatory Response

The Stock-Recruitment model (Ricker 1954, McCullough 1984) is useful for conceptualizing compensatory mechanisms and density-dependent responses that are believed to occur in wildlife populations. This model shows population responses to changes in density in terms of net recruitment (i.e., the survival of calves). It has the advantage of not requiring assumptions about internal birth and death rates, and it can be empirical.

The fundamental assumption of the Stock-Recruitment model is that calf survival is a function of population density and decreases as density increases (the converse is also true). There is a large body of evidence indicating that this is the case among populations of elk (McCullough 1979, Clutton-Brock et al. 1982). Thus, density can be measured in either absolute or relative terms, and with net recruitment one can begin to build a model that will allow predictions of the population's response to changes in density.

At a low population size, even with a high recruitment rate, few new individuals enter the population, but their survival is higher. As population size increases, so does the number of recruits, up to a certain level. The rate of recruitment decreases as a result of lower survival of young. The degree of elk harvest necessary to achieve maximum sustained yield (MSY) can be expected to result in low population densities. Objectives to maximize residual population size and MSY are necessarily mutually exclusive. This has important implications for harvest management, as harvesting to achieve MSY suppresses the total population below its maximum potential. Spring population size (after calves are born) is thus below the carrying capacity of the range (McCullough 1984).

At high densities, the premortality population will temporarily exceed carrying capacity (if the area is at carrying capacity – few of California's elk populations are believed to be at carrying capacity), resulting in possible habitat damage. When population sizes are at or near the range carrying capacity, yield will be low (proportionately), because recruitment of calves is low relative to herds at lower density. In such cases, increases in harvest result in increased net recruitment, and the population will stabilize at a new population size if the new harvest level remains fixed (McCullough 1984).

Elk Pop (Smith and Updike 1987) is a microcomputer-based model which was developed by the Department for the purpose of analyzing harvest alternatives. Elk Pop was used to assess effects of the proposed project (and project alternatives) on the specific Roosevelt, Rocky Mountain, and tule elk herds where hunting is proposed. The model allows the user to vary carrying capacity to reflect real-world changes in habitat capability. Observed population age and sex ratios are primary input to the model. Elk Pop allows analysis of multiple harvest alternatives simultaneously and is easily adapted to most herd situations.

Elk Pop utilizes data on age and sex composition of the herd, maximum calf survival, estimated population numbers, nonhunting mortality, and hunting mortality. Age and sex composition and maximum calf survival figures used in the model are based on actual observed rates. Population level and nonhunting mortality rates were estimated. Estimates of nonhunting mortality rates were considered valid representations of actual nonhunting mortality rates when the model predicted the observed herd composition ratios for 10 consecutive years. Effects of various harvest scenarios were then predicted on the basis of observed composition ratios and estimated nonhunting mortality rates. The computer model runs for various harvest scenarios (proposed project and the alternatives) for each elk herd where hunting is proposed can be found in Appendix 4.

IMPACTS OF HUNTING ON ELK POPULATIONS

Elk hunting will result in the death of individual animals. The removal of individual animals from selected herds which are relatively large and healthy will not significantly reduce herd size on a long-term basis. Production and survival of young animals within each herd will replace the animals removed by hunting (Fowler 1985, Racine et al. 1988). Since public elk hunting will affect no more than 26 of the State's elk areas under the proposed project and all alternatives considered, removal of individuals will have little influence on the statewide elk population. The herds where hunting is proposed are geographically separated and widely distributed. The proposed project will result in maintaining the statewide tule elk population well above the legislative limit of 2,000 elk. Therefore, the proposed action of removing no more than 1,099 elk by public hunting and 255 elk through the PLM Program will not have a significant adverse impact on either local or statewide elk populations.

Numbers of elk harvested in the Big Lagoon, Klamath, Marble Mountains, Northeastern, Northwestern, and Siskiyou hunts during 2014 are reported in Table 2. Table 2 includes Roosevelt and Rocky Mountain elk that were taken by hunters in the PLM, public and Cooperative Elk Hunting programs. The Big Lagoon and Klamath hunts are no longer utilized hunt zones and currently (2015) fall within the Northwestern elk hunt boundary.

<u>Roosevelt and Rocky Mountain Elk Units</u>

TABLE 2
Roosevelt and Rocky Mountain Elk Harvest in 2014

Herd	PLM		General Season		Cooperative Elk Hunting		Total
	Bulls	Cows	Bulls	Cows	Bulls	Cows	
Marble Mountains			21	5	4	0	30
Siskiyou			11	5	3	2	21
Northwestern			22	3	2	0	27
Klamath			1	0	0	0	1
Big Lagoon			5	0	0	0	5
Northeastern			11	6	1	1	19
PLM - Roosevelt	9	3					
PLM – Rocky Mtn.	15	4					
Total	24	7	71	19	10	3	103

Siskiyou Roosevelt Elk Herds

There are 600-750 elk within the hunt area boundary. The proposed project would result in a maximum of 40 bulls and 50 antlerless elk being harvested including, General, PLM, SHARE, and Cooperative elk tags. Bull, antlerless, and either-sex tags would be issued across three general hunt periods and one archery/muzzleloader only.

Computer simulation runs of this harvest scenario (90 elk killed, 40 bulls and 50 antlerless) indicate the population would continue to expand in total numbers and suggest that the calf-to-cow ratio will increase as a result of the proposed project. Based on computer simulation, the bull-to-cow ratio would also increase as a result of the proposed project. The Department will continue to monitor this population and will adjust the tag quota if the bull-to-cow ratio decreases as a result of the proposed quota.

Although the proposed project may result in up to 90 individual elk in the Siskiyou hunt being killed by hunters, the information provided indicates the proposed level of harvest will not have a significant negative effect on the local population (herd). In fact, available information suggests that elk population numbers within the hunt area in Siskiyou County have increased since the Commission authorized this hunt in 1986. Prior to implementation of the hunt, Fischer and Kitchen (1984) observed a minimum of 51 individuals in the herd (based on 21 months of field study) and suggested that there were less than 100 elk within what is now the hunt boundary. Current estimates are over 600 elk within the hunt area.

Based on computer simulation modeling of the expected harvest levels, the Department concludes that the proposed project of harvesting up to 90 elk for the Siskiyou Roosevelt elk hunt will not have a significant effect on regional or statewide Roosevelt elk populations. Population numbers have increased within the Siskiyou hunt boundary under current tag allocation levels.

Marble Mountains Roosevelt Elk Herds (Marble Mountain North & Marble Mountain South)

Since 1985, the Department has released 253 Roosevelt elk in western portions of the Klamath National Forest in an effort to reestablish herds within suitable portions of their historic range. This effort appears to have been successful. Kitchen and Woodard (1995) reported elk population numbers in and near the Happy Camp portion of the hunt area were approximately 300 and continuing to increase. Additional elk are distributed in the following locations: Salmon River drainage, Cecilville, Doggett Creek, Hilt, Alex Hole, Ukonom, Somes Bar, Klamath River, Weaverville, Trinity Alps Wilderness Area, and others. The proposed regulations split the zone into a north and south unit. Simulation runs for both Marble Mountain North and Marble Mountain South were run to model effects of the proposed Roosevelt elk hunts. The Department estimated population numbers at 1500 elk in the north and 1500 elk in the south.

The proposed project would result in a maximum of 61bulls and 60 antlerless elk being harvested in each the north and south zones including, General, PLM, SHARE, and Cooperative elk tags. Bull, antlerless, and either-sex tags would be issued across three general hunt periods and one archery/muzzleloader only.

Computer simulation runs of this harvest scenario for each the north and south indicate that population numbers would increase in both the north and south if the proposed project was continued at the same level for a ten-year period. The bull-to-cow ratio would increase. The calf-to-cow ratio would also increase under the proposed harvest scenario.

The Department does not anticipate that this harvest scenario will result in adverse impacts to the Marble Mountains North or South Roosevelt elk herds. The apparent increasing trend in population numbers is suggestive that the population can withstand this level of hunting.

Northwestern Roosevelt Elk Herds (Del Norte and Humboldt)

The proposed regulations split the zone into two distinct units (Del Norte and Humboldt elk zones). Simulation runs for Del Norte and Humboldt zones were run to model effects of the proposed Roosevelt elk hunts. The Department estimated the Del Norte population at 725 elk and the Humboldt population at 850 elk.

The proposed project for the Del Norte zone would result in a maximum of 50 bulls and 70 antlerless elk being harvested including, General, PLM, SHARE, and Cooperative elk tags. Bull, antlerless, and either-sex tags would be issued across five general hunt periods.

Computer simulation runs of this harvest scenario for Del Norte indicate that population numbers would increase for several years and then slowly decrease (with a corresponding small reduction in antlerless tags) back to near the initial population level if this level of harvest was maintained for a ten-year period. The bull-to-cow ratio would decrease slightly, while the calf-to-cow ratio would increase under the proposed harvest scenario.

The proposed project for the Humboldt zone would result in a maximum of 65 bulls and 70 antlerless elk being harvested including, General, PLM, SHARE, and Cooperative elk tags. Bull, antlerless, and either-sex tags would be issued across five general hunt periods.

Computer simulation runs of this harvest scenario for Humboldt indicate that population numbers would increase for several years and then slowly decrease and level off to a population above the initial estimate if this level of harvest was maintained for a ten-year period. The bull-to-cow ratio would decrease and stabilize to an adequate level well above 25 bull-to-cow ratio. The calf-to-cow ratio would increase under the proposed harvest scenario.

The Department does not anticipate that this harvest scenario will result in adverse impacts to the Del Norte or Humboldt Roosevelt elk herds. The stable to increasing trend in population numbers is suggestive that the population can withstand this level of hunting.

Northeastern California Rocky Mountain Elk Herds

Elk are endemic to northeastern California, and historically have occurred at various densities when conditions have been favorable (McCullough 1969). Their range has expanded during recent years and population numbers have increased. It is likely that elk emigrated to northeastern California from southern Oregon, and perhaps other locations in northern California. With successful reproduction, herds became established in suitable areas. Elk are not distributed uniformly throughout northeastern California. At present, elk can be found in larger numbers in four general areas: the Warner Mountains, Devils Garden, Whitehorse Reservoir and Burney/Pit River.

There are 1,000-1,500 elk within the hunt area boundary. The proposed project would result in a maximum of 40 bulls and 40 antlerless elk being harvested including, General, PLM, SHARE, and Cooperative elk tags. Bull, antlerless, and either-sex tags would be issued during an antlerless, bull and either-sex archery only season.

To model effects of the proposed Northeastern Rocky Mountain elk hunt, the Department assumed that maximum hunter success would result in a harvest of 40 bulls and 40 antlerless elk. Computer simulation runs of this harvest scenario indicate that total population numbers would continue to increase, and that an increase in the bull and calf ratio would occur.

The Department does not anticipate that this harvest scenario will result in adverse impacts to the Northeastern Rocky Mountain elk herds. The stable to increasing trend in population numbers is suggestive that the population can withstand this level of hunting.

Tejon Ranch PLM

In 1966, Mr. Rex Ellsworth obtained a permit to import Rocky Mountain elk from Yellowstone National Park to a fenced compound on his ranch in Kern County approximately 10 miles southwest of Tehachapi (Thomas 1975). In 1967, 290 elk were shipped and 277 were released within the enclosure. Mortalities over the next few months were attributed to capture stress, transport and confinement. By mid-1967 elk began to escape from the enclosure due to a lack of fence maintenance.

There are 170-200 elk within the hunt area boundary. The proposed project would result in a maximum of 12 bulls and 7 antlerless elk being harvested. Bull and antlerless tags would be issued during the season.

To model effects of the proposed Tejon Ranch elk hunt, the Department assumed that maximum hunter success would result in a harvest of 12 bulls and 7 antlerless elk. Computer simulation runs of this harvest scenario indicate that total population numbers would remain stable, and that an increase in the bull and calf ratio would occur.

The Department does not anticipate that this harvest scenario will result in adverse impacts to the Tejon Ranch elk herd. The stable trend in population numbers is suggestive that the population can withstand this level of hunting.

Hearst Ranch PLM

There are approximately 130 elk on the PLM. These are Rocky Mountain Elk outside of their historic range in Monterey and San Luis Obispo counties. The proposed project would result in a maximum of 6 bulls and 6 antlerless elk being harvested. Bull and antlerless tags would be issued during the season.

To model effects of the proposed Hearst Ranch elk hunt, the Department assumed that maximum hunter success would result in a harvest of 6 bulls and 6 antlerless elk. Computer simulation runs of this harvest scenario indicate that total population numbers would remain relatively stable, and that an increase in the bull and calf ratio would occur.

The Department does not anticipate that this harvest scenario will result in adverse impacts to the Hearst Ranch elk herd. The stable trend in population numbers is suggestive that the population can withstand this level of hunting.

Tule/Roosevelt Elk Units

Mendocino (North Coast, Middle Fork, Upper Russian, Little lake, and South Coast)

The proposed regulation splits and expands the zone into five distinct units (North Coast, Middle Fork, Upper Russian, Little lake, and South Coast elk zones). Simulation runs for these zones were run to model effects of the proposed tule/Roosevelt elk hunts. The Department estimated populations for the North Coast at 420 elk, Middle Fork at 250 elk, Upper Russian at 200 elk, Little lake at 20 elk, and South Coast elk at 40 elk.

The proposed project for the Mendocino North Coast zone would result in a maximum of 18 bulls and 20 antlerless elk being harvested including, General, PLM, SHARE, and Cooperative elk tags. Computer simulation runs of this harvest scenario for Mendocino North Coast indicate that population numbers would remain stable to a small increase if this level of harvest was maintained for a ten-year period. The bull-to-cow and calf-to-cow ratio would increase under the proposed harvest scenario.

The proposed project for the Mendocino Middle Fork zone would result in a maximum of 12 bulls and 11 antlerless elk being harvested including, General, PLM, SHARE, and Cooperative elk tags. Computer simulation runs of this harvest scenario for Mendocino Middle Fork indicate that population numbers would remain stable to a small increase if this level of harvest was maintained for a ten-year period. The bull-to-cow and calf-to-cow ratio would increase under the proposed harvest scenario.

The proposed project for the Mendocino Upper Russian zone would result in a maximum of 12 bulls and 16 antlerless elk being harvested including, General, PLM, SHARE, and Cooperative elk tags. Computer simulation runs of this harvest scenario for Mendocino Upper Russian indicate that population numbers would slowly decrease if this level of harvest was maintained for a ten-year period. The bull-to-cow ratio would decrease slightly at first and then maintain close to the original level. The calf-to-cow ratio would increase under the proposed harvest scenario. The Department will continue to monitor this population and adjust tags if necessary.

The proposed project for the Mendocino Little lake zone would result in a 0 elk being harvested. These regulations would establish zone boundaries. Computer simulation runs of this scenario for Mendocino Little Lake (no harvest) indicate that population numbers would slowly increase over a ten-year period. The bull-to-cow and calf-to-cow ratio would increase under this scenario.

The proposed project for the Mendocino South Coast zone would result in a maximum of 1 bulls and 1 antlerless elk being harvested including, General, PLM, and SHARE elk tags. Computer simulation runs of this harvest scenario for Mendocino South Coast indicate that population numbers would slowly increase over a ten-year period. The bull-to-cow and calf-to-cow ratio would increase under the proposed harvest scenario.

Bull and antlerless tags would be issued across during the general, SHARE, and PLM hunt periods. The Department does not anticipate that this harvest scenario will result in adverse impacts to the Mendocino (North Coast, Middle Fork, Upper Russian, Little lake, and South Coast) tule/Roosevelt elk herds. The stable to increasing trend in population numbers is suggestive that the population can withstand this level of hunting.

Tule Elk Units

Numbers of tule elk harvested in the general elk zones and PLM during 2014 are reported in Table 3. Table 3 includes tule elk that were taken by hunters in the PLM, public and Cooperative Elk Hunting programs.

TABLE 3
Tule Elk Harvest in 2014

Herd	PLM		General Season		Cooperative Elk Hunting		Total
	Bulls	Cows	Bulls	Cows	Bulls	Cows	
Alameda			0	0			0
Bear Valley			1	0			1
Cache Creek			3	2			5
East Park			2	2			4
Fort Hunter Liggett			9	4			13
Grizzly Island			16	28			44
Lake Pillsbury			2	4			6
La Panza			12	11	0	1	24
Mendocino			2	1			3
Owens Valley			26	0			26
San Luis Res.			3	0			3
Santa Clara			1	0			1
PLM - Tule	58	47					105
Total	58	47	77	52	0	1	235

Alameda Tule Elk Herds

There are 100-200 elk within the hunt area boundary. The proposed project would result in a maximum of 3 bulls and 2 antlerless elk being harvested including, General, PLM, SHARE, and Cooperative elk tags. Bull and antlerless tags would be issued during the general and PLM seasons.

Computer simulation runs of this harvest scenario indicate the population would continue to expand in total numbers and suggest that the calf-to-cow ratio will increase as a result of the proposed project. Based on computer simulation, the bull-to-cow ratio would decrease slightly and then stabilize as a result of the proposed project. The Department will continue to monitor this population and will adjust the tag quota if the bull-to-cow ratio further decreases.

Although the proposed project may result in up to 5 individual elk in the Alameda zone being killed by hunters, the information provided indicates the proposed level of harvest will not have a significant negative effect on the local or statewide population.

Bear Valley Tule Elk Herds

There are 225-250 elk within the hunt area boundary. The proposed project would result in a maximum of 8 bulls and 11 antlerless elk being harvested including, General, PLM, SHARE, and Cooperative elk tags. Bull and antlerless tags would be issued during the general and PLM seasons.

Computer simulation runs of this harvest scenario indicate the population would stay relatively the same in total numbers and suggest that the calf-to-cow ratio will increase as a result of the proposed project. Based on computer simulation, the bull-to-cow ratio would also increase.

Although the proposed project may result in up to 19 individual elk in the Bear Valley zone being killed by hunters, the information provided indicates the proposed level of harvest will not have a significant negative effect on the local or statewide population.

Cache Creek Tule Elk Herds

There are 125--150 elk within the hunt area boundary. The proposed project would result in a maximum of 4 bulls and 3 antlerless elk being harvested including, General, PLM, SHARE, and Cooperative elk tags. Bull and antlerless tags would be issued during the general and PLM seasons.

Computer simulation runs of this harvest scenario indicate the population would stay relatively the same in total numbers and suggest that the calf-to-cow and bull-to-cow ratios would both increase as a result of the proposed project.

Although the proposed project may result in up to 7 individual elk in the Cache Creek zone being killed by hunters, the information provided indicates the proposed level of harvest will not have a significant negative effect on the local or statewide population.

Camp Roberts Tule Elk Herds Tule Elk Herds

Camp Roberts is a newly proposed hunt. The Camp Roberts herd was established in 1978 with 21 elk from Tupman. Thirteen more elk from Tupman were released in 1983. Several animals from each release were fitted with radio transmitters and monitored. A total of 88 elk was observed during a helicopter survey of Camp Roberts in 1988. Additionally, in 1991, the Department released 13 tule elk (from Grizzly Island) on a private ranch near San Ardo in southern Monterey County; in 1992 an additional 20 were released at the same location (Department of Fish and Game, 1995). Approximately 136 elk were counted during a January, 2014 survey and 524 elk were counted in January, 2015. Some of the elk counted in 2015 are believed to be double counts. The Department estimates there are 300-400 elk within the hunt area boundary.

The proposed project would result in a maximum of 15 bulls and 30 antlerless elk being harvested including General and Military tags. Bull and antlerless tags would be issued during the general and Military seasons.

Computer simulation runs of this harvest scenario indicate the population would slowly increase in total numbers and suggest that the calf-to-cow and bull-to-cow ratios would both increase as a result of the proposed project.

Although the proposed project may result in up to 45 individual elk in the Camp Roberts zone being killed by hunters, the information provided indicates the proposed level of harvest will not have a significant negative effect on the local or statewide population.

East Park Tule Elk Herds

There are 120--150 elk within the hunt area boundary. The proposed project would result in a maximum of 4 bulls and 10 antlerless elk being harvested including, General, PLM, SHARE, and Cooperative elk tags. Bull and antlerless tags would be issued during the general, SHARE, and PLM seasons.

Computer simulation runs of this harvest scenario indicate the population would stay relatively the same in total numbers and suggest that the calf-to-cow and bull-to-cow ratios would both increase as a result of the proposed project.

Although the proposed project may result in up to 14 individual elk in the East Park zone being killed by hunters, the information provided indicates the proposed level of harvest will not have a significant negative effect on the local or statewide population.

Fort Hunter Liggett (Fort Hunter Liggett Central Coast) Tule Elk Herds

The proposed regulation modifies and expands the zone boundaries for Fort Hunter Liggett and changes the name to Fort Hunter Liggett Central Coast. Simulation runs for Fort Hunter Liggett Central Coast were run to model effects of the proposed tule elk hunts. The Department estimated there are approximately 825 to 1,000 elk within the zone boundary. The proposed project would result in a maximum of 40 bulls and 70 antlerless elk being harvested including, General, Military, PLM, SHARE, and Cooperative elk tags. Bull, antlerless, and either-sex tags would be issued during the general, military, archery, muzzleloader, SHARE, and PLM seasons.

Computer simulation runs of this harvest scenario indicate the population would stay relatively the same with a small increase in total numbers and suggest that the calf-to-cow and bull-to-cow ratios would both increase as a result of the proposed project.

Although the proposed project may result in up to 110 individual elk in the Fort Hunter Liggett Central Coast zone being killed by hunters, the information provided indicates the proposed level of harvest will not have a significant negative effect on the local or statewide population.

Grizzly Island Tule Elk Herds

The proposed regulation modifies and expands the zone boundaries for the Grizzly Island tule elk zone. Simulation runs for Grizzly Island were run to model effects of the proposed tule elk hunts. The Department estimated there are approximately 300 elk within the zone boundary. The proposed project would result in a maximum of 32 bulls and 70 antlerless elk being harvested including, General, PLM, SHARE, and Cooperative elk tags. Bull, antlerless, and spike tags would be issued during the general, SHARE, and PLM seasons (Currently there are no PLM's in this area).

Computer simulation runs of this harvest scenario indicate the population would decrease in total numbers (with a future reduction in harvest) and suggest that the calf-to-cow and bull-to-cow ratios would both increase as a result of the proposed project. The current population level for this herd is above objectives and the proposed project would bring population levels within objectives.

Although the proposed project may result in up to 102 individual elk in the Grizzly Island zone being killed by hunters, the proposed level of harvest would be reduced in future years once the population was back within objectives (250 elk) and at that point will not have a significant negative effect on the local or statewide population.

Lake Pillsbury Tule Elk Herds

There are 150--180 elk within the hunt area boundary. The proposed project would result in a maximum of 6 bulls and 7 antlerless elk being harvested including, General,

PLM, SHARE, and Cooperative elk tags. Bull and antlerless tags would be issued during the general, SHARE, and PLM seasons.

Computer simulation runs of this harvest scenario indicate the population would stay relatively the same in total numbers and suggest that the calf-to-cow and bull-to-cow ratios would both increase as a result of the proposed project.

Although the proposed project may result in up to 13 individual elk in the Lake Pillsbury zone being killed by hunters, the information provided indicates the proposed level of harvest will not have a significant negative effect on the local or statewide population.

La Panza Tule Elk Herds

The proposed regulation modifies the zone boundaries for the La Panza tule elk zone. Simulation runs for La Panza were run to model effects of the proposed tule elk hunts. The Department estimated there are approximately 700 elk within the zone boundary. The proposed project would result in a maximum of 50 bulls and 70 antlerless elk being harvested including, General, PLM, SHARE, and Cooperative elk tags. Bull and antlerless tags would be issued during the general, SHARE, and PLM seasons.

Computer simulation runs of this harvest scenario indicate the population would increase and then decline over time but still being above the initial population estimate. Simulation runs suggest that the calf-to-cow and bull-to-cow ratios would both increase as a result of the proposed project.

Although the proposed project may result in up to 120 individual elk in the La Panza zone being killed by hunters, the information provided indicates the proposed level of harvest will not have a significant negative effect on the local or statewide population.

Owens Valley Tule Elk Herds (Bishop, Goodale, Independence, Lone Pine, Tinemaha, Tinemaha Mountain, West Tinemaha, and Whitney)

The Owens Valley tule elk hunt zones are separated into eight distinct zones (Bishop, Goodale, Independence, Lone Pine, Tinemaha, Tinemaha Mountain, West Tinemaha, and Whitney zones). Currently there are seven hunt zones with the proposed splitting of the Independence hunt zone (creating a Goodale zone). Simulation runs for these zones were run to model effects of the proposed tule elk hunts. The Department estimated populations for the Bishop at 25 elk, Goodale at 35, Independence at 50, Lone Pine at 75, Tinemaha at 17, Tinemaha Mountain at 40, West Tinemaha at 20, and Whitney at 20 elk.

Tule elk herds in the Owens Valley have demonstrated their ability to experience reductions in herd size without long-term adverse impacts on either local, regional, or statewide populations (Fowler 1985). Previous hunts had no long-term adverse impact

to the Owens Valley tule elk population because minimum population numbers regularly exceeded 490 (the maximum level specified by Public Law 94-389 and Section 3951, Fish and Game Code) during the 1970s and 1980s, based on survey results. Current population levels are below 490 and the proposed project allows for harvest levels to maintain the population below the mandated 490 elk.

The proposed project for the Bishop zone would result in a maximum of 3 bulls being harvested. Computer simulation runs of this harvest scenario for Bishop indicate that population numbers would increase if this level of harvest was maintained for a ten-year period. The bull-to-cow ratio would decrease and level off, while the calf-to-cow ratio would increase under the proposed harvest scenario. The Department would continue to monitor the bull ratios in order to maintain it at an adequate level.

The proposed project for the Goodale zone would result in a maximum of 3 bulls and 2 antlerless elk being harvested. Computer simulation runs of this harvest scenario for Goodale indicate that population numbers would increase if this level of harvest was maintained for a ten-year period. The bull-to-cow ratio would initially decline and then level off close to the original. The calf-to-cow ratio would decrease slightly under the proposed harvest scenario.

The proposed project for the Independence zone would result in a maximum of 4 bulls and 2 antlerless elk being harvested including. Computer simulation runs of this harvest scenario for Independence indicate that population numbers would increase if this level of harvest was maintained for a ten-year period. The bull-to-cow ratio would decline initially and then begin to increase. The calf-to-cow ratio would remain relatively the same under the proposed harvest scenario.

The proposed project for the Lone Pine zone would result in a maximum of 7 bulls and 5 antlerless elk being harvested. Computer simulation runs of this harvest scenario for Lone Pine indicate that population would increase over time if this level of harvest was maintained for a ten-year period. The bull-to-cow ratio would decrease to an adequate level, while the calf-to-cow ratio would remain nearly unchanged.

The proposed project for the Tinemaha zone would result in a maximum of 1 bull being harvested. Computer simulation runs of this harvest scenario for Tinemaha indicate that population numbers would increase if this level of harvest was maintained for a ten-year period. The bull-to-cow ratio would decrease and level off, while the calf-to-cow ratio would increase under the proposed harvest scenario.

The proposed project for the Tinemaha Mountain zone would result in a maximum of 3 bulls being harvested. Computer simulation runs of this harvest scenario for Tinemaha Mountain indicate that population numbers would slowly increase if this level of harvest was maintained for a ten-year period. The bull-to-cow ratio would decrease to an appropriate level, while the calf-to-cow ratio would increase under the proposed harvest scenario.

The proposed project for the West Tinemaha zone would result in a maximum of 2 bulls being harvested. Computer simulation runs of this harvest scenario for West Tinemaha indicate that population numbers would increase if this level of harvest was maintained for a ten-year period. The bull-to-cow ratio would decrease and level off, while the calf-to-cow ratio would decrease and remain stable at an adequate level under the proposed harvest scenario. The Department would continue to monitor the bull ratios in order to maintain it at an adequate level.

The proposed project for the Whitney zone would result in a maximum of 2 bulls being harvested. Computer simulation runs of this harvest scenario for Whitney indicate that population numbers would increase if this level of harvest was maintained for a ten-year period. The bull-to-cow ratio would decline initially and then begin to increase. The calf-to-cow ratio would increase and then remain stable under the proposed harvest scenario.

Although the proposed project may result in up to 34 individual elk in the Owens Valley zone being killed by hunters, the information provided indicates the proposed level of harvest will not have a significant negative effect on the local or statewide population.

San Emigdio Tule Elk Herds

San Emigdio is a proposed new hunt. In January of 1998, five sub-adult bulls and 15 cows from San Luis Refuge were released in San Emigdio Canyon on land owned by the Wildlands Conservancy. Three translocation events occurred in October of 1999 when three bulls and 34 cows from Concord Naval Weapons Station were released to augment the initial effort. In February, 2005, two bulls and 19 cows from San Luis Refuge were released. In 2013, two adult bulls, two yearling bulls and two cows from San Luis Refuge were released. In March, 2014, an additional 15 cows and calves (i.e., born in 2013) from San Luis Refuge were released.

The Department estimates the population to be between 360-400 elk. The proposed project would result in a maximum of 10 bulls and 24 antlerless elk being harvested including, General, PLM, SHARE, and Cooperative elk tags. Bull antlerless tags would be issued during the general, SHARE, and PLM seasons.

Computer simulation runs of this harvest scenario indicate the population would increase in total numbers and suggest that the calf-to-cow and bull-to-cow ratios would both increase as a result of the proposed project.

Although the proposed project may result in up to 34 individual elk in the San Emigdio zone being killed by hunters, the information provided indicates the proposed level of harvest will not have a significant negative effect on the local or statewide population.

San Luis Reservoir Tule Elk Herds

Twenty-one elk from Concord Naval Weapons Station were released on a private ranch south of the San Luis Reservoir to re-establish tule elk in the unit in 1990. Elk dispersed widely from the release site (BLM 1992). In 1992, eight more cows and one bull from Grizzly Island were added and nine more cows and one bull from Tupman were added in 1998.

The Department estimates the population to be 390-450 elk. The proposed project would result in a maximum of 15 bulls and 30 antlerless elk being harvested including, General, PLM, SHARE, and Cooperative elk tags. Bull antlerless tags would be issued during the general, SHARE, and PLM seasons.

Computer simulation runs of this harvest scenario indicate the population would increase in total numbers and suggest that the calf-to-cow and bull-to-cow ratios would both increase as a result of the proposed project.

Although the proposed project may result in up to 45 individual elk in the San Luis Reservoir zone being killed by hunters, the information provided indicates the proposed level of harvest will not have a significant negative effect on the local or statewide population.

Santa Clara Tule Elk Herds

Sixty-five tule elk from the Owens Valley were released on private ranches in southern Santa Clara County near Mt. Hamilton from 1978-1981. These elk dispersed into portions of Alameda, San Joaquin, Santa Clara and Stanislaus counties. Tule elk also have been released at various locations outside the unit since 1981 (in south San Benito County, western Merced County and south Monterey County); some of which subsequently dispersed into the unit. Finally, 9 adult bulls from San Luis National Wildlife Refuge were released at the San Antonio Valley Ecological Reserve (Santa Clara County) in March, 2014.

The Department estimates the population to be 160-180 elk. The proposed project would result in a maximum of 10 bulls and 10 antlerless elk being harvested including, General, PLM, SHARE, and Cooperative elk tags. Bull antlerless tags would be issued during the general, SHARE, and PLM seasons.

Computer simulation runs of this harvest scenario indicate the population would increase in total numbers. The bull-to-cow ratio would decrease to an appropriate level, while the calf-to-cow ratio would increase under the proposed harvest scenario.

Although the proposed project may result in up to 20 individual elk in the Santa Clara zone being killed by hunters, the information provided indicates the proposed level of harvest will not have a significant negative effect on the local or statewide population.

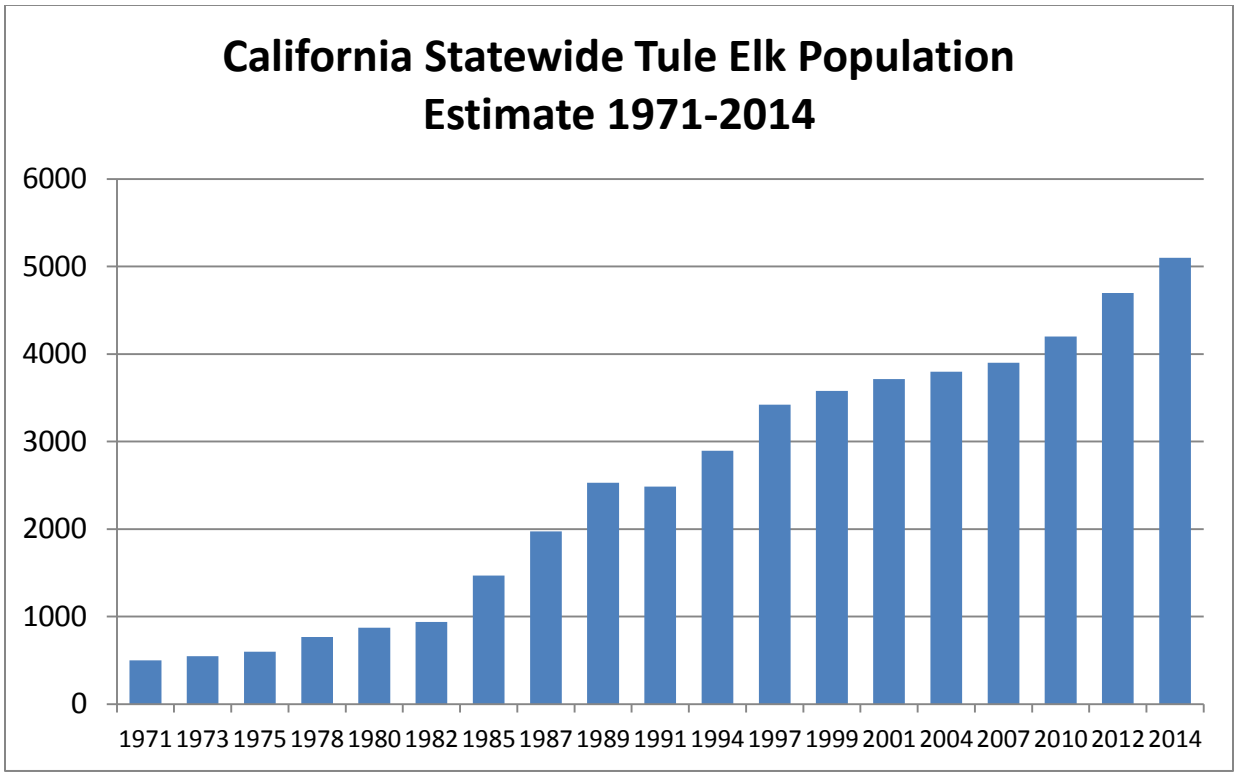
IMPACTS ON THE GENE POOL

The Department estimates there are a minimum of 5,000 Roosevelt elk distributed throughout several areas of northern California. The proposed project would allow the total public take (harvest) of no more than 625 Roosevelt elk from six areas. Assuming a condition where all tagholders were successful, this would result in a short-term reduction of twelve percent of the statewide Roosevelt elk population. This does not constitute a significant impact to the statewide gene pool and is well within the population's ability to maintain or increase in size over the long term.

As reported previously, the Department estimates there are a minimum of 1,500 Rocky Mountain elk in the State. The majority of Rocky Mountain elk occur in three separate areas of the State. The proposed project would allow the take of no more than 108 elk from the Northeastern California hunt zone and two PLM's with Rocky Mountain elk outside of their historic range. It is expected that 23-28 elk will be taken from the Tejon Ranch in Kern and Los Angeles counties and the Hearst Ranch in Monterey and San Luis Obispo counties. This level of harvest is far below the population's sustained-yield level. Therefore, the expected combined (public and PLM) take of less than 110 Rocky Mountain elk from a statewide population of over 1,500 will be a short-term reduction of less than 7.5 percent of the statewide population. This does not constitute a significant impact to the statewide gene pool and is well within the population's ability to maintain or increase in size over the long term.

As of August 2015, the average of the Department's statewide tule elk population estimate was at least 5,100 animals. The statewide tule elk population has been increasing since 1971, based on Department surveys and estimates (Figure 1). The 22 tule elk herds in the State are widely distributed throughout the coastal range of California from northern Santa Barbara County to central Mendocino County. In addition, tule elk are located in the Owens Valley and the San Joaquin Valley (see Appendix 14). There are free ranging tule elk found outside of established elk zones including Point Reyes National Seashore. In addition to the free ranging tule elk there are three fenced enclosures containing tule elk within California (Point Reyes National Seashore, San Luis National Wildlife Refuge, and Tupman Tule Elk State Preserve).

Figure 1. California Statewide Tule Elk Population Estimate 1971-2014



Assuming a condition where the analyzed maximum harvest was reached (including general, SHARE, PLM, and Military), 621 tule elk would be removed from the statewide population (5,100 animals). This short-term reduction of approximately twelve percent of the statewide tule elk population does not constitute a significant impact to the gene pool and is well within the population's ability to maintain or increase in size over the long term. The Department does not anticipate harvesting up to the maximum level but has analyzed the potential for each zone. Computer simulation modeling of the proposed harvest levels will not have a measurable impact on regional or statewide populations.

It is expected that not more than 255 elk (Rocky Mountain, Roosevelt, and tule elk combined) will be taken by hunters under the PLM Program during 2016. This constitutes just over two percent of the statewide elk population and is well within the population's ability to maintain or increase in size over the long term. Any population reduction from the PLM Program would be short term and would not constitute a significant impact to the gene pool.

The ability of elk populations to experience a given level of hunting mortality without decreasing in health or viability is described by Savidge and Ziesenis (1980) as

sustained-yield management. Sustained-yield management is closely related to the compensatory responses in reproduction that were discussed previously.

Because the proposed project involves herds at separate locations within the State that are at or above herd management objectives and because the proposed project will not significantly reduce statewide population levels, the Department concludes that there will not be an adverse impact to the gene pool, either locally or statewide.

IMPACTS ON SOCIAL STRUCTURE

Elk are gregarious and tend to form groups or aggregates. Elk do not mate for life. Males do not invest time or energy in the care of young, but generally form separate bachelor groups. Except for a short breeding period, most adult males generally remain separate from cow-calf groups during the remainder of the year. Therefore, removal of bulls by hunting will have a minimal effect on the social structure of the populations, provided that minimum herd objective bull ratios are maintained. Proposed harvest levels for each herd have been established to maintain or exceed minimum herd objective bull ratios and to provide for genetic variability, fertilization of cows, and public viewing opportunities of bull elk.

During the nonbreeding period, cow-calf groups generally contain few, if any, adult bulls. However, immature bulls are tolerated in cow-calf groups (Geist 1982). Newborn calves are initially completely dependent upon their dams but quickly adjust to the cow-calf group and form nursery groups within the larger group. Nursery groups briefly fixate and respond to a succession of adult females (Geist 1982). During the first 2.5 months of life, calves nurse extensively (Bubenik 1982). Nursing declines by August for most elk in California, when the proposed project would begin in some areas. There is no indication that calves orphaned at this time have been severely impacted; at Grizzly Island, tule elk calves orphaned in August remained within the social structure of the groups.

Generally, the proposed project has the potential to increase the ratio and number of calves in the hunted elk populations. The increase in calf survival results in a shift of age structure of the elk population from older to prime-age individuals (five to seven years). These prime-age individuals tend to provide higher recruitment rates (calf survival) for the population (Hines et al. 1985). Historical data (Fowler 1985, Botti and Koch 1988, Racine et al. 1988), computer simulation modeling (Smith and Updike 1987), and information from the literature (Taber et al. 1982) indicate that the removal of elk from the population (due to hunting, trapping for reintroduction, or high winter mortality) in one year results in a larger number of calves recruited into the population the following year.

Computer simulation modeling of the populations proposed to be hunted indicates that the removal of elk from these populations by hunting (in addition to nonhunting mortalities) will result in an increased survival of calves born the following spring for

most areas (Appendix 4). As an example, in August of 1980 the observed calf ratio for the Bishop subherd was 20 calves per 100 cows. In December of 1980, the Department relocated 75 elk from the Bishop subherd. The following August (1981), the observed calf ratio was 43 calves per 100 cows. This type of increased calf survival (recruitment) has been observed numerous times in the Owens Valley (Racine et al. 1988) and at Grizzly Island (Botti and Koch 1988).

Most western states establish a goal for a posthunt ratio of at least 20 bulls per 100 cows (the proportion of bulls to cows in the population). Some states have goals as low as six bulls per 100 cows, while other states have goals of 25 bulls per 100 cows in trophy hunt areas (Mohler and Toweill 1982). The Department's management objective for most hunted populations is to maintain at least 25 bulls per 100 cows. Specific management plans for most tule elk herds contain post-hunt sex ratio objectives of at least 25 bulls per 100 cows (the management plan for Grizzly Island calls for 45-70 bulls per 100 cows to allow for additional opportunities to view bull elk).

Most tag quotas (Tinemaha Mountain is an exception) provide for take of both male and female elk. Achieving and/or maintaining herd objective bull-to-cow ratios is accomplished most readily by harvest of both sexes, because harvesting only male elk can skew the sex ratio towards females; and, conversely, harvesting only female elk can result in a population skewed towards males (Mohler and Toweill 1982).

Based on the computer simulation analysis of expected harvest rates, for most of the proposed hunts, the post-hunt bull-to-cow ratios are expected to increase and/or remain above the Department's management objective of 25 bulls per 100 cows. Additionally, computer simulation modeling of the herds proposed for hunting indicates that the proposed take is within sustained-yield management levels. That is, under the proposed harvest levels, the population will be able to maintain itself over the long term at existing or higher population levels.

As discussed earlier, female pregnancy rates and calf survival are inversely related to the density of the elk herd in relationship to the condition of the available habitat. Management that provides for frequent reductions in female and young of the year elk in areas where elk have exceeded their herd size objective encourages age structure dominated by reproductively successful females (Hines et al. 1985).

Based on computer simulation modeling, the proposed project has the potential to increase calf survival rates for the hunted herds, resulting in improved general health of the hunted populations. Also, computer simulation modeling predicts minimal changes in bull-to-cow ratios as a result of the proposed project; such ratios for most hunted herds are predicted to increase or remain near the minimum objective ratio. Bull-to-cow ratios are predicted to remain significantly above corresponding ratios for other western states with hunting programs. Thus, it is unlikely that adverse impacts to the social structure of hunted herds will occur as a result of the proposed project. By increasing

calf-to-cow ratios, the proposed project would improve herd condition and could thus have a positive effect on herd social structure.

EFFECTS ON HABITAT

The removal of up to 625 Roosevelt elk, 108 Rocky Mountain elk, and 621 tule elk through public hunting and up to 255 elk through the PLM Program is not expected to significantly change elk population levels on a long term basis. If no major changes occur in the elk population levels, no major changes in elk-caused effects on habitat (e.g., elk foraging pressure on plants) would be expected. Therefore, the proposed project is not expected to have an impact on habitat in the hunt areas.

The typical technique used to hunt elk within the proposed hunt areas involves spotting animals at a distance and/or quietly approaching them on foot to within a reasonable shooting range. Hunting from a motorized vehicle is illegal. Some hunters may use horses to cover greater distances searching for elk. In any case, the relatively low intensity of hunting effort (because of the low number of elk hunters in the field) within these areas is not expected to produce major effects on habitat.

Both public and private lands occur within the hunt areas. On public lands, the Department provides input to the USFS regarding actions to improve the condition of elk herds and their habitat. Further, the USFS is mandated to incorporate wildlife needs, including elk, into their planning process, as required by the National Forest Management Act. In general, current timber harvest practices on public land benefit elk by creating a diverse mosaic of early successional and mature forest habitat types.

Most of the public lands proposed to be open to elk hunting within the Siskiyou, Marble Mountains, Del Norte, Humboldt, Mendocino, and Northeastern California hunt areas are currently open to the public on a year-round basis. These lands also are used for other outdoor recreational activities, such as fishing, photography, hiking, hunting, bird watching and general nature viewing. Due to the large size of the hunt areas (each area is several hundred square miles in size) and existing human use levels of the hunt areas, it is unlikely that the allocation of up to 733 license tags to the public for these hunts will individually or cumulatively negatively impact the habitat in the hunt areas.

Almost the entire Alameda hunt zone consists of private property or public land not open to hunting. Access to these properties is strictly controlled and generally not available to the public. Due to the large size of the hunt area and existing human use levels, it is unlikely that the allocation of up to 5 license tags for these hunts will individually or cumulatively negatively impact the habitat in the hunt area.

Almost the entire Bear Valley hunt zone consists of private property or public land lacking consistent elk use. Access to these private properties is strictly controlled and generally not available to the public. Due to the large size of the hunt area and existing

human use levels, it is unlikely that the allocation of up to 19 license tags to the public for these hunts will individually or cumulatively negatively impact the habitat in the hunt area.

Approximately half of the Cache Creek tule elk hunt area is public land used for a variety of recreational activities. Removing a maximum of four bulls and three cows from this area will result in only a short-term reduction of elk numbers. Historical data and computer simulation modeling of elk herd performance indicate subsequent spring calf recruitment will compensate for this reduction. Because the population level of the Cache Creek herd will not significantly change, the proposed action will not have an impact on the habitat in the Cache Creek tule elk herd area.

Camp Roberts is operated by the U.S. Army, and except during specific periods is not accessible to the public. Removing a maximum of 30 antlerless and 15 bulls from the Camp Roberts tule elk herds will result in an increase within the population over time. The proposed harvest is expected to be neutral to habitat quality.

A large portion of the East Park hunt zone consists of private property. Very little public land within the hunt zone has consistent elk use. The Bureau of Reclamation (BOR) does own property within the zone with consistent use by elk. A majority of the elk harvest since the hunts inception has taken place on the BOR property. The BOR land is also used for other outdoor recreational activities, such as fishing, camping, photography, hiking, bird watching and general nature viewing. Access to the private properties is strictly controlled and generally not available to the public. Due to the size of the hunt area and existing human use levels, it is unlikely that the allocation of up to 4 bull and 10 antlerless tags to the public for these hunts will individually or cumulatively negatively impact the habitat in the hunt area.

Fort Hunter Liggett is operated by the U.S. Army, and except during specific periods is not accessible to the public. The proposed project includes expanding the current zone boundaries. The majority of the zone expansion includes private property and a predominance of the elk outside of Fort Hunter Liggett base reside on private property. Removing a maximum of 70 antlerless and 40 bulls from the Fort Hunter Liggett Central Coast tule elk herds will result in an increase within the populations over time. The proposed harvest is expected to improve habitat quality.

The entire Grizzly Island Wildlife Area is public land; however, the wildlife area will be closed to other uses during the tule elk season. The proposed expansion of the boundaries includes additional private property. Access to these properties is strictly controlled and generally not available to the public. The Department does not anticipate any individual or cumulative adverse impacts to these lands. The proposed level of hunting at Grizzly Island (102 tags) has the potential to improve the quality of the elk habitat on the Island. The proposed level of harvest should be helpful in reaching herd objective population levels for Grizzly Island, and should prevent losses as a result of elk foraging on poison hemlock due to the lack of other suitable forage items.

Most of the public lands within the Lake Pillsbury hunt area are currently open to the public on a year-round basis. These lands also are used for other outdoor recreational activities, such as fishing, photography, hiking, hunting, bird watching and general nature viewing. Due to the size of the hunt areas and existing human use levels of the hunt areas, it is unlikely that the allocation of up to 6 bull and 7 antlerless elk will individually or cumulatively negatively impact the habitat in the hunt area.

Approximately one-fourth of the La Panza hunt area is public land. For the La Panza tule elk herd, removing a maximum of 70 antlerless and 50 bulls will result in a short-term reduction of population numbers but the ten year trend will result in an increase in the population. Spring calf recruitment will compensate for any short-term population reduction. The proposed harvest is expected to have no impact on habitat quality.

The Mendocino elk hunt zones consists of private property or public land lacking consistent elk use. Access to these private properties is strictly controlled and generally not available to the public. Due to the size of the hunt areas and existing human use levels, it is unlikely that the allocation of up to 43 bull and 48 antlerless elk tags for these hunts will individually or cumulatively negatively impact the habitat in the hunt area.

The Owens Valley tule elk hunt zones are accessible to the public and used for a variety of recreational activities. The removal of up to 34 individuals from the eight elk zones will allow the populations to increase but be managed below the mandated maximum number of 490 elk. The small increase in elk numbers should not have a measurable impact on habitat in the Owens Valley. Data collected by the Los Angeles Department of Water and Power since 1978 indicate that habitat conditions in the Owens Valley are primarily dependent upon the level of annual precipitation (Racine et al. 1988).

Almost the entire San Emigdio hunt zone consists of private property or public land with no consistent elk use. Access to the private properties is strictly controlled and generally not available to the public. Due to the large size of the hunt area and existing human use levels, it is unlikely that the allocation of up to 10 bull tags and 24 antlerless tags for these hunts will individually or cumulatively negatively impact the habitat in the hunt area.

Most of the San Luis Reservoir hunt zone consists of private property. Very little public land within the hunt zone has consistent elk use or is open to hunting. The Department of Fish and Wildlife does own property (760 acre wildlife area) within the zone with consistent use by elk. A portion of the elk harvest since the hunts inception has taken place on the Department property. The Department land is also used for other outdoor recreational activities, such as hunting, photography, hiking, bird watching, and general nature viewing. Access to the private properties is strictly controlled and generally not available to the public. Due to the size of the hunt area and existing human use levels, it is unlikely that the allocation of up to 15 bull and 30 antlerless tags to the public for

these hunts will individually or cumulatively negatively impact the habitat in the hunt area.

Nearly the entire Santa Clara hunt zone consists of private property. There is very little public land within the hunt zone. The Department of Fish and Wildlife does own property (2,900 acre ecological reserve) within the zone with consistent use by elk and is open to limited use by hunters. The Department land is also used for other outdoor recreational activities, such as hunting, photography, hiking, bird watching, and general nature viewing. Access to the private properties is strictly controlled and generally not available to the public. Due to the size of the hunt area and existing human use levels, it is unlikely that the allocation of up to 10 bull and 10 antlerless tags to the public for these hunts will individually or cumulatively negatively impact the habitat in the hunt area.

EFFECTS ON RECREATIONAL OPPORTUNITIES

Hunting Opportunities

The proposed project would authorize public hunting of Roosevelt, Rocky Mountain, and tule elk, providing opportunities to harvest up to 1,354 elk by hunters who will participate in this unique outdoor experience. The demand for elk hunting opportunities is extremely high in California. In 2015, over 35,500 individuals applied for an opportunity to hunt elk in California. In 1988, for the first time, a nonrefundable fee of $5 was charged to apply for an elk hunt. Despite the new fee, almost 10,000 licensed hunters applied for elk license tags in 1988 with the number growing almost every year to date. The proposed project benefits the hunting public by providing hunting opportunities consistent with the State's Wildlife Conservation Policy and sections 332 and 1801, Fish and Game Code.

Season dates for several elk hunts may coincide, at least partially, with local deer seasons. However, it is unlikely that deer hunters will be adversely impacted by the low number of elk hunters that may be in the field during the deer season. Most tule elk hunts do not coincide with deer seasons or only partially overlap. Many of the elk seasons will overlap with upland game (quail, chukar, and rabbit) and bear season. Wild pig season is open all year many of the tule elk hunts will coincide with this season. The large areas open to hunting and the relative short elk season dates indicate that elk hunters will not affect hunters of other species of wildlife in terms of hunter success or quality of experience. The Grizzly Island Wildlife Area is not open to deer hunting. Primary hunting activities occurring at Grizzly Island are waterfowl and upland game hunting. The proposed tule elk hunting periods on the Island avoid other game seasons, so there will be no overlap with people hunting other game species.

Some individuals have expressed concern that the hunting regulations of other states might have adverse effects on elk hunting in California (presumably by causing an influx or exodus of hunters.) For the most part, non-resident public elk hunting opportunities on California are very limited (Only up to one elk tag per year is available for non-residents to draw, non-residents may purchase the three fund-raising elk tags, and are eligible to purchase elk tags through the PLM Program). The Department does not expect that the hunting regulations of other states will have an adverse effect on elk hunting in California.

Nonhunting Opportunities

Nonhunting users of the elk resource (viewing, nature study, and photography) will not be significantly impacted by the take of up to 1,354 elk from statewide populations of approximately 5,000 Roosevelt elk, 1,500 Rocky Mountain elk, and 5,100 tule elk. Nor will the proposed project impair the nonconsumptive users' ability to enjoy the outdoors, the elk resource, or its habitat, because the nonconsumptive user will have the opportunity to view elk herds in an unhunted situation indefinitely. Many elk herds inhabit Federal or State Parks, where hunting does not occur. Three of the State's 22 tule elk herds are maintained in a penned situation where no hunting is contemplated. These herds provide the public an opportunity to enjoy tule elk in their native habitat. Additionally, the proposed action does not provide hunting opportunities at Point Reyes National Seashore, which has a large population of tule elk and is accessible to the public for the enjoyment of elk and other wildlife in the area. Elk hunting seasons are limited in time and harvest reports from 2014 indicate that elk hunters spend on average 4 days hunting elk. This indicates that even for those hunted herds a majority of the time can be spent viewing elk without hunters in the field.

The proposed action will not impact the nonhunting public, because the number of hunters in the field at any one time (established by the quotas for each hunt), in conjunction with the areas open to hunting, will result in very low hunter density. Historically, all areas open for hunting have been open for other types of hunting (waterfowl, upland game birds, rabbit, wild pigs, black bear, etc.) during the same timeframe as the proposed elk hunts. If the nonhunter is concerned about being in the field during the proposed elk hunts, there are significantly larger areas of the same habitat type located adjacent to or near all hunt areas that can be used for nonhunting activities during the short elk hunting period.

EFFECTS ON OTHER WILDLIFE SPECIES

Although there is some overlap of food habits, competition between deer and elk has not been documented to be a problem in California. Nelson and Leege (1982) stated that "It would appear, therefore, that neither the elk nor the mule deer is affected seriously by the other, mainly because of differences in primary forage species and habitat choice." This also appears to be the case in California. Potential for competition

between elk and deer can exist on critical winter ranges shared by the two species. But, there is no scientific evidence to indicate that removal of elk through a hunting program will adversely impact the local or statewide deer resource.

In some portions of the Owens Valley (primarily the Goodale subherd area), migratory deer and elk both utilize the same area. The elk use this range in the summer and are not present during the winter, when the area is used by deer (Racine et al. 1988). As indicated by Nelson and Leege (1982) and in the Owens Valley Tule Elk Habitat Management Plan, deer and elk generally do not use the same primary forage species. In an effort to verify this assumption, the Department has funded research conducted by the University of California to investigate deer and elk interactions in the Goodale tule elk subherd area. This research has been completed, confirming that deer and elk used different primary forage plants in the Goodale area and that completion was minimal (Berbach 1991).

During the last few years, the potential for competition between deer and elk has received greater attention in the western states and provinces of North America. Many states and provinces have reported a decline in deer population numbers, coinciding with an increase in elk numbers. It has not been proven that elk displace deer or are a significant factor in suppressing their numbers throughout a broad geographic region. In considering the potential for competitive interaction between deer and elk, a variety of factors may be important such as predation, climate, digestive physiology, energetics, vegetation succession, livestock, and human-related factors. Lindzey et al. (1997) discussed these and other factors in reviewing the potential for competition between deer and elk throughout the west, and compiled an extensive list of references regarding this subject. They concluded that it is appropriate to question whether the growth of elk populations has contributed to apparent deer decline, but found no consistent trends in geographic areas used sympatrically to suggest a cause-and effect relationship.

Due to their large body size, adult elk experience limited predation. Cases of lion predation on adult elk have been documented (Taber et al. 1982, Booth et al. 1988, Racine et al. 1988). Results of fall surveys have documented several confirmed lion-killed elk since 1988. However, there is no scientific evidence to indicate mountain lion predation is having a significant effect statewide on elk in California as demonstrated by increases in elk numbers.

Coyotes, black bears, wolves, and mountain lions prey on elk and/or elk calves. It is possible that, as a result of removing adult elk from elk herds, there will be increased calf production the following spring. This could provide additional prey items for predators. Historical herd performance data collected on elk herds indicate that calf recruitment will increase after an elk removal, regardless of the existence of predators in the area (Racine et al. 1988). Based on a review of available information discussed in this document, it is reasonable to assume the proposed project will not have

measurable short-term or long-term effects on other local wildlife populations, including deer, mountain lions, black bears, wolves, and coyotes.

A number of endangered, threatened or locally unique animals and plants may occur within the elk hunt areas. The Department is charged with the responsibility to determine if any hunting regulations will impact threatened or endangered species. It complies with this mandate by consulting internally and with the Commission when establishing elk hunting regulations to ensure that the implementation of the proposed project and existing hunting regulations do not affect these species. It is unlikely that adverse impacts to rare, endangered, threatened, or locally unique species associated with the proposed hunt areas will occur as a result of the proposed project. Most rare, endangered, threatened, or locally unique species associated with the hunt areas either are associated with habitats where elk hunting is not likely to occur or use these areas during a time (season) different from when the proposed project will occur. The proposed project will involve a minimal number of hunters using areas that for the most part, are open to the public for a variety of uses, including hunting. The Department has concluded that, based on conditions of the proposed project and existing hunting regulations, differences in size, coloration, distribution, and habitat use between the listed species and elk, the proposed project will not jeopardize these species.

EFFECTS ON ECONOMICS

The proposed project will not result in changes to the environment, either directly or indirectly, which would produce significant negative environmental effects. Therefore, no CEQA review of economic effects is necessary. However, the proposed project has the potential to result in minor economic effects on the communities where elk hunting is proposed, and the discussion below is provided for the Commission and the public's information.

Effects on the local economy may involve increases in economic activity near the hunt areas, because hunters from outside the local area would visit the region and purchase goods and services from local merchants. This additional spending would generate additional retail sales and income, and possibly would contribute to employment in businesses such as motels, restaurants, and retail stores. Considered on a statewide basis, spending effects would be minor because of the small number of tags available. Any potential effects would be distributed between the regions where public hunting is proposed.

Fiscal effects include direct public expenditures and revenue generation associated with the proposed project. The project will be administered by the State. Additional revenues will be directly generated by the $8.13 nonrefundable application fee and the $445.35 elk license tag fee. In 2015, more than 35,000 licensed hunters applied for Roosevelt, Rocky Mountain, and tule elk tags in California. Assuming a similar demand for elk hunting opportunities in the future, revenue generated from the project would be greater than the costs to the State to administer the program. The excess revenue would be used in the Department's Big Game Programs, as required by Section 3953, Fish and Game Code.

EFFECTS ON PUBLIC SAFETY

Since 1989, the Department has received no reports of elk hunting-related casualties in California. This does not diminish the fact that people have died or been wounded while hunting other big game animals). Based on the total number of licensed hunters in California and the annual number of accidents, there is roughly a 0.00425-0.005 percent chance of being killed or wounded while hunting deer. Additionally, Department records show that no nonhunting injuries or deaths have occurred as a result of elk hunting. As with any outdoor activity, there is always a risk of injury or death. However, the probability of being injured while hunting elk is extremely low, especially in comparison to other recreational activities. This good safety record is due, in part, to the requirement that all hunters must successfully pass a hunter safety education course prior to receiving a hunting license. It is unlikely that the proposed project will result in adverse impacts to public safety.

GROWTH-INDUCING IMPACTS

There are no growth-inducing impacts associated with the proposed project. As discussed in "Effects on Economics" in this chapter, there will be minor increases in retail sales, income, and possibly employment in the regions where the proposed hunt areas exist. However, the small number of public tags available is unlikely to create growth-inducing impacts in a State with a total human population of over 30 million.

SHORT-TERM USES AND LONG-TERM PRODUCTIVITY

The proposed project will not affect a variety of short-term uses currently available to the public. Additionally, the proposed project will provide for public hunting opportunity without adversely affecting long-term productivity of statewide or local elk populations, based on predictions of simulation modeling.

SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES

No significant irreversible environmental changes are expected to occur as a result of the proposed project. The proposed harvest levels were selected to avoid adversely impacting hunted populations and to reach or maintain herd management objectives. The proposed project is designed to avoid significant adverse impacts to other wildlife species, their habitat, and listed or locally unique species. As discussed previously, adverse impacts to economics and public uses (including safety) are not expected.

WELFARE OF THE INDIVIDUAL ANIMAL

The 2004 analysis was presented on page 120 (incorporated by reference, April, 2006 Final Environmental Document, SCH#2003112075, available at 1812 9th street, Sacramento, CA 95811). The project has been designed to limit wounding through the specification of minimum performance requirements for archery equipment and firearms. It is expected that some wounding may nevertheless occur. The methods of take are not one hundred percent lethal. Lethality is largely a function of hunter skill and accuracy. The Department has evaluated the welfare of the individual animal and has specified minimum performance requirements for archery equipment and firearms in existing regulations.

CUMULATIVE IMPACTS

The proposed project provides for a specific level of public elk hunting in specified areas during 2016, and it is reasonably foreseeable that, the Commission would consider and approve hunts in these areas in the future. Because of this potential, the Department modeled population performance of hunted herds for a 10-year period. Potential effects of cumulative factors identified in this section were considered with the model runs. It

must be emphasized that the model runs specify the same level of harvest (expressed as a percentage of the population) each year. In those runs demonstrating an increasing population the harvest level was capped to not increase above the initial level. The statutorily mandated regulation process involves review and appropriate regulation changes based on the condition of a population. Data collected by the Department during the year following the approval or denial of the proposed project would be examined, and appropriate, biologically sound recommendations would be presented by the Department to the Commission prior to approval of any future hunt.

Section 207, Fish and Game Code, requires that the Commission review and consider revisions to regulations relating to mammal hunting. This law requires that the Commission receive recommendations regarding mammal hunting regulations from Commission members, its staff, the Department, other public agencies, and the public. The process is analogous to the Commission establishing specific harvest quotas for the deer and pronghorn antelope hunting seasons annually. The system has worked well over time in adjusting the hunting program annually to maintain healthy wildlife populations.

Effects of Private Lands Wildlife Habitat Enhancement and Management (PLM) Area Program

To become licensed in the PLM Program, landowners are required to submit an application package which includes a management plan. This plan must contain, among other things, habitat enhancement goals and objectives to be accomplished over the term of the five-year license. The habitat projects outlined in the plan are directed toward improving habitat for both game and nongame species. The ultimate goal of these habitat improvement practices is to enhance or stabilize (under adverse ecological conditions) populations of various wildlife species present on the area. Once licensed, the PLM is reviewed annually by the Commission to ensure compliance with all regulations and administrative procedures.

The PLM Program has been successful as an effective incentive for landowners to protect and improve wildlife habitat. Habitat improvements implemented under approved management plans on licensed areas include conducting controlled burns to improve forage conditions, reducing livestock grazing to reduce competition with wildlife, protecting wildlife fawning/nesting sites and riparian areas, developing wetland/marsh areas, constructing brush piles, improving water sources, and planting forage and cover crops for wildlife. The projects directly benefit deer, elk, bear, antelope, wild pigs, waterfowl, turkeys, quail, and a wide variety of nongame wildlife, including threatened and endangered species. Habitat improvements accomplished specifically for game species (such as riparian improvement, protection, and enhancement) directly benefit hundreds (approximately 331 species in hardwood-dominated habitats) of nongame wildlife species.

The anticipated PLM harvest for existing ranches was modeled as part of the overall (public and PLM) harvest simulation model run for the corresponding hunt zone (Appendix 4). PLM ranches outside of hunt zones were modeled separately. As discussed previously, no adverse impacts are expected, based on the simulation model runs. To determine effects of harvest under the PLM Program for the Tejon Ranch and Hearst Ranch, the Department modeled the current condition and the proposed for the subject herds. Based on simulation model runs (Appendix 4), previous harvest levels have been below the maximum sustainable yield. Because the expected harvest under the PLM Program is less than the maximum sustainable yield (harvest), the Department has determined that the PLM Program, together with the proposed project, will not have a significant adverse cumulative effect on elk populations in California.

Fifty licensees participated in the PLM Program for elk in 2015 (Appendix 18). The Department does not recommend issuing more than 255 elk tags through the PLM Program for 2016 (tule, Roosevelt, and Rocky Mountain elk combined). Maximum quotas for the PLM Program were determined against the backdrop of the proposed public elk tag quotas. Previous total elk harvests under the PLM program have been below these levels (Approximately 136 elk were harvested in 2014 under the PLM program). Expected harvest under the PLM program should be below the maximum PLM quota. Thus, harvest under the PLM program either alone or combined with the proposal public harvest, will not have a significant adverse cumulative effect on statewide or local populations of elk.

Effects of Drought

Drought cycles are part of the ecological system in California and elk are adapted to dealing with low water years. Still, multi-year droughts can reduce elk populations on a local scale. Drought conditions can impact elk in a variety of including: degraded habitat quality (less vegetation growth) and lower food production (both natural and agricultural). California has a "Mediterranean climate," meaning that over the long-term the State receives the bulk of its precipitation during the cool fall and winter months, while warm spring and summer months are generally dry. In other words, California undergoes a "summer drought" each year. However, extreme variation in precipitation occurs in the State on an annual basis. For example, the northwest coast receives a great deal of precipitation, while southern deserts receive very little precipitation. Additionally, topographic features, such as the Sierra Nevada, influence climate by creating a rain shadow, whereby most of the precipitation falls on the west side of the range, extracting most of the moisture from clouds by the time they reach the east side of the range. The amount of precipitation falling on California is extremely variable on a geographic basis within a year and extremely variable in any one area among years.

Throughout much of the State, stream courses, natural lakes, ponds, springs, and reservoirs were affected by the recent drought. As far as terrestrial wildlife are concerned, prolonged drought in areas where water was already a rare commodity, such as in the desert and south coast ranges, may affect production and survival of

young of a variety of species in future years. Droughts are cyclic over the long-term, and all wildlife species and their habitats in California have evolved under conditions of periodic drought (Bakker 1972, Munz and Keck 1973, Oruduff 1974, Burcham 1975, Barbour and Majors 1977). Since the 1800s, California has been in several drought cycles lasting two to five years (Department of Water Resources data). Because of this natural variation in available water, vegetation communities have evolved and adapted to deal with the associated changes in soil moisture (Barbour and Majors 1977). Many of California's plant communities (e.g., desert, chaparral, grassland, oak-woodland, etc.) are drought tolerant. However, this is not to say that prolonged drought will not affect plant species. Growth and vigor of forage species may be severely reduced during a drought, because the seeds of annual plants would not germinate without adequate moisture, and shrubs and trees would have reduced growth as a water conserving strategy. Consequently, the quantity and quality of forage for herbivores would be reduced.

Few specific studies of drought effects on vegetation communities have been conducted, largely because drought is unpredictable and it is a "normal" occurrence. A study measured acorn production (a primary food of many wildlife species) in five oak species occurring at a site in Monterey County from 1980-89 (Koenig et al. 1991). That study determined that acorn production was highly variable among oak species from year-to-year and that climatic variables generally did not correlate with annual variation in acorn production. That study also indicated that, while on a local geographic scale acorn crop failures may have detrimental effects on local populations, total crop failures on a community-wide basis among all species are rare, even during drought years. Similarly, acorn production data from Tehama County (Barrett, unpublished data) indicate that from 1987-90 production was approximately 60 percent, 20 percent, five percent, and 180 percent, respectively, of the mean annual crop.

Alternatively, in annual vegetation communities, lack of fall germinating rains or minimal spring rains can preclude germination of annual seeds of forbs and grasses which are important sources of forage, primarily during the fall, winter, and spring. The seeds of these species would continue to lie dormant in the soil until germinating conditions were suitable. Drought may also weaken resistance of plants to disease, fungus, and insect damage. This would be considered part of the drought cycle in terms of impact on vegetation.

Hence, during a drought, some plant species have responded in a way that would benefit wildlife (e.g., increased acorn production), while others respond in a way that would be detrimental to wildlife (e.g., lack of grass and forb growth).

Native game mammals in California have evolved to withstand both drought and flood extremes within their ranges. Before human intervention, these ranges likely varied as a response to periods of prolonged drought or wet conditions. Currently, however, remaining habitats are, to a large extent, managed and affected by humans. As it relates to drought and water availability, this has produced greater stability in modern

wildlife populations due, in part, to the advent of water wells, water sites developed for wildlife (e.g., guzzlers), irrigation, and reservoirs that are adapted to these habitats. Currently, water is more available to wildlife, regardless of drought, than it would have been prior to large-scale human development in California. There are no documented cases of wildlife being unable to obtain water due to the recent drought. Unlike humans, wildlife do not have to rely on reservoirs for their water supply.

The reduced quantity of vegetative cover due to prolonged drought in some areas could affect thermal and hiding cover important to wildlife. However, that possibility has not yet been reflected in any population data, indicating a significant effect.

Significant impacts due to drought are possible for some species in some areas of the State if drought conditions persist for more than several years. The impact would be expected in the form of reduced habitat quality and quantity, resulting in lowered reproductive success and survival of individuals in the population. As a result, periodic drought conditions may produce short-term effects due to less available forage but may have little, if any, long-term effects on the abundance of most species.

If drought has significant effects on wildlife species, it would be reflected in poorer physical condition of individual animals, decreased survival of individuals, declining production and survival of young, and declining population size. While such trends occur annually with some populations in some areas, the large-scale effects of the current drought, if significant, could be felt statewide. Presently, there are no data to indicate that drought has significantly impacted terrestrial wildlife populations, except in localized areas of southern California.

Effects of drought conditions on elk populations have been recorded in the Owens Valley and in the Cache Creek area (Fowler 1985, Booth et al. 1988, Racine et al. 1988). It should be noted that, while drought may result in increased mortality among individuals in an elk population (primarily lower calf survival), the proposed project was based on data collected on populations that can and do experience periodic drought conditions. The proposed project will not prevent local populations from remaining viable under drought conditions. There are no records of drought affecting the Grizzly Island tule elk herd (Botti and Koch 1988). Based on the above information, and population trends depicted in Figure 1, the possibility of drought impairing the statewide tule elk population is very unlikely.

Evaluation of elk herd performance and habitat conditions and trends is an ongoing facet of the Department's elk management program. Information collected by the Department and other sources will be utilized to modify any future recommendations for hunting proposals or to recommend other management activities, such as habitat improvement or acquisition projects. The impacts, if any, of a catastrophic event on elk populations would be addressed in any future management activities. In addition, the Commission has the regulatory authority (Section 314, Fish and Game Code) to take emergency action to cancel or suspend one or more proposed elk hunts if a

catastrophic event occurred which, in conjunction with a hunting program, could significantly impact the elk population. Thus, the Department does not anticipate that an adverse impact will occur as a result of drought in combination with the proposed project.

Effects of Wildfire

One aspect of prolonged drought that would affect wildlife habitat is an increased risk of wildfire due to extremely dry conditions. However, wildfire can be a problem in extremely wet years because of the buildup of fuel, and it is difficult to conclude that drought years predispose some vegetation communities to wildfire more so than wet years. Certainly in forested communities, prolonged drought that has affected the woody plant community in terms of increased plant mortality and decreased moisture content would make them more susceptible to wildfire.

Catastrophic events, such as wildfires and drought, have been affecting the State's elk resource since their evolution in pristine times. Effects of drought and wildfires can have an impact on local populations of elk. Historical data collected by the Department (McCullough 1969, Fowler 1985, Racine et al. 1988) indicate that there is no evidence that drought, wildfires, or other catastrophic events have resulted in the extirpation of an elk population.

Wildfires are a natural occurrence in elk range. Plant species in the hunt areas have evolved with fire. Many species require fire to reproduce. There is no evidence to indicate that fire has negative long-term effects on elk populations, and there is considerable information that fire can significantly improve elk habitat (Lyon and Ward 1982).

Wildfires have the potential to positively impact a population of elk. The initial fire may displace elk for a very short time period (two to three months). However, elk often return to burned areas immediately following the fire. The long-term impacts can have significant positive effects on the local populations. For example, a wildfire may burn habitat used by elk, causing short-term loss of some forage and cover. However, elk move back into the burned areas quickly to utilize the young nutritious forage growing in the burned areas (Tim Burton, Department of Fish and Game, Yreka). Also, since elk are primarily grazing animals (i.e., they eat mostly grasses), fires which burn brush and trees open areas to allow more grasses to grow, and thus benefit elk (Lyon and Ward 1982).

Based on the above information, the possibility of wildfires impairing the statewide Roosevelt, Rocky Mountain, or tule elk populations from maintaining themselves in a healthy, viable condition is very unlikely. Evaluation of elk herd performance and habitat conditions and trends is an ongoing facet of the Department's elk management program. Information collected by the Department and other sources will be utilized to modify any future recommendations for hunting proposals or to recommend other

management activities, such as habitat improvement or acquisition projects. The impacts, if any, of a catastrophic event on elk populations would be addressed in any future management activities. In addition, the Commission has the regulatory authority (Section 314, Fish and Game Code) to take emergency action to cancel or suspend elk hunting if a catastrophic event occurred which, in conjunction with a hunting program, could significantly impact the elk population.

Effects of Disease

Historical data indicate that elk are remarkably free of disease (Fowler 1985, Booth et al. 1988, Botti and Koch 1988, and Racine et al. 1988). However, Roosevelt elk tested in the Prairie Creek area of Humboldt County showed signs of heavy parasite levels and poor body condition in 1960 and 1982 (Department of Fish and Game files). The Department routinely collects blood samples from the majority of elk captured. Over the last 20 years, the Department has analyzed approximately 900 tule elk and 200 Roosevelt elk blood samples to systematically determine the prevalence of disease and assess the general health of the State's elk resource.

Recent concern has grown about effects of Chronic Wasting Disease (CWD) on deer and elk in North America (Williams et al., 2002). CWD is a fatal, contagious transmissible spongiform encephalopathy infecting the brains of deer and elk. It has been diagnosed within numerous states and provinces of North America. The Department began a surveillance program in 1999 and has tested more than 900 samples from California deer for CWD. All results to date have been negative. California is considered a low risk state for CWD; game ranching of cervids is not allowed (except for fallow deer), and importing live cervids is severely restricted. CWD is not currently known to be naturally transmitted to humans or animals other than deer and elk. On August 30, 2002, the Fish and Game Commission adopted emergency regulations placing conditions on the importation of hunter-harvested deer and elk into California. These restrictions recently were made permanent, and the Department intends to continue its CWD surveillance program until more is known about this disease.

There is no indication of a potential for the State's elk populations (either statewide or locally) to be significantly impacted by a major disease outbreak. There are no data available to indicate that disease, road kills, predation or other natural mortality factors will act as additive impacts which, along with the proposed hunting program, will have a significant adverse cumulative impact on local or statewide elk populations.

Effects of Habitat Loss and Degradation

The proposed project is not likely to cause habitat loss and degradation. The removal of individuals may actually improve elk habitat by decreasing grazing intensity. The elk hunting season is short, and most of the hunting areas are generally open to the public

for other uses year-round. The effects on habitat loss and degradation by hunters during the elk hunting season would be negligible.

On private land, there are potential changes in land ownership which may result in land-use changes. No major changes in private land-use patterns are expected in the near future. The long-term outlook for elk habitat on public lands in California is stable to improving. The cumulative impacts of habitat modification plus hunting are not expected to have a significant adverse impact on elk populations. In combination with the proposed project, potential habitat modification/ degradation is unlikely to have significant adverse cumulative effects.

Effects of Illegal Harvest

Illegal harvest of game mammals is difficult to quantify. It is likely that elk have been taken illegally from each of the proposed hunt areas, as well as from other herds where hunting is not proposed. Department records indicate at least three citations per year involving illegal take/possession of elk were issued in 1997 and 1998. At least three citations involving elk were issued each year in 2000 and 2001. Illegal harvest of other subspecies of elk has occurred in California and other western states (Potter 1982).

Illegal take of tule elk has occurred in the Owens Valley, at Grizzly Island and Fort Hunter Liggett during recent tule elk seasons. One hunter at Grizzly Island was cited for taking two and one cited for taking a spike elk while possessing an antlerless tag. Similar incidents occurred in sporadically in the past. Such incidents of unintentional illegal take have occurred with other game animals in California and other western states. The Department conducts mandatory hunter orientations for some tule elk hunt sin California and emphasizes avoiding incidents of unintentional illegal take and distributes informational material to all elk tag holders. The Department will continue this emphasis in future orientations; additionally, the Department will continue to issue citations to individuals for illegally taking elk, regardless of whether or not such take is intentional. However, despite such measures, some level of unintentional illegal take is expected to continue.

Effects of Depredation

Private property conflicts involving elk and agricultural crops, fences, and other personal property have occurred, and will continue to occur wherever elk and humans coexist. Section 4181, Fish and Game Code, provides for the killing of elk when private "property is being damaged or is in danger of being damaged or destroyed." However, current Department policy is to attempt all reasonable and practical means of nonlethal control prior to issuing a depredation permit for elk.

Issuing depredation (kill) permits is considered as the final measure to alleviate localized private property conflicts involving elk; and the Department issued no elk

depredation permits from 1989 until 2002. However, as elk population numbers have increased and distribution has expanded, conflicts on private property have increased in severity. Since 2002, the Department has issued approximately fifteen elk depredation permits.

In response to the increasing private property conflicts involving elk, the State Legislature passed Assembly Bill 1420 (AB1420, Laird; Chaptered September 4, 2003). Among other things, AB 1420 directs the Department to prepare a statewide elk management plan that identifies management activities necessary to alleviate private property damage caused by elk. Prior to issuing an elk depredation permit, AB1420 requires the Department to verify damage caused by elk, provide a written summary of corrective measure to alleviate the problem, determine the viability of the subject elk herd and the minimum population numbers needed to sustain it, and finally to ensure that the permit will not reduce the herd below the minimum population level needed.

AB1420 provided some constraints on issuance of elk depredation permits and requires identification of additional management activities to alleviate private property conflicts involving elk. The Department will investigate the potential for expanding hunting opportunities as a measure to alleviate private property conflicts involving elk. Because of the constraints in AB1420, the Department does not anticipate an adverse cumulative impact to elk populations resulting from combined effects of the proposed project and issuance of depredation permits.

Effects of Vehicle-Caused Mortality

The number of elk killed by vehicles is not well documented. Unlike deer, very few elk in California appear to be killed by automobiles each year. Vehicle-caused elk mortalities have been reported (specifically with Roosevelt elk in Del Norte and Humboldt counties and tule elk in the Owens Valley and at Cache Creek) since 1990. Unreported incidents cannot be quantified. However, the Department believes effects of vehicle-caused mortality on statewide and localized elk populations are minimal.

Conclusion

The Department has examined a variety of factors that might affect Roosevelt, Rocky Mountain, and tule elk populations statewide and locally. The Department does not anticipate that adverse cumulative impacts to statewide or local elk populations will occur as a result of the proposed project in combination with any factor discussed. However, if some unforeseen cataclysmic event should occur that threatens the welfare of either statewide elk populations or individual hunted populations, the Commission has the authority to take appropriate action, which may include emergency closure of seasons and/or reduction of future hunting opportunities.

Although hunting elk will result in the death of individual elk, specific safeguards included in the proposed action, such as limited tag quotas, short seasons, bag limits,

and close monitoring of hunter activity in the field, will result in removing elk at a level that is below the individual herds' sustained-yield capabilities. Individual elk herds proposed for hunting will be maintained at or above approved management plan objectives, and the estimated statewide tule elk population will remain well above 2,000 animals. Statewide population levels for Roosevelt and Rocky Mountain elk will remain stable. Therefore, significant adverse effects, individually or cumulatively, to elk populations are not expected to result from the proposed project. Additionally, no impacts from two or more separate factors have been identified where, when viewed alone would be minor, but whose combined effect would be significant. Because individual and cumulative negative impacts are not expected to occur, specific mitigation measures are unnecessary.

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CHAPTER 3 - ALTERNATIVES

NO PROJECT

Other than annual tag quota modifications proposed in response to herd productivity, implementation of the No Project alternative would result in no change from the 2015 elk hunting regulations described in the “Existing Condition” Appendix 17.

ALTERNATIVE 2 – INCREASED HARVEST

Alternative 2 represents management options within each hunt zone that will achieve an increased harvest (IH) from the herd(s). IH refers to a harvest strategy that maximizes the number of animals that can be harvested from a population, commensurate with the goals and objectives stated for that herd, for at least the next year. A potential problem with an IH management strategy is the risk of overharvesting. If, under an IH program, an overharvest occurred, more conservative management strategies would have to be implemented the following year to correct the situation.

ALTERNATIVE 3 – REDUCED HARVEST

Alternative 3 represents management options within a particular hunt zone that will produce a relatively small harvest. This reduced harvest (RH) is a harvest strategy that provides hunting opportunities at reduced levels from those proposed under either IH or the proposed project strategies.

ALTERNATIVE 4 – HERD GROWTH

Alternative 4 represents management options available if the number of elk increases substantially within the corresponding hunt units. The Herd Growth (HG) scenario would increase the harvest level to correspond with the increase in elk numbers. HG would provide more hunting opportunity correlated directly with elk population levels. Population growth for elk zones were estimated based on the potential for those herds to increase in time. Growth estimates ranged from 18% to 400%. The time frame to reach the herd growth level for the analyzed population under this alternative will vary by herd. This is an alternative harvest that could be utilized within the life span of this environmental document. Current and proposed harvest strategies, for most herds, allow for population growth through time.

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Appendix 1 – 2014 Elk Tags Issued and Harvested on PLM Ranches

PLM Name	Bull Tags	Bulls Harvested	Antlerless Tags	Antlerless Harvest
ALEXANDER RANCH	1	1	2	2
AVENALES RANCH	2	2	2	2
BARDIN RANCH	2	2	4	4
BLACK RANCH	1	0	1	1
CAMP 5 OUTFITTERS (MORISOLI)	3	3	3	3
CARNAZA WILDLIFE MGT AREA	3	3	3	1
CARRIZO RANCH	2	2	2	2
CHIMNEY ROCK RANCH	2	2		
CLARK AND WHITE RANCH	3	3	2	0
CONNOLLY/CORRAL HOLLOW RANCH	1	0	1	0
COTTRELL RANCH	1	0	1	1
DEFRANCESCO AND EATON	2	2	1	1
EDEN VALLEY RANCH	8	2	7	2
FULTON RANCH	1	1		
GABILAN RANCH	1	1		
HARTNELL RANCH	1	0	2	2
HEARST RANCH	6	2	6	0
HUNTER RANCH	1	1		
INDIAN VALLEY CATTLE CO.	3	3	2	2
ISABEL VALLEY RANCH	1	1		
JS RANCH	1	1		
LEWIS RANCH	1	1	1	1
LONE RANCH	3	2	2	0
MILLER-ERIKSEN RANCH	1	0		
PBM FARMS	1	0		
PEACHTREE RANCH	4	4	2	2
POTTER VALLEY WMA	2	2	10	10
RANCHO LA CUESTA	4	4	1	0
REDWOOD HOUSE RANCH	1	1		
ROOSTER COMB RANCH	2	0		
ROSEBERG RESOURCES PONDOSA	2	2	2	2
R-R RANCH	3		6	
SHAMROCK RANCH	7	6	5	5
SLICK ROCK RANCH	1	1		
SMITH RIVER	3	3		
SPRING VALLEY RANCH	4	3		
STOVER RANCH	4	2	2	1
SUMMER CAMP RANCH	1	0		
SWEETWATER RANCH	1	1		
TEJON RANCH	12	9	3	1
TEMBLOR WMA	7	7	12	7
TRINCHERO RANCH	2	0		
WIGGINS RANCH	2	2	2	2
WORK RANCH	2	0		
TOTALS	**116**	**82**	**87**	**54**

Appendix 2 - 2016 Proposed Elk Tag General Hunt Tag Quota Ranges

2016 Proposed Elk Tag Allocation [shown in ranges]				
Elk	**Bull**	**Antlerless**	**Either-Sex**	**Spike**
General Roosevelt Elk Hunts				
Siskiyou Period 1	0-40	0-40		
Siskiyou Period 2	0-10	0-40		
Siskiyou Period 3	0-5	0-20		
Del Norte Period 1	0-15	0-25	0-10	
Del Norte Period 2	0-15	0-25	0-10	
Del Norte Period 3	0-15	0-25	0-10	
Del Norte Period 4	0-15	0-25	0-10	
Del Norte Period 5	0-15	0-25	0-10	
Humboldt Period 1	0-20	0-50	0-10	
Humboldt Period 2	0-20	0-50	0-10	
Humboldt Period 3	0-20	0-50	0-10	
Humboldt Period 4	0-20	0-50	0-10	
Humboldt Period 5	0-20	0-50	0-10	
Marble Mountain North Period 1	0-50	0-20		
Marble Mountain North Period 2	0-10	0-40		
Marble Mountain North Period 3	0-5	0-15		
Marble Mountain South Period 1	0-50	0-20		
Marble Mountain South period 2	0-10	0-40		
Marble Mountain South Period 3	0-5	0-15		
General Rocky Mountain Elk Hunts				
Northeastern California	0-30	0-20		
General Roosevelt/Tule Elk Hunts				
Mendocino North Coast	0-10	0-40		
Mendocino Middle Fork	0-10	0-40		
Mendocino Upper Russian River	0-10	0-40		
Mendocino Little Lake	0-5	0-10		
Mendocino South Coast	0-5	0-10		
General Tule Elk Hunts				
Cache Creek	0-10	0-10		
La Panza Period 1	0-20	0-30		
La Panza Period 2	0-20	0-30		
Bishop Period 3	0-10	0-30		
Bishop Period 4	0-10	0-30		
Bishop Period 5	0-10	0-30		
Independence Period 2	0-10	0-30		
Independence Period 3	0-10	0-30		
Independence Period 4	0-10	0-30		
Independence Period 5	0-10	0-30		
Lone Pine Period 2	0-10	0-30		
Lone Pine Period 3	0-10	0-30		
Lone Pine Period 4	0-10	0-30		
Lone Pine Period 5	0-10	0-30		
Tinemaha Period 2	0-10	0-30		
Tinemaha Period 3	0-10	0-30		
Tinemaha Period 4	0-10	0-30		
Tinemaha Period 5	0-10	0-30		
West Tinemaha Period 1	0-10	0-30		
West Tinemaha Period 2	0-10	0-30		
West Tinemaha Period 3	0-10	0-30		
West Tinemaha Period 4	0-10	0-30		
West Tinemaha Period 5	0-10	0-30		

2016 Proposed Elk Tag Allocation [shown in ranges]				
Elk	**Bull**	**Antlerless**	**Either-Sex**	**Spike**
Tinemaha Mountain Period 1	0-8			
Tinemaha Mountain Period 2	0-8			
Tinemaha Mountain Period 3	0-8			
Tinemaha Mountain Period 4	0-8			
Tinemaha Mountain Period 5	0-8			
Whitney Period 2	0-4	0-10		
Whitney Period 3	0-4	0-10		
Whitney Period 4	0-4	0-10		
Whitney Period 5	0-4	0-10		
Goodale Period 1	0-10	0-10		
Goodale Period 2	0-10	0-10		
Goodale Period 3	0-10	0-10		
Goodale Period 4	0-10	0-10		
Goodale Period 5	0-10	0-10		
Grizzly Island Period 1	0-3	0-12		0-10
Grizzly Island Period 2	0-3	0-12		0-10
Grizzly Island Period 3	0-3	0-12		0-10
Grizzly Island Period 4	0-3	0-12		0-10
Grizzly Island Period 5	0-3	0-12		0-10
Grizzly Island Period 6	0-3	0-12		0-10
Grizzly Island Period 7	0-3	0-12		0-10
Grizzly Island Period 8	0-3	0-12		0-10
Grizzly Island Period 9	0-3	0-12		0-10
Grizzly Island Period 10	0-3	0-12		0-10
Grizzly Island Period 11	0-3	0-12		0-10
Grizzly Island Period 12	0-3	0-12		0-10
Grizzly Island Period 13	0-3	0-12		0-10
Fort Hunter Liggett Central Coast Period 1	0-14	0-16		
Fort Hunter Liggett Central Coast Period 2	0-14	0-16		
Fort Hunter Liggett Central Coast Period 3	0-14	0-14		
East Park Reservoir	0-6	0-20		
San Luis Reservoir Period 1	0-10	0-20	0-10	
San Luis Reservoir Period 2	0-10	0-20	0-10	
San Luis Reservoir Period 3	0-10	0-20	0-10	
Bear Valley	0-10	0-10		
Lake Pillsbury Period 1	0-10	0-10		
Lake Pillsbury Period 2	0-10	0-10		
Lake Pillsbury Period 3	0-10	0-10		
Santa Clara	0-15	0-20		
Alameda	0-4	0-10		
San Emigdio Mountain	0-15	0-40		
Camp Roberts Period 1	0-10	0-20		
Camp Roberts Period 2	0-10	0-20		
Camp Roberts Period 3	0-10	0-20		
Apprentice Hunts				
Siskiyou			0-2	
Marble Mountains North			0-4	
Marble Mountains South			0-4	
Northeastern CA			0-4	
Cache Creek	0-2	0-2		
La Panza Period 1	0-2	0-2		
Bishop Period 2	0-10	0-30		
Grizzly Island Period 1		0-4		0-4
Grizzly Island Period 2		0-4		0-4
Grizzly Island Period 3		0-4		0-4
Grizzly Island Period 4		0-4		0-4

2016 Proposed Elk Tag Allocation [shown in ranges]				
Elk	**Bull**	**Antlerless**	**Either-Sex**	**Spike**
Fort Hunter Liggett Central Coast	0-2	0-8		
Archery Only Hunts				
Northeastern California Archery Only	0-10	0-10	0-20	
Owens Valley Multiple Zone Archery Only	0-10	0-10		
Lone Pine Archery Only Period 1	0-10	0-30		
Tinemaha Archery Only Period 1	0-10	0-30		
Whitney Archery Only Period 1	0-10	0-30		
Goodale Period 1	0-10	0-10		
Fort Hunter Liggett Central Coast Archery Only		0-10	0-10	
Muzzleloader Only Hunts				
Bishop Muzzleloader Only Period 1	0-10	0-30		
Independence Muzzleloader Only Period 1	0-10	0-10		
Goodale Period 1	0-10	0-10		
Fort Hunter Liggett Central Coast Muzzleloader Only	0-6	0-10		
Muzzleloader/Archery Only Hunts				
Siskiyou			0-20	
Marble Mountain North			0-20	
Marble Mountain South			0-20	
Fund Raising Tags				
Multi-zone	1			
Grizzly Island	1			
Owens Valley	1			
Military Only Elk Tags				
Fort Hunter Liggett Military Early Season	0-2	0-2		
Fort Hunter Liggett Military Period 1		0-16		
Fort Hunter Liggett Military Period 2		0-14		
Fort Hunter Liggett Military Period 3	0-14			
Camp Roberts Military Only Period 1	0-10	0-20		
Camp Roberts Military Only Period 2	0-10	0-20		
Camp Roberts Military Only Period 3	0-10	0-20		
Fort Hunter Liggett Military Apprentice	0-2	0-8		
Fort Hunter Liggett Military Archery Only		0-10	0-6	
Fort Hunter Liggett Military Muzzleloader Only	0-6			
Elk SHARE Hunts				
SHARE Roosevelt Elk Hunts				
Siskiyou	0-55	0-100		
Del Norte	0-25	0-100	0-50	
Humboldt	0-25	0-100	0-50	
Marble Mountain North	0-20	0-25		
Marble Mountain South	0-20	0-25		
SHARE Rocky Mountain Elk Hunts				
Northeastern California	0-20	0-20		
SHARE Roosevelt/Tule Elk Hunts				
Mendocino North Coast	0-10	0-40		
Mendocino Middle Fork	0-10	0-40		
Mendocino Upper Russian River	0-10	0-40		
Mendocino Little Lake	0-1	0-5		
Mendocino South Coast	0-5	0-10		
SHARE Tule Elk Hunts				
Cache Creek	0-10	0-10		
La Panza	0-40	0-60		
Bishop	0-10	0-30		
Independence	0-10	0-30		
Lone Pine	0-40	0-30		
Tinemaha	0-10	0-30		

2016 Proposed Elk Tag Allocation [shown in ranges]				
Elk	**Bull**	**Antlerless**	**Either-Sex**	**Spike**
West Tinemaha	0-10	0-30		
Tinemaha Mountain	0-8			
Whitney	0-4	0-10		
Goodale	0-10	0-10		
Grizzly Island	0-2	0-50		0-50
Fort Hunter Liggett Central Coast	0-42	0-44		
East Park Reservoir	0-6	0-20		
San Luis Reservoir	0-30	0-30		
Bear Valley	0-10	0-10		
Lake Pillsbury	0-10	0-10		
Santa Clara	0-4	0-20		
Alameda	0-4	0-10		
San Emigdio	0-15	0-20		
Camp Roberts	0-10	0-20		

Appendix 3. Scoping Summary – Notice of Preparation Documents

Appendix 4 Simulated Computer Runs – Elk Harvest (Elk Pop)

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SISKIYOU ROOSEVELT ELK HERD - SIMULATION RUNS, GENERAL AND PLM 2016
              Ratio = 20/100/27 - Maximum Calf Survival = 60%
                 THIS PROGRAM CALCULATES CHANGES IN
                 HERD
                 CHARACTERISTICS BASED ON VARIOUS
                 HARVEST
                 RATES.

CURRENT CONDITION = NO CHANGE 20 BULL AND 20 ANTLERLESS (4 PLM )
TO HARVEST APPROXIMATELY 22 BULLS AND 14 COWS (INCLUDES COOPERATIVE ELK TAGS)
APPROXIMATE SUCCESS RATES; 70% BULL 40% COW
                                    HERD SIZE     600  ELK
       % BULLS LOST TO NON HUNTING CAUSES            16  %
        % COWS LOST TO NON HUNTING CAUSES            12  %
                 % OF BULLS KILLED BY HUNTERS        22  %
                  % OF COWS KILLED BY HUNTERS       3.5  %
```

		BULLS	COWS	SURV. CALVES	TOTAL	K	BULLS HARVEST	COWS HARVEST
START	AUG	82	408	110	600	600	20	12
YEAR 1	"	98	397	238	733	2000	22	14
YEAR 2	"	164	442	230	836	2000	22	14
YEAR 3	"	216	478	257	951	2000	22	14
YEAR 4	"	271	521	278	1071	2000	22	14
YEAR 5	"	327	569	304	1200	2000	22	14
YEAR 6	"	384	622	333	1339	2000	22	14
YEAR 7	"	444	682	365	1491	2000	22	14
YEAR 8	"	508	748	401	1658	2000	22	14
YEAR 9	"	577	823	441	1841	2000	22	14
YEAR 10	"	652	906	442	2000	2000	22	14

		BULL RATIO	CALF RATIO
START		20	27
POST HUNT YR	1	20	62
POST HUNT YR	2	33	54
POST HUNT YR	3	42	55
POST HUNT YR	4	49	55
POST HUNT YR	5	55	55
POST HUNT YR	6	60	55
POST HUNT YR	7	63	55
POST HUNT YR	8	66	55
POST HUNT YR	9	69	54
POST HUNT YR	10	71	50

SISKIYOU ROOSEVELT ELK HERD - SIMULATION RUNS, GENERAL, SHARE, & PLM 2016
Ratio = 20/100/27 - Maximum Calf Survival = 60%
THIS PROGRAM CALCULATES CHANGES IN HERD
CHARACTERISTICS BASED ON VARIOUS HARVEST
RATES.

PROPOSED HARVEST: BULL, ANTLERLESS, & EITHER-SEX
TO HARVEST UP TO 40 BULLS AND 50 COWS (INCLUDES COOPERATIVE & PLM ELK TAGS)
Various combination of tags to achieved harvest, includes cooperative tags
Assuming success rate of 70% bull and 40% antlerless

HERD SIZE	600	ELK
% BULLS LOST TO NON HUNTING CAUSES	16	%
% COWS LOST TO NON HUNTING CAUSES	10	%
% OF BULLS KILLED BY HUNTERS	40.5	%
% OF COWS KILLED BY HUNTERS	12.2	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	82	408	110	600	600	|	20	12
YEAR 1	"	98	406	238	742	2000	|	40	50
YEAR 2	"	149	428	214	791	2000	|	40	50
YEAR 3	"	182	437	227	845	2000	|	40	50
YEAR 4	"	214	451	232	897	2000	|	40	50
YEAR 5	"	244	466	241	951	2000	|	40	50
YEAR 6	"	273	483	250	1005	2000	|	40	50
YEAR 7	"	301	502	260	1063	2000	|	40	50
YEAR 8	"	328	524	272	1124	2000	|	40	50
YEAR 9	"	357	550	285	1191	2000	|	40	50
YEAR 10	"	386	578	300	1264	2000	|	40	50

		BULL RATIO	CALF RATIO
START		20	27
POST HUNT YR	1	16	67
POST HUNT YR	2	29	57
POST HUNT YR	3	37	59
POST HUNT YR	4	44	58
POST HUNT YR	5	49	58
POST HUNT YR	6	54	58
POST HUNT YR	7	58	57
POST HUNT YR	8	61	57
POST HUNT YR	9	63	57
POST HUNT YR	10	65	57

SISKIYOU ROOSEVELT ELK HERD - SIMULATION RUNS, GENERAL, SHARE, & PLM 2016
Ratio = 20/100/27 - Maximum Calf Survival = 60%
THIS PROGRAM CALCULATES CHANGES IN HERD
CHARACTERISTICS BASED ON VARIOUS HARVEST
RATES.

INCREASED HARVEST:BULL, ANTLERLESS, & EITHER-SEX (INCLUDES COOPERATIVE TAGS)
TO HARVEST UP TO 60 BULLS AND 75 COWS (INCLUDES COOPERATIVE & PLM ELK TAGS)
Various combination of tags to achieved harvest, includes cooperative tags
Assuming success rate of 75% bull and 50% antlerless

HERD SIZE	600	ELK
% BULLS LOST TO NON HUNTING CAUSES	16	%
% COWS LOST TO NON HUNTING CAUSES	10	%
% OF BULLS KILLED BY HUNTERS	60.7	%
% OF COWS KILLED BY HUNTERS	18.4	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	82	408	110	600	600	|	20	12
YEAR 1	"	98	406	238	742	1000	|	60	75
YEAR 2	"	132	405	199	736	1000	|	60	75
YEAR 3	"	145	387	198	730	2000	|	60	71
YEAR 4	"	155	374	190	718	2000	|	60	69
YEAR 5	"	160	360	183	702	2000	|	60	66
YEAR 6	"	161	346	176	683	2000	|	60	64
YEAR 7	"	159	334	170	662	2000	|	60	61
YEAR 8	"	155	321	163	640	2000	|	60	59
YEAR 9	"	149	309	157	616	2000	|	60	57
YEAR 10	"	141	298	152	591	2000	|	60	55

		BULL RATIO	CALF RATIO
START		20	27
POST HUNT YR	1	12	72
POST HUNT YR	2	22	60
POST HUNT YR	3	27	63
POST HUNT YR	4	31	62
POST HUNT YR	5	34	62
POST HUNT YR	6	36	62
POST HUNT YR	7	37	62
POST HUNT YR	8	36	62
POST HUNT YR	9	35	62
POST HUNT YR	10	33	62

SISKIYOU ROOSEVELT ELK HERD - SIMULATION RUNS, GENERAL, SHARE, & PLM 2016
Ratio = 20/100/27 - Maximum Calf Survival = 60%
THIS PROGRAM CALCULATES CHANGES IN HERD
CHARACTERISTICS BASED ON VARIOUS HARVEST
RATES.

HERD GROWTH: BULL, ANTLERLESS, & EITHER-SEX
TO HARVEST UP TO 55 BULLS AND 67 COWS (INCLUDES COOPERATIVE & PLM ELK TAGS)
Various combination of tags to achieved harvest, includes cooperative tags
Assuming success rate of 70% bull and 40% antlerless

HERD SIZE	800	ELK
% BULLS LOST TO NON HUNTING CAUSES	16	%
% COWS LOST TO NON HUNTING CAUSES	10	%
% OF BULLS KILLED BY HUNTERS	40.5	%
% OF COWS KILLED BY HUNTERS	12.2	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	109	544	147	800	800	|	20	12
YEAR 1	"	136	545	319	1001	2000	|	55	67
YEAR 2	"	202	574	287	1064	2000	|	55	67
YEAR 3	"	244	586	305	1135	2000	|	55	67
YEAR 4	"	287	605	312	1204	2000	|	55	67
YEAR 5	"	325	625	323	1274	2000	|	55	67
YEAR 6	"	363	648	335	1346	2000	|	55	67
YEAR 7	"	399	674	349	1422	2000	|	55	67
YEAR 8	"	435	704	365	1504	2000	|	55	67
YEAR 9	"	472	738	382	1593	2000	|	55	67
YEAR 10	"	511	776	403	1690	2000	|	55	67

		BULL RATIO	CALF RATIO
START		20	27
POST HUNT YR	1	17	67
POST HUNT YR	2	29	57
POST HUNT YR	3	36	59
POST HUNT YR	4	43	58
POST HUNT YR	5	48	58
POST HUNT YR	6	53	58
POST HUNT YR	7	57	57
POST HUNT YR	8	60	57
POST HUNT YR	9	62	57
POST HUNT YR	10	64	57

SISKIYOU ROOSEVELT ELK HERD - SIMULATION RUNS, GENERAL, SHARE, & PLM 2016
Ratio = 20/100/27 - Maximum Calf Survival = 60%
THIS PROGRAM CALCULATES CHANGES IN HERD
CHARACTERISTICS BASED ON VARIOUS HARVEST
RATES.

REDUCED HARVEST: BULL, ANTLERLESS, & EITHER-SEX
TO HARVEST UP TO 20 BULLS AND 25 COWS (INCLUDES COOPERATIVE & PLM ELK TAGS)
Various combination of tags to achieved harvest, includes cooperative tags
Assuming success rate of 70% bull and 40% antlerless

HERD SIZE	600	ELK
% BULLS LOST TO NON HUNTING CAUSES	16	%
% COWS LOST TO NON HUNTING CAUSES	10	%
% OF BULLS KILLED BY HUNTERS	20.2	%
% OF COWS KILLED BY HUNTERS	6.1	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	82	408	110	600	600	|	20	12
YEAR 1	"	98	406	238	742	2000	|	20	25
YEAR 2	"	166	450	229	845	2000	|	20	25
YEAR 3	"	219	486	255	960	2000	|	20	25
YEAR 4	"	274	530	277	1081	2000	|	20	25
YEAR 5	"	330	579	303	1212	2000	|	20	25
YEAR 6	"	388	635	333	1355	2000	|	20	25
YEAR 7	"	449	699	366	1514	2000	|	20	25
YEAR 8	"	514	772	405	1690	2000	|	20	25
YEAR 9	"	585	854	448	1887	2000	|	20	25
YEAR 10	"	663	948	389	2000	2000	|	20	25

		BULL RATIO	CALF RATIO
START		20	27
POST HUNT YR	1	21	62
POST HUNT YR	2	34	54
POST HUNT YR	3	43	55
POST HUNT YR	4	50	55
POST HUNT YR	5	56	55
POST HUNT YR	6	60	54
POST HUNT YR	7	64	54
POST HUNT YR	8	66	54
POST HUNT YR	9	68	54
POST HUNT YR	10	70	42

NORTHWESTERN CALIFORNIA ROOSEVELT ELK HERD - SIMULATION, GENERAL & PLM 2016
(INCLUDES PROPOSED DEL NORTE AND HUMBOLDT ZONES COMBINED)
Ratio = 45/100/40 - Maximum Calf Survival = 65%
THIS PROGRAM CALCULATES CHANGES IN
HERD
CHARACTERISTICS BASED ON VARIOUS
HARVEST
RATES.

CURRENT CONDITION UP TO 45 EITHER-SEX TAGS & 9 COOPERATIVE TAGS, 34 PLM TAGS
HARVEST APPROXIMATELY 62 BULL AND 25 COWS

HERD SIZE	1600	ELK
% BULLS LOST TO NON HUNTING CAUSES	25	%
% COWS LOST TO NON HUNTING CAUSES	16.5	%
% OF BULLS KILLED BY HUNTERS	16.6	%
% OF COWS KILLED BY HUNTERS	2.9	%

	AU	BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	G	389	865	346	1600	1600	|	62	25
YEAR 1	"	375	846	546	1767	4000	|	62	25
YEAR 2	"	439	914	534	1887	4000	|	62	25
YEAR 3	"	483	965	578	2026	4000	|	62	25
YEAR 4	"	532	1027	611	2170	4000	|	62	25
YEAR 5	"	582	1092	651	2325	4000	|	62	25
YEAR 6	"	634	1163	694	2491	4000	|	62	25
YEAR 7	"	689	1241	740	2670	4000	|	62	25
YEAR 8	"	748	1325	791	2863	4000	|	62	25
YEAR 9	"	810	1416	845	3071	4000	|	62	25
YEAR 10	"	878	1514	904	3297	4000	|	62	25

		BULL RATIO	CALF RATIO
START		45	40
POST HUNT YR	1	38	66
POST HUNT YR	2	42	60
POST HUNT YR	3	45	61
POST HUNT YR	4	47	61
POST HUNT YR	5	49	61
POST HUNT YR	6	50	61
POST HUNT YR	7	52	61
POST HUNT YR	8	53	61
POST HUNT YR	9	54	61
POST HUNT YR	10	55	61

DEL NORTE ROOSEVELT ELK HERD - SIMULATION RUNS, GENERAL, SHARE, AND PLM 2016
Ratio = 45/100/40 - Maximum Calf Survival = 67%
THIS PROGRAM CALCULATES CHANGES IN
HERD
CHARACTERISTICS BASED ON VARIOUS HARVEST RATES.

PROPOSED HARVEST: BULL, COW, EITHER SEX TAGS;
TO HARVEST UP TO 50 BULLS AND 70 COWS (INCLUDES PLM & COOPERATIVE TAGS)
Various combination of tags to achieved desired harvest, includes cooperative tags
Assuming success rate of 80% bull and 75% antlerless

HERD SIZE	750	ELK
% BULLS LOST TO NON HUNTING CAUSES	25	%
% COWS LOST TO NON HUNTING CAUSES	12	%
% OF BULLS KILLED BY HUNTERS	29.5	%
% OF COWS KILLED BY HUNTERS	16.8	%

		BULLS	COWS	SURV. CALVES	TOTAL	K	BULLS HARVEST	COWS HARVEST
START	AUG	182	405	162	750	750	37	14
YEAR 1	"	170	416	262	848	2000	50	70
YEAR 2	"	188	420	232	840	2000	50	70
YEAR 3	"	190	410	234	835	2000	50	69
YEAR 4	"	193	403	229	825	2000	50	68
YEAR 5	"	193	396	225	814	2000	50	67
YEAR 6	"	191	389	221	801	2000	50	65
YEAR 7	"	189	382	217	787	2000	50	64
YEAR 8	"	185	375	213	773	2000	50	63
YEAR 9	"	181	368	209	758	2000	50	62
YEAR 10	"	177	361	205	743	2000	50	61

		BULL RATIO	CALF RATIO
START		45	40
POST HUNT YR	1	35	76
POST HUNT YR	2	39	66
POST HUNT YR	3	41	69
POST HUNT YR	4	43	68
POST HUNT YR	5	43	68
POST HUNT YR	6	44	68
POST HUNT YR	7	44	68
POST HUNT YR	8	43	68
POST HUNT YR	9	43	68
POST HUNT YR	10	42	68

DEL NORTE ROOSEVELT ELK HERD - SIMULATION RUNS, GENERAL, SHARE, AND PLM 2016
Ratio = 45/100/40 - Maximum Calf Survival = 67%
THIS PROGRAM CALCULATES CHANGES IN
HERD
CHARACTERISTICS BASED ON VARIOUS HARVEST RATES.

INCREASED HARVEST: BULL, COW, EITHER SEX TAGS;INCLUDES PLM & COOPERATIVE TAGS
TO HARVEST UP TO 75 BULL AND 112 COW:
Various combination of tags to achieved harvest, includes cooperative tags
Assuming success rate of 80% bull and 75% antlerless

HERD SIZE	750	ELK
% BULLS LOST TO NON HUNTING CAUSES	25	%
% COWS LOST TO NON HUNTING CAUSES	12	%
% OF BULLS KILLED BY HUNTERS	43	%
% OF COWS KILLED BY HUNTERS	26.6	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	182	405	162	750	750	|	32	6
YEAR 1	"	174	423	268	864	1000	|	75	112
YEAR 2	"	175	391	208	773	1000	|	75	104
YEAR 3	"	153	344	192	689	1000	|	66	91
YEAR 4	"	137	307	169	613	1000	|	59	82
YEAR 5	"	122	273	151	546	1000	|	53	73
YEAR 6	"	109	242	134	485	1000	|	47	64
YEAR 7	"	97	216	119	432	1000	|	42	57
YEAR 8	"	86	192	106	384	1000	|	37	51
YEAR 9	"	77	170	94	341	1000	|	33	45
YEAR 10	"	68	152	84	303	1000	|	29	40

		BULL RATIO	CALF RATIO
START		45	40
POST HUNT YR	1	32	86
POST HUNT YR	2	35	72
POST HUNT YR	3	34	76
POST HUNT YR	4	35	75
POST HUNT YR	5	35	75
POST HUNT YR	6	35	75
POST HUNT YR	7	35	75
POST HUNT YR	8	35	75
POST HUNT YR	9	35	75
POST HUNT YR	10	35	75

DEL NORTE ROOSEVELT ELK HERD - SIMULATION RUNS, GENERAL, SHARE, AND PLM 2016
Ratio = 45/100/40 - Maximum Calf Survival = 67%
THIS PROGRAM CALCULATES CHANGES IN
HERD
CHARACTERISTICS BASED ON VARIOUS HARVEST RATES.

HERD GROWTH: BULL, COW, EITHER SEX TAGS;INCLUDES PLM & COOPERATIVE TAGS
TO HARVEST UP TO 65 BULL AND 89 COW:
Various combination of tags to achieved harvest, includes cooperative tags
Assuming success rate of 80% bull and 75% antlerless

HERD SIZE	1000	ELK
% BULLS LOST TO NON HUNTING CAUSES	25	%
% COWS LOST TO NON HUNTING CAUSES	12	%
% OF BULLS KILLED BY HUNTERS	27	%
% OF COWS KILLED BY HUNTERS	15.8	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	243	541	216	1000	1000	|	32	6
YEAR 1	"	240	566	358	1163	2000	|	65	89
YEAR 2	"	265	577	319	1161	2000	|	65	89
YEAR 3	"	270	569	326	1166	2000	|	65	89
YEAR 4	"	277	566	321	1164	2000	|	65	89
YEAR 5	"	279	561	319	1159	2000	|	65	89
YEAR 6	"	281	556	316	1153	2000	|	65	88
YEAR 7	"	281	551	314	1146	2000	|	65	87
YEAR 8	"	280	546	311	1137	2000	|	65	86
YEAR 9	"	278	542	308	1128	2000	|	65	86
YEAR 10	"	275	537	306	1118	2000	|	65	85

		BULL RATIO	CALF RATIO
START		45	40
POST HUNT YR	1	37	75
POST HUNT YR	2	41	65
POST HUNT YR	3	43	68
POST HUNT YR	4	44	67
POST HUNT YR	5	45	68
POST HUNT YR	6	46	68
POST HUNT YR	7	47	68
POST HUNT YR	8	47	68
POST HUNT YR	9	47	68
POST HUNT YR	10	47	68

DEL NORTE ROOSEVELT ELK HERD - SIMULATION RUNS, GENERAL AND PLM 2016
Ratio = 45/100/40 - Maximum Calf Survival = 67%
THIS PROGRAM CALCULATES CHANGES IN
HERD
CHARACTERISTICS BASED ON VARIOUS HARVEST RATES.

REDUCED HARVEST: BULL, COW, EITHER SEX TAGS;
TO HARVEST UP TO 25 BULLS AND 35 COWS (INCLUDES PLM & COOPERATIVE TAGS)
Various combination of tags to achieved desired harvest, includes cooperative tags
Assuming success rate of 80% bull and 75% antlerless

HERD SIZE	750	ELK
% BULLS LOST TO NON HUNTING CAUSES	25	%
% COWS LOST TO NON HUNTING CAUSES	12	%
% OF BULLS KILLED BY HUNTERS	15	%
% OF COWS KILLED BY HUNTERS	8.5	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	182	405	162	750	750	|	37	14
YEAR 1	"	170	416	262	848	2000	|	25	35
YEAR 2	"	207	450	255	912	2000	|	25	35
YEAR 3	"	231	477	278	987	2000	|	25	35
YEAR 4	"	259	511	296	1066	2000	|	25	35
YEAR 5	"	286	549	319	1154	2000	|	25	35
YEAR 6	"	315	592	344	1251	2000	|	25	35
YEAR 7	"	346	641	373	1361	2000	|	25	35
YEAR 8	"	380	698	406	1484	2000	|	25	35
YEAR 9	"	418	761	444	1624	2000	|	25	35
YEAR 10	"	461	834	487	1782	2000	|	25	35

		BULL RATIO	CALF RATIO
START		45	40
POST HUNT YR	1	38	69
POST HUNT YR	2	44	61
POST HUNT YR	3	47	63
POST HUNT YR	4	49	62
POST HUNT YR	5	51	62
POST HUNT YR	6	52	62
POST HUNT YR	7	53	62
POST HUNT YR	8	54	61
POST HUNT YR	9	54	61
POST HUNT YR	10	55	61

HUMBOLDT ROOSEVELT ELK HERD - SIMULATION RUNS, GENERAL, SHARE, & PLM 2016
Ratio = 50/100/40 - Maximum Calf Survival = 67%
THIS PROGRAM CALCULATES CHANGES IN
HERD
CHARACTERISTICS BASED ON VARIOUS HARVEST RATES.

PROPOSED PROJECT: BULL, COW, EITHER SEX TAGS; INCLUDING COOPERATIVE & PLM
TO HARVEST UP TO 65 BULLS & 70 COWS
Various combination of tags to achieved harvest, includes cooperative tags
Assuming success rate of 80% bull and 75% antlerless

HERD SIZE	850	ELK
% BULLS LOST TO NON HUNTING CAUSES	25	%
% COWS LOST TO NON HUNTING CAUSES	12	%
% OF BULLS KILLED BY HUNTERS	32.4	%
% OF COWS KILLED BY HUNTERS	15.2	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	224	447	179	850	850	|	47	11
YEAR 1	"	200	463	292	955	2000	|	65	70
YEAR 2	"	211	474	263	948	2000	|	65	70
YEAR 3	"	208	471	270	950	2000	|	65	70
YEAR 4	"	209	471	268	949	2000	|	65	70
YEAR 5	"	209	471	269	949	2000	|	65	70
YEAR 6	"	209	471	268	948	2000	|	65	70
YEAR 7	"	209	471	268	948	2000	|	65	70
YEAR 8	"	209	470	268	947	2000	|	65	70
YEAR 9	"	209	470	268	947	2000	|	65	70
YEAR 10	"	208	470	268	946	2000	|	65	70

		BULL RATIO	CALF RATIO
START		50	40
POST HUNT YR	1	34	75
POST HUNT YR	2	36	65
POST HUNT YR	3	36	68
POST HUNT YR	4	36	67
POST HUNT YR	5	36	67
POST HUNT YR	6	36	67
POST HUNT YR	7	36	67
POST HUNT YR	8	36	67
POST HUNT YR	9	36	67
POST HUNT YR	10	36	67

HUMBOLDT ROOSEVELT ELK HERD - SIMULATION RUNS, GENERAL,SHARE, & PLM 2016
Ratio = 50/100/40 - Maximum Calf Survival = 67%
THIS PROGRAM CALCULATES CHANGES IN
HERD
CHARACTERISTICS BASED ON VARIOUS HARVEST RATES.

INCREASED HARVEST: BULL, COW, & EITHER SEX TAGS; INCLUDES COOPERATIVE TAGS
TO HARVEST UP TO 95 BULLS 105 COWS
Various combination of tags to achieved harvest, includes cooperative tags
Assuming success rate of 80% bull and 75% antlerless

HERD SIZE	850	ELK
% BULLS LOST TO NON HUNTING CAUSES	25	%
% COWS LOST TO NON HUNTING CAUSES	12	%
% OF BULLS KILLED BY HUNTERS	47.5	%
% OF COWS KILLED BY HUNTERS	22.7	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	224	447	179	850	850	|	47	11
YEAR 1	"	200	463	292	955	2000	|	95	105
YEAR 2	"	188	443	240	871	2000	|	89	101
YEAR 3	"	164	407	230	801	2000	|	78	92
YEAR 4	"	151	378	211	739	2000	|	72	86
YEAR 5	"	138	350	196	684	2000	|	66	79
YEAR 6	"	128	324	181	633	2000	|	61	74
YEAR 7	"	118	300	168	586	2000	|	56	68
YEAR 8	"	110	278	155	543	2000	|	52	63
YEAR 9	"	101	258	144	503	2000	|	48	58
YEAR 10	"	94	239	133	466	2000	|	45	54

		BULL RATIO	CALF RATIO
START		50	40
POST HUNT YR	1	29	82
POST HUNT YR	2	29	70
POST HUNT YR	3	27	73
POST HUNT YR	4	27	72
POST HUNT YR	5	27	72
POST HUNT YR	6	27	72
POST HUNT YR	7	27	72
POST HUNT YR	8	27	72
POST HUNT YR	9	27	72
POST HUNT YR	10	27	72

HUMBOLDT ROOSEVELT ELK HERD - SIMULATION RUNS, GENERAL, SHARE & PLM 2016
Ratio = 50/100/40 - Maximum Calf Survival = 67%
THIS PROGRAM CALCULATES CHANGES IN
HERD
CHARACTERISTICS BASED ON VARIOUS HARVEST RATES.

HERD GROWTH: BULL, COW, EITHER SEX TAGS; INCLUDING COOPERATIVE & PLM
TO HARVEST UP TO 75 BULLS & 85 COWS
Various combination of tags to achieved harvest, includes cooperative tags
Assuming success rate of 80% bull and 75% antlerless

HERD SIZE	1000	ELK
% BULLS LOST TO NON HUNTING CAUSES	25	%
% COWS LOST TO NON HUNTING CAUSES	12	%
% OF BULLS KILLED BY HUNTERS	31	%
% OF COWS KILLED BY HUNTERS	15.5	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	263	526	211	1000	1000	|	47	11
YEAR 1	"	241	546	345	1132	2000	|	75	85
YEAR 2	"	254	558	309	1121	2000	|	75	85
YEAR 3	"	251	553	317	1120	2000	|	75	85
YEAR 4	"	251	551	314	1116	2000	|	75	85
YEAR 5	"	250	549	313	1111	2000	|	75	85
YEAR 6	"	248	546	311	1105	2000	|	75	85
YEAR 7	"	247	543	309	1099	2000	|	75	85
YEAR 8	"	245	539	307	1091	2000	|	75	85
YEAR 9	"	243	535	304	1082	2000	|	75	85
YEAR 10	"	240	530	302	1072	2000	|	75	85

		BULL RATIO	CALF RATIO
START		50	40
POST HUNT YR	1	36	75
POST HUNT YR	2	38	65
POST HUNT YR	3	38	68
POST HUNT YR	4	38	67
POST HUNT YR	5	38	67
POST HUNT YR	6	38	67
POST HUNT YR	7	38	67
POST HUNT YR	8	37	68
POST HUNT YR	9	37	68
POST HUNT YR	10	37	68

HUMBOLDT ROOSEVELT ELK HERD - SIMULATION RUNS, GENERAL,SHARE, & PLM 2016
Ratio = 50/100/40 - Maximum Calf Survival = 67%
THIS PROGRAM CALCULATES CHANGES IN
HERD
CHARACTERISTICS BASED ON VARIOUS HARVEST RATES.

REDUCED HARVEST: BULL, COW, EITHER SEX TAGS; INCLUDING COOPERATIVE & PLM
TO HARVEST UP TO 32 BULLS & 35 COWS
Various combination of tags to achieved harvest, includes cooperative tags
Assuming success rate of 80% bull and 75% antlerless

HERD SIZE	850	ELK
% BULLS LOST TO NON HUNTING CAUSES	25	%
% COWS LOST TO NON HUNTING CAUSES	12	%
% OF BULLS KILLED BY HUNTERS	16	%
% OF COWS KILLED BY HUNTERS	7.5	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	224	447	179	850	850	|	47	11
YEAR 1	"	200	463	292	955	2000	|	32	35
YEAR 2	"	235	505	287	1027	2000	|	32	35
YEAR 3	"	260	540	315	1116	2000	|	32	35
YEAR 4	"	289	584	339	1212	2000	|	32	35
YEAR 5	"	320	632	368	1320	2000	|	32	35
YEAR 6	"	354	688	400	1442	2000	|	32	35
YEAR 7	"	392	751	437	1580	2000	|	32	35
YEAR 8	"	434	823	480	1736	2000	|	32	35
YEAR 9	"	481	904	528	1913	2000	|	32	35
YEAR 10	"	535	998	468	2000	2000	|	32	35

		BULL RATIO	CALF RATIO
START		50	40
POST HUNT YR	1	39	68
POST HUNT YR	2	43	61
POST HUNT YR	3	45	62
POST HUNT YR	4	47	62
POST HUNT YR	5	48	62
POST HUNT YR	6	49	61
POST HUNT YR	7	50	61
POST HUNT YR	8	51	61
POST HUNT YR	9	52	61
POST HUNT YR	10	52	49

MARBLE MOUNTAINS ROOSEVELT ELK HERD - SIMULATION RUNS, 2016
Ratio = 60/100/41 - Maximum Calf Survival = 62%
(INCLUDES BOTH PROPOSED MARBLE MOUNTAIN NORTH AND SOUTH ZONES)
THIS PROGRAM CALCULATES CHANGES IN
HERD
CHARACTERISTICS BASED ON VARIOUS
HARVEST
RATES.

CURRENT CONDITION = BULL, ANTLERLESS & EITHER-SEX (COOPERATIVE TAGS)
CURRENT HARVEST FOR MARBLE MTN IS APPROXIMATELY 29 BULL 7 ANTLERLESS
Various combination of tags to achieved desired harvest, includes Cooperative tags
Assuming success rate of 60% bull and 70% antlerless

HERD SIZE	3000	ELK
% BULLS LOST TO NON HUNTING CAUSES	20	%
% COWS LOST TO NON HUNTING CAUSES	17	%
% OF BULLS KILLED BY HUNTERS	3.1	%
% OF COWS KILLED BY HUNTERS	0.5	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	896	1493	612	3000	3000	|	29	7
YEAR 1	"	938	1487	921	3346	6000	|	29	7
YEAR 2	"	1096	1610	917	3623	6000	|	29	7
YEAR 3	"	1220	1711	994	3925	6000	|	29	7
YEAR 4	"	1350	1826	1056	4233	6000	|	29	7
YEAR 5	"	1479	1948	1128	4555	6000	|	29	7
YEAR 6	"	1611	2079	1203	4893	6000	|	29	7
YEAR 7	"	1747	2218	1284	5250	6000	|	29	7
YEAR 8	"	1888	2368	1371	5627	6000	|	29	7
YEAR 9	"	2036	2528	1436	6000	6000	|	29	7
YEAR 10	"	2180	2688	1132	6000	6000	|	29	7

		BULL RATIO	CALF RATIO
START		60	41
POST HUNT YR	1	61	62
POST HUNT YR	2	67	57
POST HUNT YR	3	70	58
POST HUNT YR	4	73	58
POST HUNT YR	5	75	58
POST HUNT YR	6	76	58
POST HUNT YR	7	78	58
POST HUNT YR	8	79	58
POST HUNT YR	9	80	57
POST HUNT YR	10	80	42

MARBLE MOUNTAINS NORTH ROOSEVELT ELK HERD - SIMULATION RUNS, 2016
Ratio = 60/100/41 - Maximum Calf Survival = 62%
THIS PROGRAM CALCULATES CHANGES IN
HERD
CHARACTERISTICS BASED ON VARIOUS
HARVEST
RATES.

PROPOSED HARVEST = BULL, ANTLERLESS, EITHER-SEX (INCLUDES COOPERATIVE TAGS)
HARVEST up to 61 BULLS AND 60 COWS (INCLUDES COOPERATIVE ELK TAGS)
Various combination of tags to achieved harvest, includes cooperative tags
Assuming success rate of 60% bull and 70% antlerless

HERD SIZE	1500	ELK
% BULLS LOST TO NON HUNTING CAUSES	20	%
% COWS LOST TO NON HUNTING CAUSES	17	%
% OF BULLS KILLED BY HUNTERS	13	%
% OF COWS KILLED BY HUNTERS	8.1	%

		BULLS	COWS	SURV. CALVES	TOTAL	K	|	BULLS HARVEST	COWS HARVEST
START	AUG	448	746	306	1500	1500	|	15	6
YEAR 1	"	469	741	459	1669	3000	|	61	60
YEAR 2	"	510	756	422	1688	3000	|	61	60
YEAR 3	"	528	753	431	1712	3000	|	61	60
YEAR 4	"	546	754	430	1730	3000	|	61	60
YEAR 5	"	560	754	430	1745	3000	|	61	60
YEAR 6	"	572	755	430	1757	3000	|	61	60
YEAR 7	"	581	755	431	1767	3000	|	61	60
YEAR 8	"	588	756	431	1775	3000	|	61	60
YEAR 9	"	594	756	431	1782	3000	|	61	60
YEAR 10	"	599	757	432	1788	3000	|	61	60

		BULL RATIO	CALF RATIO
START		60	41
POST HUNT YR	1	60	67
POST HUNT YR	2	64	61
POST HUNT YR	3	67	62
POST HUNT YR	4	70	62
POST HUNT YR	5	72	62
POST HUNT YR	6	73	62
POST HUNT YR	7	75	62
POST HUNT YR	8	76	62
POST HUNT YR	9	77	62
POST HUNT YR	10	77	62

MARBLE MOUNTAIN NORTH ROOSEVELT ELK HERD - SIMULATION RUNS, 2016
Ratio = 60/100/41 - Maximum Calf Survival = 62%
THIS PROGRAM CALCULATES CHANGES IN
HERD
CHARACTERISTICS BASED ON VARIOUS
HARVEST
RATES.

INCREASED HARVEST; BULL, ANTLERLESS, EITHER-SEX (INCLUDES COOPERATIVE TAGS)
TO HARVEST UP TO 90 BULLS AND 90 COWS (INCLUDES COOPERATIVE ELK TAGS)
Various combination of tags to achieved desired harvest, includes cooperative tags
Assuming success rate of 60% bull and 70% antlerless

HERD SIZE	1500	ELK
% BULLS LOST TO NON HUNTING CAUSES	20	%
% COWS LOST TO NON HUNTING CAUSES	17	%
% OF BULLS KILLED BY HUNTERS	19.1	%
% OF COWS KILLED BY HUNTERS	12.1	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	448	746	306	1500	1500	|	15	4
YEAR 1	"	469	743	460	1672	3000	|	90	90
YEAR 2	"	487	733	405	1625	3000	|	93	89
YEAR 3	"	477	703	400	1580	3000	|	91	85
YEAR 4	"	469	679	383	1530	3000	|	90	82
YEAR 5	"	457	654	370	1481	3000	|	87	79
YEAR 6	"	443	631	356	1431	3000	|	85	76
YEAR 7	"	430	608	344	1381	3000	|	82	74
YEAR 8	"	416	586	331	1333	3000	|	79	71
YEAR 9	"	401	565	319	1286	3000	|	77	68
YEAR 10	"	388	545	308	1241	3000	|	74	66

		BULL RATIO	CALF RATIO
START		60	41
POST HUNT YR	1	58	70
POST HUNT YR	2	61	63
POST HUNT YR	3	63	65
POST HUNT YR	4	64	64
POST HUNT YR	5	64	64
POST HUNT YR	6	65	64
POST HUNT YR	7	65	64
POST HUNT YR	8	65	64
POST HUNT YR	9	65	64
POST HUNT YR	10	65	64

MARBLE MOUNTAINS NORTH ROOSEVELT ELK HERD - SIMULATION RUNS, 2016
Ratio = 60/100/41 - Maximum Calf Survival = 62%
THIS PROGRAM CALCULATES CHANGES IN
HERD
CHARACTERISTICS BASED ON VARIOUS
HARVEST
RATES.

HERD GROWTH = BULL, ANTLERLESS, EITHER-SEX (INCLUDES COOPERATIVE TAGS)
HARVEST up to 69 BULLS AND 80 COWS (INCLUDES COOPERATIVE ELK TAGS)
Various combination of tags to achieved harvest, includes cooperative tags
Assuming success rate of 60% bull and 70% antlerless

HERD SIZE	2000	ELK
% BULLS LOST TO NON HUNTING CAUSES	20	%
% COWS LOST TO NON HUNTING CAUSES	17	%
% OF BULLS KILLED BY HUNTERS	11	%
% OF COWS KILLED BY HUNTERS	8.1	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	597	995	408	2000	2000	|	15	6
YEAR 1	"	629	990	613	2232	3000	|	69	80
YEAR 2	"	693	1010	564	2267	3000	|	69	80
YEAR 3	"	725	1006	576	2307	3000	|	69	80
YEAR 4	"	755	1007	574	2336	3000	|	69	80
YEAR 5	"	778	1008	575	2361	3000	|	69	80
YEAR 6	"	797	1008	575	2380	3000	|	69	80
YEAR 7	"	812	1009	575	2397	3000	|	69	80
YEAR 8	"	825	1010	576	2410	3000	|	69	80
YEAR 9	"	835	1010	576	2421	3000	|	69	80
YEAR 10	"	843	1011	577	2431	3000	|	69	80

		BULL RATIO	CALF RATIO
START		60	41
POST HUNT YR	1	61	67
POST HUNT YR	2	67	61
POST HUNT YR	3	71	62
POST HUNT YR	4	74	62
POST HUNT YR	5	76	62
POST HUNT YR	6	78	62
POST HUNT YR	7	80	62
POST HUNT YR	8	81	62
POST HUNT YR	9	82	62
POST HUNT YR	10	83	62

MARBLE MOUNTAINS NORTH ROOSEVELT ELK HERD - SIMULATION RUNS, 2016
Ratio = 60/100/41 - Maximum Calf Survival = 62%
THIS PROGRAM CALCULATES CHANGES IN
HERD
CHARACTERISTICS BASED ON VARIOUS
HARVEST
RATES.

REDUCED HARVEST = BULL, ANTLERLESS, EITHER-SEX (INCLUDES COOPERATIVE TAGS)
HARVEST up to 30 BULLS AND 30 COWS (INCLUDES COOPERATIVE ELK TAGS)
Various combination of tags to achieved harvest, includes cooperative tags
Assuming success rate of 60% bull and 70% antlerless

HERD SIZE	1500	ELK
% BULLS LOST TO NON HUNTING CAUSES	20	%
% COWS LOST TO NON HUNTING CAUSES	17	%
% OF BULLS KILLED BY HUNTERS	6.5	%
% OF COWS KILLED BY HUNTERS	4	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	448	746	306	1500	1500	|	15	6
YEAR 1	"	469	741	459	1669	3000	|	30	30
YEAR 2	"	534	781	441	1757	3000	|	30	30
YEAR 3	"	579	807	466	1852	3000	|	30	30
YEAR 4	"	626	839	482	1946	3000	|	30	30
YEAR 5	"	669	871	501	2042	3000	|	30	30
YEAR 6	"	711	907	522	2140	3000	|	30	30
YEAR 7	"	753	945	544	2242	3000	|	30	30
YEAR 8	"	796	985	567	2348	3000	|	30	30
YEAR 9	"	839	1028	592	2460	3000	|	30	30
YEAR 10	"	884	1075	619	2578	3000	|	30	30

		BULL RATIO	CALF RATIO
START		60	41
POST HUNT YR	1	62	64
POST HUNT YR	2	67	59
POST HUNT YR	3	71	60
POST HUNT YR	4	74	60
POST HUNT YR	5	76	60
POST HUNT YR	6	78	59
POST HUNT YR	7	79	59
POST HUNT YR	8	80	59
POST HUNT YR	9	81	59
POST HUNT YR	10	82	59

MARBLE MOUNTAINS SOUTH ROOSEVELT ELK HERD - SIMULATION RUNS, 2016
Ratio = 60/100/41 - Maximum Calf Survival = 62%
THIS PROGRAM CALCULATES CHANGES IN
HERD
CHARACTERISTICS BASED ON VARIOUS
HARVEST
RATES.

PROPOSED HARVEST= BULL, ANTLERLESS, EITHER-SEX (INCLUDES COOPERATIVE TAGS)
TO HARVEST UP TO 61 BULLS AND 60 COWS (INCLUDES COOPERATIVE ELK TAGS)
Various combination of tags to achieved harvest, includes cooperative tags
Assuming success rate of 60% bull and 70% antlerless

HERD SIZE	1500	ELK
% BULLS LOST TO NON HUNTING CAUSES	20	%
% COWS LOST TO NON HUNTING CAUSES	17	%
% OF BULLS KILLED BY HUNTERS	13	%
% OF COWS KILLED BY HUNTERS	8.1	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	448	746	306	1500	1500	|	15	4
YEAR 1	"	469	743	460	1672	3000	|	61	60
YEAR 2	"	510	758	423	1691	3000	|	61	60
YEAR 3	"	529	755	433	1716	3000	|	61	60
YEAR 4	"	547	756	431	1734	3000	|	61	60
YEAR 5	"	561	756	431	1749	3000	|	61	60
YEAR 6	"	573	757	432	1761	3000	|	61	60
YEAR 7	"	582	757	432	1771	3000	|	61	60
YEAR 8	"	590	758	432	1780	3000	|	61	60
YEAR 9	"	596	758	432	1787	3000	|	61	60
YEAR 10	"	601	759	433	1793	3000	|	61	60

		BULL RATIO	CALF RATIO
START		60	41
POST HUNT YR	1	60	67
POST HUNT YR	2	64	61
POST HUNT YR	3	67	62
POST HUNT YR	4	70	62
POST HUNT YR	5	72	62
POST HUNT YR	6	74	62
POST HUNT YR	7	75	62
POST HUNT YR	8	76	62
POST HUNT YR	9	77	62
POST HUNT YR	10	77	62

MARBLE MOUNTAIN SOUTH ROOSEVELT ELK HERD - SIMULATION RUNS, 2016
Ratio = 60/100/41 - Maximum Calf Survival = 62%
THIS PROGRAM CALCULATES CHANGES IN
HERD
CHARACTERISTICS BASED ON VARIOUS
HARVEST
RATES.

INCREASED HARVEST; BULL, ANTLERLESS, EITHER-SEX (INCLUDES COOPERATIVE TAGS)
TO HARVEST UP TO 90 BULLS AND 90 COWS (INCLUDES COOPERATIVE ELK TAGS)
Various combination of tags to achieved desired harvest, includes cooperative tags
Assuming success rate of 60% bull and 70% antlerless

HERD SIZE	1500	ELK
% BULLS LOST TO NON HUNTING CAUSES	20	%
% COWS LOST TO NON HUNTING CAUSES	17	%
% OF BULLS KILLED BY HUNTERS	19.1	%
% OF COWS KILLED BY HUNTERS	12.1	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	448	746	306	1500	1500	|	15	4
YEAR 1	"	469	743	460	1672	3000	|	90	90
YEAR 2	"	487	733	405	1625	3000	|	93	89
YEAR 3	"	477	703	400	1580	3000	|	91	85
YEAR 4	"	469	679	383	1530	3000	|	90	82
YEAR 5	"	457	654	370	1481	3000	|	87	79
YEAR 6	"	443	631	356	1431	3000	|	85	76
YEAR 7	"	430	608	344	1381	3000	|	82	74
YEAR 8	"	416	586	331	1333	3000	|	79	71
YEAR 9	"	401	565	319	1286	3000	|	77	68
YEAR 10	"	388	545	308	1241	3000	|	74	66

		BULL RATIO	CALF RATIO
START		60	41
POST HUNT YR	1	58	70
POST HUNT YR	2	61	63
POST HUNT YR	3	63	65
POST HUNT YR	4	64	64
POST HUNT YR	5	64	64
POST HUNT YR	6	65	64
POST HUNT YR	7	65	64
POST HUNT YR	8	65	64
POST HUNT YR	9	65	64
POST HUNT YR	10	65	64

MARBLE MOUNTAINS SOUTH ROOSEVELT ELK HERD - SIMULATION RUNS, 2016
Ratio = 60/100/41 - Maximum Calf Survival = 62%
THIS PROGRAM CALCULATES CHANGES IN
HERD
CHARACTERISTICS BASED ON VARIOUS
HARVEST
RATES.

HERD GROWTH = BULL, ANTLERLESS, EITHER-SEX (INCLUDES COOPERATIVE TAGS)
HARVEST up to 82 BULLS AND 80 COWS (INCLUDES COOPERATIVE ELK TAGS)
Various combination of tags to achieved harvest, includes cooperative tags
Assuming success rate of 60% bull and 70% antlerless

HERD SIZE	2000	ELK
% BULLS LOST TO NON HUNTING CAUSES	20	%
% COWS LOST TO NON HUNTING CAUSES	17	%
% OF BULLS KILLED BY HUNTERS	13	%
% OF COWS KILLED BY HUNTERS	8.1	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	597	995	408	2000	2000	|	15	6
YEAR 1	"	629	990	613	2232	3000	|	82	80
YEAR 2	"	683	1010	564	2257	3000	|	82	80
YEAR 3	"	707	1006	576	2289	3000	|	82	80
YEAR 4	"	730	1007	574	2312	3000	|	82	80
YEAR 5	"	748	1008	575	2331	3000	|	82	80
YEAR 6	"	763	1008	575	2347	3000	|	82	80
YEAR 7	"	775	1009	575	2360	3000	|	82	80
YEAR 8	"	785	1010	576	2370	3000	|	82	80
YEAR 9	"	793	1010	576	2380	3000	|	82	80
YEAR 10	"	799	1011	577	2387	3000	|	82	80

		BULL RATIO	CALF RATIO
START		60	41
POST HUNT YR	1	60	67
POST HUNT YR	2	65	61
POST HUNT YR	3	68	62
POST HUNT YR	4	70	62
POST HUNT YR	5	72	62
POST HUNT YR	6	73	62
POST HUNT YR	7	75	62
POST HUNT YR	8	76	62
POST HUNT YR	9	76	62
POST HUNT YR	10	77	62

MARBLE MOUNTAINS SOUTH ROOSEVELT ELK HERD - SIMULATION RUNS, 2016
Ratio = 60/100/41 - Maximum Calf Survival = 62%
THIS PROGRAM CALCULATES CHANGES IN
HERD
CHARACTERISTICS BASED ON VARIOUS
HARVEST
RATES.

REDUCED HARVEST= BULL, ANTLERLESS, EITHER-SEX (INCLUDES COOPERATIVE TAGS)
TO HARVEST UP TO 30 BULLS AND 30 COWS (INCLUDES COOPERATIVE ELK TAGS)
Various combination of tags to achieved harvest, includes cooperative tags
Assuming success rate of 60% bull and 70% antlerless

HERD SIZE	1500	ELK
% BULLS LOST TO NON HUNTING CAUSES	20	%
% COWS LOST TO NON HUNTING CAUSES	17	%
% OF BULLS KILLED BY HUNTERS	6.5	%
% OF COWS KILLED BY HUNTERS	4	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	448	746	306	1500	1500	|	15	4
YEAR 1	"	469	743	460	1672	3000	|	30	30
YEAR 2	"	535	783	442	1760	3000	|	30	30
YEAR 3	"	580	809	467	1856	3000	|	30	30
YEAR 4	"	627	840	483	1950	3000	|	30	30
YEAR 5	"	670	873	503	2046	3000	|	30	30
YEAR 6	"	713	909	523	2145	3000	|	30	30
YEAR 7	"	755	947	545	2247	3000	|	30	30
YEAR 8	"	798	987	569	2354	3000	|	30	30
YEAR 9	"	841	1031	594	2466	3000	|	30	30
YEAR 10	"	886	1077	621	2584	3000	|	30	30

		BULL RATIO	CALF RATIO
START		60	41
POST HUNT YR	1	61	65
POST HUNT YR	2	67	59
POST HUNT YR	3	71	60
POST HUNT YR	4	74	60
POST HUNT YR	5	76	60
POST HUNT YR	6	78	59
POST HUNT YR	7	79	59
POST HUNT YR	8	80	59
POST HUNT YR	9	81	59
POST HUNT YR	10	82	59

NORTHEASTERN CALIFORNIA ELK HERD - SIMULATION GENERAL & PLM 2016
Ratio = 20/100/27 - Maximum Calf Survival = 60%
THIS PROGRAM CALCULATES CHANGES IN
HERD
CHARACTERISTICS BASED ON VARIOUS
HARVEST
RATES.

CURRENT CONDITION = 12 EITHER SEX TAGS, 10 ANTLERLESS, 15 BULL, 8 PLM RANCH
TO HARVEST APPROX: 20 BULLS, 10 COWS (INCLUDES COOPERATIVE & PLM ELK TAGS)
APPROXIMATE SUCCESS RATE 60% BULLS & 60% ANTLERLESS

HERD SIZE	1000	ELK
% BULLS LOST TO NON HUNTING CAUSES	18	%
% COWS LOST TO NON HUNTING CAUSES	12	%
% OF BULLS KILLED BY HUNTERS	12	%
% OF COWS KILLED BY HUNTERS	1.5	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	136	680	184	1000	1000	|	20	10
YEAR 1	"	170	671	402	1243	3000	|	20	10
YEAR 2	"	288	758	396	1443	3000	|	20	10
YEAR 3	"	382	833	449	1664	3000	|	20	10
YEAR 4	"	480	922	494	1896	3000	|	20	10
YEAR 5	"	580	1019	547	2146	3000	|	20	10
YEAR 6	"	683	1129	606	2417	3000	|	20	10
YEAR 7	"	791	1251	671	2713	3000	|	20	10
YEAR 8	"	907	1387	705	3000	3000	|	20	10
YEAR 9	"	1016	1522	461	3000	3000	|	20	10
YEAR 10	"	1006	1534	460	3000	3000	|	20	10

		BULL RATIO	CALF RATIO
START		20	27
POST HUNT YR	1	23	61
POST HUNT YR	2	36	53
POST HUNT YR	3	44	55
POST HUNT YR	4	50	54
POST HUNT YR	5	55	54
POST HUNT YR	6	59	54
POST HUNT YR	7	62	54
POST HUNT YR	8	64	51
POST HUNT YR	9	66	30
POST HUNT YR	10	65	30

NORTHEASTERN CALIFORNIA ELK HERD - SIMULATION GENERA, SHARE, & PLM 2016
Ratio = 20/100/27 - Maximum Calf Survival = 60%
THIS PROGRAM CALCULATES CHANGES IN
HERD
CHARACTERISTICS BASED ON VARIOUS
HARVEST
RATES.

PROPOSED HARVEST = EITHER SEX, ANTLERLESS, BULL, & PLM
TO HARVEST UP TO: 40 BULLS, 40 COWS (INCLUDES COOPERATIVE & PLM ELK TAGS)
APPROXIMATE SUCCESS RATE 60% BULLS & 60% ANTLERLESS
Various combination of tags to achieved harvest, includes cooperative tags

HERD SIZE	1000	ELK
% BULLS LOST TO NON HUNTING CAUSES	18	%
% COWS LOST TO NON HUNTING CAUSES	12	%
% OF BULLS KILLED BY HUNTERS	23.4	%
% OF COWS KILLED BY HUNTERS	5.9	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	136	680	184	1000	1000	|	20	10
YEAR 1	"	170	671	402	1243	3000	|	40	40
YEAR 2	"	272	732	379	1383	3000	|	40	40
YEAR 3	"	346	776	416	1537	3000	|	40	40
YEAR 4	"	421	831	442	1694	3000	|	40	40
YEAR 5	"	494	891	475	1860	3000	|	40	40
YEAR 6	"	567	958	511	2036	3000	|	40	40
YEAR 7	"	642	1033	551	2226	3000	|	40	40
YEAR 8	"	719	1117	596	2433	3000	|	40	40
YEAR 9	"	802	1210	646	2659	3000	|	40	40
YEAR 10	"	890	1315	703	2907	3000	|	40	40

		BULL RATIO	CALF RATIO
START		20	27
POST HUNT YR	1	21	64
POST HUNT YR	2	34	55
POST HUNT YR	3	41	56
POST HUNT YR	4	48	56
POST HUNT YR	5	53	56
POST HUNT YR	6	57	56
POST HUNT YR	7	61	55
POST HUNT YR	8	63	55
POST HUNT YR	9	65	55
POST HUNT YR	10	67	55

NORTHEASTERN CALIFORNIA ELK HERD - SIMULATION GENERAL,SHARE, & PLM 2016
Ratio = 20/100/27 - Maximum Calf Survival = 60%
THIS PROGRAM CALCULATES CHANGES IN
HERD
CHARACTERISTICS BASED ON VARIOUS
HARVEST
RATES.

INCREASED HARVEST = EITHER SEX, ANTLERLESS, BULL TAGS
TO HARVEST UP TO: 60 BULLS, 60 COWS (INCLUDES COOPERATIVE & PLM ELK TAGS)
APPROXIMATE SUCCESS RATE 60% BULLS & 60% ANTLERLESS
Various combination of tags to achieved harvest, includes cooperative tags

HERD SIZE	1000	ELK
% BULLS LOST TO NON HUNTING CAUSES	18	%
% COWS LOST TO NON HUNTING CAUSES	12	%
% OF BULLS KILLED BY HUNTERS	35	%
% OF COWS KILLED BY HUNTERS	8.9	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	136	680	184	1000	1000	|	20	10
YEAR 1	"	170	671	402	1243	3000	|	60	60
YEAR 2	"	256	715	367	1337	3000	|	60	60
YEAR 3	"	311	738	393	1442	3000	|	60	60
YEAR 4	"	367	769	407	1544	3000	|	60	60
YEAR 5	"	419	804	426	1648	3000	|	60	60
YEAR 6	"	469	842	446	1758	3000	|	60	60
YEAR 7	"	519	885	469	1873	3000	|	60	60
YEAR 8	"	569	933	495	1997	3000	|	60	60
YEAR 9	"	621	986	524	2130	3000	|	60	60
YEAR 10	"	675	1046	556	2276	3000	|	60	60

		BULL RATIO	CALF RATIO
START		20	27
POST HUNT YR	1	18	66
POST HUNT YR	2	30	56
POST HUNT YR	3	37	58
POST HUNT YR	4	43	57
POST HUNT YR	5	48	57
POST HUNT YR	6	52	57
POST HUNT YR	7	56	57
POST HUNT YR	8	58	57
POST HUNT YR	9	61	57
POST HUNT YR	10	62	56

NORTHEASTERN CALIFORNIA ELK HERD - SIMULATION GENERAL,SHARE, & PLM 2016
Ratio = 20/100/27 - Maximum Calf Survival = 60%
THIS PROGRAM CALCULATES CHANGES IN
HERD
CHARACTERISTICS BASED ON VARIOUS
HARVEST
RATES.

HERD GROWTH = EITHER SEX, ANTLERLESS, BULL TAGS
TO HARVEST UP TO: 61 BULLS, 70 COWS (INCLUDES COOPERATIVE & PLM ELK TAGS)
APPROXIMATE SUCCESS RATE 60% BULLS & 60% ANTLERLESS
Various combination of tags to achieved harvest, includes cooperative tags

HERD SIZE	1300	ELK
% BULLS LOST TO NON HUNTING CAUSES	18	%
% COWS LOST TO NON HUNTING CAUSES	12	%
% OF BULLS KILLED BY HUNTERS	27	%
% OF COWS KILLED BY HUNTERS	8	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	177	884	239	1300	1300	|	20	10
YEAR 1	"	227	874	525	1626	3000	|	61	70
YEAR 2	"	351	939	483	1772	3000	|	61	70
YEAR 3	"	435	977	521	1934	3000	|	61	70
YEAR 4	"	521	1028	544	2092	3000	|	61	70
YEAR 5	"	600	1082	575	2257	3000	|	61	70
YEAR 6	"	677	1144	607	2428	3000	|	61	70
YEAR 7	"	754	1212	644	2610	3000	|	61	70
YEAR 8	"	832	1288	685	2806	3000	|	61	70
YEAR 9	"	913	1374	713	3000	3000	|	61	70
YEAR 10	"	991	1461	548	3000	3000	|	61	70

		BULL RATIO	CALF RATIO
START		20	27
POST HUNT YR	1	21	65
POST HUNT YR	2	33	56
POST HUNT YR	3	41	57
POST HUNT YR	4	48	57
POST HUNT YR	5	53	57
POST HUNT YR	6	57	57
POST HUNT YR	7	61	56
POST HUNT YR	8	63	56
POST HUNT YR	9	65	55
POST HUNT YR	10	67	39

NORTHEASTERN CALIFORNIA ELK HERD - SIMULATION GENERAL,SHARE, & PLM 2016
Ratio = 20/100/27 - Maximum Calf Survival = 60%
THIS PROGRAM CALCULATES CHANGES IN
HERD
CHARACTERISTICS BASED ON VARIOUS
HARVEST
RATES.

REDUCED HARVEST = EITHER SEX, ANTLERLESS, BULL TAGS
TO HARVEST UP TO: 20 BULLS, 20 COWS (INCLUDES COOPERATIVE & PLM ELK TAGS)
APPROXIMATE SUCCESS RATE 60% BULLS & 60% ANTLERLESS
Various combination of tags to achieved harvest, includes cooperative tags

HERD SIZE	1000	ELK
% BULLS LOST TO NON HUNTING CAUSES	18	%
% COWS LOST TO NON HUNTING CAUSES	12	%
% OF BULLS KILLED BY HUNTERS	12	%
% OF COWS KILLED BY HUNTERS	3	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	136	680	184	1000	1000	|	20	10
YEAR 1	"	170	671	402	1243	3000	|	20	20
YEAR 2	"	288	749	390	1428	3000	|	20	20
YEAR 3	"	379	814	438	1630	3000	|	20	20
YEAR 4	"	474	891	476	1840	3000	|	20	20
YEAR 5	"	567	976	522	2065	3000	|	20	20
YEAR 6	"	662	1071	573	2306	3000	|	20	20
YEAR 7	"	761	1177	630	2568	3000	|	20	20
YEAR 8	"	866	1295	694	2855	3000	|	20	20
YEAR 9	"	978	1427	595	3000	3000	|	20	20
YEAR 10	"	1029	1500	471	3000	3000	|	20	20

		BULL RATIO	CALF RATIO
START		20	27
POST HUNT YR	1	23	62
POST HUNT YR	2	37	54
POST HUNT YR	3	45	55
POST HUNT YR	4	52	55
POST HUNT YR	5	57	55
POST HUNT YR	6	61	55
POST HUNT YR	7	64	54
POST HUNT YR	8	66	54
POST HUNT YR	9	68	42
POST HUNT YR	10	68	32

MENDOCINO TULE ELK MANAGEMENT UNIT (General and PLM) - SIMULATION RUNS, 2016
(INCLUDES PROPOSED MENDOCINO NORTH COAST, MIDDLE FORK, UPPER RUSSIAN RIVER, LITTLE LAKE, AND SOUTH COAST ZONES)

Ratio = 40/100/31, Maximum Calf Survival = 46%
THIS PROGRAM CALCULATES CHANGES IN HERD CHARACTERISTICS
BASED ON VARIOUS HARVEST RATES.

CURRENT CONDITION: BULL & ANTLERLESS TAGS
HARVEST UP TO 36 BULL & 37 ANTLERLESS
APPROXIMATE SUCCESS RATE: 80% BULL, 75% ANTLERLESS

HERD SIZE	930	ELK
% BULLS LOST TO NON HUNTING CAUSES	20	%
% COWS LOST TO NON HUNTING CAUSES	12	%
% OF BULLS KILLED BY HUNTERS	16.8	%
% OF COWS KILLED BY HUNTERS	7.2	%

		BULLS	COWS	SURV. CALVES	TOTAL	K	BULLS HARVEST	COWS HARVEST
START	AUG	218	544	169	930	930	36	37
YEAR 1	"	213	520	233	966	1500	36	37
YEAR 2	"	235	527	222	984	1500	36	37
YEAR 3	"	248	529	225	1002	1500	36	37
YEAR 4	"	260	532	226	1018	1500	36	37
YEAR 5	"	270	534	227	1032	1500	36	37
YEAR 6	"	278	537	229	1044	1500	36	37
YEAR 7	"	285	540	230	1056	1500	36	37
YEAR 8	"	292	544	231	1067	1500	36	37
YEAR 9	"	297	547	233	1078	1500	36	37
YEAR 10	"	302	551	235	1088	1500	36	37

		BULL RATIO	CALF RATIO
START		40	31
POST HUNT YR	1	37	48
POST HUNT YR	2	41	45
POST HUNT YR	3	43	46
POST HUNT YR	4	45	46
POST HUNT YR	5	47	46
POST HUNT YR	6	49	46
POST HUNT YR	7	50	46
POST HUNT YR	8	51	46
POST HUNT YR	9	51	46
POST HUNT YR	10	52	46

MENDOCINO NORTH COAST - SIMULATION RUNS, GENERAL, SHARE, & PLM 2016

Ratio = 40/100/31, Maximum Calf Survival = 46%
THIS PROGRAM CALCULATES CHANGES IN HERD CHARACTERISTICS
BASED ON VARIOUS HARVEST RATES.

PROPOSED HARVEST: BULL & ANTLERLESS TAGS, INCLUDES COOPERATIVE TAGS
HARVEST UP TO 18 BULL & 20 ANTLERLESS
Various combination of tags to achieved harvest, includes cooperative tags
APPROXIMATE HARVEST SUCCESS RATES; 80 BULL, 75 ANTLERLESS

HERD SIZE	420	ELK
% BULLS LOST TO NON HUNTING CAUSES	20	%
% COWS LOST TO NON HUNTING CAUSES	12	%
% OF BULLS KILLED BY HUNTERS	18	%
% OF COWS KILLED BY HUNTERS	8.5	%

		BULLS	COWS	SURV. CALVES	TOTAL	K	BULLS HARVEST	COWS HARVEST
START	AUG	98	246	76	420	420	13	10
YEAR 1	"	99	241	108	448	1000	18	20
YEAR 2	"	108	242	101	451	1000	18	20
YEAR 3	"	113	239	102	454	1000	18	20
YEAR 4	"	117	237	101	455	1000	18	20
YEAR 5	"	119	235	100	455	1000	18	20
YEAR 6	"	121	234	99	454	1000	18	20
YEAR 7	"	122	232	98	452	1000	18	20
YEAR 8	"	123	230	97	450	1000	18	20
YEAR 9	"	123	228	97	448	1000	18	19
YEAR 10	"	123	226	96	445	1000	18	19

		BULL RATIO	CALF RATIO
START		40	31
POST HUNT YR	1	37	49
POST HUNT YR	2	41	46
POST HUNT YR	3	43	46
POST HUNT YR	4	46	46
POST HUNT YR	5	47	46
POST HUNT YR	6	48	46
POST HUNT YR	7	49	46
POST HUNT YR	8	50	46
POST HUNT YR	9	51	46
POST HUNT YR	10	51	46

MENDOCINO NORTH COAST - SIMULATION RUNS, GENERAL, SHARE, & PLM 2016

Ratio = 40/100/31, Maximum Calf Survival = 46%
THIS PROGRAM CALCULATES CHANGES IN HERD CHARACTERISTICS
BASED ON VARIOUS HARVEST RATES.

INCREASED HARVEST: BULL & ANTLERLESS TAGS, INCLUDES PLM, AND COOPERATIVE TAGS
HARVEST UP TO 27 BULL & 30 ANTLERLESS
Various combination of tags to achieved harvest, includes cooperative tags
APPROXIMATE HARVEST SUCCESS RATES; 80 BULL, 75 ANTLERLESS

HERD SIZE	420	ELK
% BULLS LOST TO NON HUNTING CAUSES	20	%
% COWS LOST TO NON HUNTING CAUSES	12	%
% OF BULLS KILLED BY HUNTERS	27	%
% OF COWS KILLED BY HUNTERS	12.5	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	98	246	76	420	420	|	13	10
YEAR 1	"	99	241	108	448	1000	|	27	30
YEAR 2	"	101	233	97	431	1000	|	27	29
YEAR 3	"	98	222	94	414	1000	|	27	28
YEAR 4	"	95	212	89	397	1000	|	27	27
YEAR 5	"	90	203	85	379	1000	|	27	25
YEAR 6	"	85	194	82	361	1000	|	27	24
YEAR 7	"	79	185	78	343	1000	|	21	23
YEAR 8	"	78	177	75	329	1000	|	21	22
YEAR 9	"	75	169	71	315	1000	|	20	21
YEAR 10	"	72	161	68	302	1000	|	20	20

		BULL RATIO	CALF RATIO
START		40	31
POST HUNT YR	1	34	51
POST HUNT YR	2	36	48
POST HUNT YR	3	37	48
POST HUNT YR	4	37	48
POST HUNT YR	5	36	48
POST HUNT YR	6	34	48
POST HUNT YR	7	36	48
POST HUNT YR	8	37	48
POST HUNT YR	9	37	48
POST HUNT YR	10	37	48

MENDOCINO NORTH COAST - SIMULATION RUNS, GENERAL, SHARE, & PLM 2016

Ratio = 40/100/31, Maximum Calf Survival = 46%
THIS PROGRAM CALCULATES CHANGES IN HERD CHARACTERISTICS
BASED ON VARIOUS HARVEST RATES.

HERD GROWTH: BULL & ANTLERLESS TAGS, INCLUDES COOPERATIVE TAGS
HARVEST UP TO 28 BULL & 24 ANTLERLESS
Various combination of tags to achieved harvest, includes cooperative tags
APPROXIMATE HARVEST SUCCESS RATES; 80 BULL, 75 ANTLERLESS

HERD SIZE	550	ELK
% BULLS LOST TO NON HUNTING CAUSES	20	%
% COWS LOST TO NON HUNTING CAUSES	12	%
% OF BULLS KILLED BY HUNTERS	21	%
% OF COWS KILLED BY HUNTERS	7.5	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	129	322	100	550	550	|	13	10
YEAR 1	"	132	318	143	594	1000	|	28	24
YEAR 2	"	141	322	135	598	1000	|	28	24
YEAR 3	"	145	322	137	603	1000	|	28	24
YEAR 4	"	148	322	137	607	1000	|	28	24
YEAR 5	"	151	322	137	611	1000	|	28	24
YEAR 6	"	154	323	137	614	1000	|	28	24
YEAR 7	"	155	323	137	616	1000	|	28	24
YEAR 8	"	157	323	137	618	1000	|	28	24
YEAR 9	"	158	324	138	620	1000	|	28	24
YEAR 10	"	160	324	138	621	1000	|	28	24

		BULL RATIO	CALF RATIO
START		40	31
POST HUNT YR	1	36	49
POST HUNT YR	2	38	45
POST HUNT YR	3	39	46
POST HUNT YR	4	40	46
POST HUNT YR	5	41	46
POST HUNT YR	6	42	46
POST HUNT YR	7	43	46
POST HUNT YR	8	43	46
POST HUNT YR	9	44	46
POST HUNT YR	10	44	46

MENDOCINO NORTH COAST - SIMULATION RUNS, GENERAL, SHARE, & PLM 2016

Ratio = 40/100/31, Maximum Calf Survival = 46%
THIS PROGRAM CALCULATES CHANGES IN HERD CHARACTERISTICS
BASED ON VARIOUS HARVEST RATES.

REDUCED HARVEST: BULL & ANTLERLESS TAGS, INCLUDES COOPERATIVE TAGS
HARVEST UP TO 9 BULL & 10 ANTLERLESS
Various combination of tags to achieved harvest, includes cooperative tags
APPROXIMATE HARVEST SUCCESS RATES; 80 BULL, 75 ANTLERLESS

HERD SIZE	420	ELK
% BULLS LOST TO NON HUNTING CAUSES	20	%
% COWS LOST TO NON HUNTING CAUSES	12	%
% OF BULLS KILLED BY HUNTERS	9	%
% OF COWS KILLED BY HUNTERS	4.2	%

		BULLS	COWS	SURV. CALVES	TOTAL	K	BULLS HARVEST	COWS HARVEST
START	AUG	98	246	76	420	420	13	10
YEAR 1	"	99	241	108	448	1000	9	10
YEAR 2	"	115	251	106	472	1000	9	10
YEAR 3	"	127	258	111	497	1000	9	10
YEAR 4	"	139	267	114	521	1000	9	10
YEAR 5	"	150	277	118	545	1000	9	10
YEAR 6	"	160	286	123	569	1000	9	10
YEAR 7	"	170	297	127	594	1000	9	10
YEAR 8	"	180	308	132	620	1000	9	10
YEAR 9	"	190	321	137	647	1000	9	10
YEAR 10	"	199	334	143	676	1000	9	10

		BULL RATIO	CALF RATIO
START		40	31
POST HUNT YR	1	39	47
POST HUNT YR	2	44	44
POST HUNT YR	3	48	45
POST HUNT YR	4	51	44
POST HUNT YR	5	53	44
POST HUNT YR	6	55	44
POST HUNT YR	7	56	44
POST HUNT YR	8	57	44
POST HUNT YR	9	58	44
POST HUNT YR	10	59	44

MENDOCINO MIDDLE FORK - SIMULATION RUNS, GENERAL, SHARE, & PLM 2016

Ratio = 40/100/31, Maximum Calf Survival = 46%
THIS PROGRAM CALCULATES CHANGES IN HERD CHARACTERISTICS BASED ON VARIOUS HARVEST RATES.

PROPOSED HARVEST: BULL & ANTLERLESS TAGS, INCLUDES COOPERATIVE TAGS
HARVEST UP TO 12 BULL & 11 ANTLERLESS
Various combination of tags to achieved harvest, includes cooperative tags
APPROXIMATE HARVEST SUCCESS RATES; 80 BULL, 75 ANTLERLESS

HERD SIZE	250	ELK
% BULLS LOST TO NON HUNTING CAUSES	20	%
% COWS LOST TO NON HUNTING CAUSES	12	%
% OF BULLS KILLED BY HUNTERS	21	%
% OF COWS KILLED BY HUNTERS	8	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	58	146	45	250	250	|	12	9
YEAR 1	"	55	141	63	259	500	|	12	11
YEAR 2	"	60	142	60	261	500	|	12	11
YEAR 3	"	63	141	60	264	500	|	12	11
YEAR 4	"	65	141	60	265	500	|	12	11
YEAR 5	"	66	140	59	266	500	|	12	11
YEAR 6	"	68	139	59	266	500	|	12	11
YEAR 7	"	69	139	59	266	500	|	12	11
YEAR 8	"	69	138	59	266	500	|	12	11
YEAR 9	"	69	138	58	266	500	|	12	11
YEAR 10	"	70	137	58	265	500	|	12	11

		BULL RATIO	CALF RATIO
START		40	31
POST HUNT YR	1	34	49
POST HUNT YR	2	37	46
POST HUNT YR	3	39	46
POST HUNT YR	4	41	46
POST HUNT YR	5	43	46
POST HUNT YR	6	44	46
POST HUNT YR	7	45	46
POST HUNT YR	8	45	46
POST HUNT YR	9	46	46
POST HUNT YR	10	46	46

MENDOCINO MIDDLE FORK - SIMULATION RUNS, GENERAL, SHARE, AND PLM 2016

Ratio = 40/100/31, Maximum Calf Survival = 46%
THIS PROGRAM CALCULATES CHANGES IN HERD CHARACTERISTICS
BASED ON VARIOUS HARVEST RATES.

INCREASED HARVEST: BULL & ANTLERLESS TAGS, INCLUDES COOPERATIVE TAGS
HARVEST UP TO 18 BULL & 16 ANTLERLESS
Various combination of tags to achieved harvest, includes cooperative tags
APPROXIMATE HARVEST SUCCESS RATES; 80 BULL, 75 ANTLERLESS

HERD SIZE	250	ELK
% BULLS LOST TO NON HUNTING CAUSES	20	%
% COWS LOST TO NON HUNTING CAUSES	10	%
% OF BULLS KILLED BY HUNTERS	33	%
% OF COWS KILLED BY HUNTERS	11	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	58	146	45	250	250	|	12	9
YEAR 1	"	55	144	63	262	500	|	18	16
YEAR 2	"	55	144	59	257	500	|	18	16
YEAR 3	"	53	142	59	253	500	|	17	16
YEAR 4	"	52	140	58	250	500	|	17	15
YEAR 5	"	51	138	57	246	500	|	17	15
YEAR 6	"	50	136	57	243	500	|	17	15
YEAR 7	"	50	135	56	240	500	|	16	15
YEAR 8	"	49	133	55	237	500	|	16	15
YEAR 9	"	48	131	54	234	500	|	16	14
YEAR 10	"	48	130	54	231	500	|	16	14

		BULL RATIO	CALF RATIO
START		40	31
POST HUNT YR	1	29	49
POST HUNT YR	2	29	46
POST HUNT YR	3	28	47
POST HUNT YR	4	28	47
POST HUNT YR	5	28	47
POST HUNT YR	6	28	47
POST HUNT YR	7	28	47
POST HUNT YR	8	28	47
POST HUNT YR	9	28	47
POST HUNT YR	10	28	47

MENDOCINO MIDDLE FORK -SIMULATION RUNS, INCLUDES GENERAL, SHARE, AND PLM 2016

Ratio = 40/100/31, Maximum Calf Survival = 46%
THIS PROGRAM CALCULATES CHANGES IN HERD CHARACTERISTICS
BASED ON VARIOUS HARVEST RATES.

HERD GROWTH: BULL & ANTLERLESS TAGS, INCLUDES COOPERATIVE TAGS
HARVEST UP TO 12 BULL & 16 ANTLERLESS
Various combination of tags to achieved harvest, includes cooperative tags
APPROXIMATE HARVEST SUCCESS RATES; 80 BULL, 75 ANTLERLESS

HERD SIZE	350	ELK
% BULLS LOST TO NON HUNTING CAUSES	20	%
% COWS LOST TO NON HUNTING CAUSES	12	%
% OF BULLS KILLED BY HUNTERS	15	%
% OF COWS KILLED BY HUNTERS	7.8	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	82	205	63	350	350	|	12	9
YEAR 1	"	81	200	90	371	500	|	12	16
YEAR 2	"	91	202	85	378	500	|	12	16
YEAR 3	"	97	201	86	384	500	|	12	16
YEAR 4	"	102	201	85	389	500	|	12	16
YEAR 5	"	106	201	85	393	500	|	12	16
YEAR 6	"	109	201	85	395	500	|	12	16
YEAR 7	"	112	200	85	397	500	|	12	16
YEAR 8	"	114	200	85	399	500	|	12	16
YEAR 9	"	115	200	85	400	500	|	12	16
YEAR 10	"	116	199	85	400	500	|	12	16

		BULL RATIO	CALF RATIO
START		40	31
POST HUNT YR	1	37	49
POST HUNT YR	2	42	46
POST HUNT YR	3	46	46
POST HUNT YR	4	49	46
POST HUNT YR	5	51	46
POST HUNT YR	6	53	46
POST HUNT YR	7	54	46
POST HUNT YR	8	55	46
POST HUNT YR	9	56	46
POST HUNT YR	10	57	46

MENDOCINO MIDDLE FORK - SIMULATION RUNS, GENERAL, SHARE, & PLM 2016

Ratio = 40/100/31, Maximum Calf Survival = 46%
THIS PROGRAM CALCULATES CHANGES IN HERD CHARACTERISTICS
BASED ON VARIOUS HARVEST RATES.

REDUCED HARVEST: BULL & ANTLERLESS TAGS, INCLUDES COOPERATIVE TAGS
HARVEST UP TO 6 BULL & 5 ANTLERLESS
Various combination of tags to achieved harvest, includes cooperative tags
APPROXIMATE HARVEST SUCCESS RATES; 80 BULL, 75 ANTLERLESS

HERD SIZE	250	ELK
% BULLS LOST TO NON HUNTING CAUSES	20	%
% COWS LOST TO NON HUNTING CAUSES	12	%
% OF BULLS KILLED BY HUNTERS	11	%
% OF COWS KILLED BY HUNTERS	3.8	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	58	146	45	250	250	|	12	9
YEAR 1	"	55	141	63	259	500	|	6	5
YEAR 2	"	65	147	62	274	500	|	6	5
YEAR 3	"	72	152	65	289	500	|	6	5
YEAR 4	"	79	158	67	304	500	|	6	5
YEAR 5	"	85	164	70	319	500	|	6	5
YEAR 6	"	91	170	73	334	500	|	6	5
YEAR 7	"	97	177	76	350	500	|	6	5
YEAR 8	"	103	184	79	367	500	|	6	5
YEAR 9	"	109	192	82	384	500	|	6	5
YEAR 10	"	116	201	86	402	500	|	6	5

		BULL RATIO	CALF RATIO
START		40	31
POST HUNT YR	1	36	47
POST HUNT YR	2	41	44
POST HUNT YR	3	45	44
POST HUNT YR	4	48	44
POST HUNT YR	5	50	44
POST HUNT YR	6	52	44
POST HUNT YR	7	53	44
POST HUNT YR	8	54	44
POST HUNT YR	9	55	44
POST HUNT YR	10	56	44

MENDOCINO UPPER RUSSIAN - GENERAL, SHARE, & PLM 2016

Ratio = 40/100/31, Maximum Calf Survival = 46%
THIS PROGRAM CALCULATES CHANGES IN HERD CHARACTERISTICS
BASED ON VARIOUS HARVEST RATES.

PROPOSED HARVEST: BULL & ANTLERLESS TAGS, INCLUDES PLM & COOPERATIVE TAGS
HARVEST UP TO 12 BULL & 16 ANTLERLESS
Various combination of tags to achieved harvest, includes cooperative tags
APPROXIMATE HARVEST SUCCESS RATES; 80 BULL, 75 ANTLERLESS

HERD SIZE	200	ELK
% BULLS LOST TO NON HUNTING CAUSES	20	%
% COWS LOST TO NON HUNTING CAUSES	10	%
% OF BULLS KILLED BY HUNTERS	25.8	%
% OF COWS KILLED BY HUNTERS	15	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	47	117	36	200	200	|	9	16
YEAR 1	"	45	107	46	198	500	|	12	16
YEAR 2	"	45	103	42	190	500	|	12	15
YEAR 3	"	44	98	40	181	500	|	11	15
YEAR 4	"	42	93	38	173	500	|	11	14
YEAR 5	"	40	88	36	165	500	|	10	13
YEAR 6	"	38	84	34	157	500	|	10	13
YEAR 7	"	37	80	33	149	500	|	9	12
YEAR 8	"	35	76	31	141	500	|	9	11
YEAR 9	"	33	72	30	134	500	|	9	11
YEAR 10	"	31	68	28	127	500	|	8	11

		BULL RATIO	CALF RATIO
START		40	31
POST HUNT YR	1	36	51
POST HUNT YR	2	38	48
POST HUNT YR	3	39	49
POST HUNT YR	4	39	48
POST HUNT YR	5	40	48
POST HUNT YR	6	40	48
POST HUNT YR	7	40	48
POST HUNT YR	8	40	48
POST HUNT YR	9	41	49
POST HUNT YR	10	41	49

MENDOCINO UPPER RUSSIAN - GENERAL, SHARE, & PLM SIMULATION RUNS, 2016

Ratio = 40/100/31, Maximum Calf Survival = 60%
THIS PROGRAM CALCULATES CHANGES IN HERD CHARACTERISTICS
BASED ON VARIOUS HARVEST RATES.

INCREASED HARVEST: BULL & ANTLERLESS TAGS, INCLUDES PLM & COOPERATIVE TAGS
HARVEST UP TO 18 BULL & 24 ANTLERLESS
Various combination of tags to achieved harvest, includes cooperative tags
APPROXIMATE HARVEST SUCCESS RATES; 80 BULL, 75 ANTLERLESS

HERD SIZE	200	ELK
% BULLS LOST TO NON HUNTING CAUSES	20	%
% COWS LOST TO NON HUNTING CAUSES	10	%
% OF BULLS KILLED BY HUNTERS	39.5	%
% OF COWS KILLED BY HUNTERS	22.5	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	47	117	36	200	200	|	9	16
YEAR 1	"	45	107	61	212	1000	|	18	24
YEAR 2	"	46	102	50	198	1000	|	18	23
YEAR 3	"	42	94	47	183	1000	|	17	21
YEAR 4	"	39	87	44	170	1000	|	16	19
YEAR 5	"	36	80	40	157	1000	|	14	18
YEAR 6	"	34	74	37	145	1000	|	13	17
YEAR 7	"	31	68	34	134	1000	|	12	15
YEAR 8	"	29	63	32	124	1000	|	11	14
YEAR 9	"	27	58	29	114	1000	|	11	13
YEAR 10	"	25	54	27	106	1000	|	10	12

		BULL RATIO	CALF RATIO
START		40	31
POST HUNT YR	1	33	73
POST HUNT YR	2	35	63
POST HUNT YR	3	35	65
POST HUNT YR	4	35	65
POST HUNT YR	5	36	65
POST HUNT YR	6	36	65
POST HUNT YR	7	36	65
POST HUNT YR	8	36	65
POST HUNT YR	9	36	65
POST HUNT YR	10	36	65

MENDOCINO UPPER RUSSIAN - GENERAL, SHARE, & PLM SIMULATION RUNS, 2016

Ratio = 40/100/31, Maximum Calf Survival = 60%
THIS PROGRAM CALCULATES CHANGES IN HERD CHARACTERISTICS
BASED ON VARIOUS HARVEST RATES.

HERD GROWTH: BULL & ANTLERLESS TAGS, INCLUDES PLM & COOPERATIVE TAGS
HARVEST UP TO 18 BULL & 25 ANTLERLESS
Various combination of tags to achieved harvest, includes cooperative tags
APPROXIMATE HARVEST SUCCESS RATES; 80 BULL, 75 ANTLERLESS

HERD SIZE	300	ELK
% BULLS LOST TO NON HUNTING CAUSES	20	%
% COWS LOST TO NON HUNTING CAUSES	10	%
% OF BULLS KILLED BY HUNTERS	25.8	%
% OF COWS KILLED BY HUNTERS	15	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	70	175	54	300	300	|	12	16
YEAR 1	"	68	168	96	332	1000	|	18	25
YEAR 2	"	79	172	86	336	1000	|	18	25
YEAR 3	"	83	170	88	341	1000	|	18	25
YEAR 4	"	88	170	87	345	1000	|	18	25
YEAR 5	"	91	170	87	347	1000	|	18	25
YEAR 6	"	93	169	87	349	1000	|	18	25
YEAR 7	"	95	168	86	350	1000	|	18	25
YEAR 8	"	97	168	86	350	1000	|	18	25
YEAR 9	"	98	167	86	350	1000	|	18	25
YEAR 10	"	98	166	85	349	1000	|	18	25

		BULL RATIO	CALF RATIO
START		40	31
POST HUNT YR	1	35	67
POST HUNT YR	2	42	59
POST HUNT YR	3	45	61
POST HUNT YR	4	48	60
POST HUNT YR	5	51	60
POST HUNT YR	6	53	60
POST HUNT YR	7	54	60
POST HUNT YR	8	55	60
POST HUNT YR	9	56	60
POST HUNT YR	10	57	60

MENDOCINO LITTLE LAKE - SIMULATION RUNS, 2016

Ratio = 40/100/31, Maximum Calf Survival = 46%
THIS PROGRAM CALCULATES CHANGES IN HERD CHARACTERISTICS
BASED ON VARIOUS HARVEST
RATES.

PROPOSED HARVEST: BULL & ANTLERLESS TAGS, INCLUDES COOPERATIVE TAGS
HARVEST: 0 - NO HARVEST RECOMMONDED - ESTABLISH ZONE BOUNDARIES

APPROXIMATE HARVEST SUCCESS RATES; 0 BULL, 0 ANTLERLESS

HERD SIZE	20	ELK
% BULLS LOST TO NON HUNTING CAUSES	20	%
% COWS LOST TO NON HUNTING CAUSES	12	%
% OF BULLS KILLED BY HUNTERS	0	%
% OF COWS KILLED BY HUNTERS	0	%

	AU	BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	G	5	12	4	20	20	|	0	0
YEAR 1	"	5	12	5	22	200	|	0	0
YEAR 2	"	6	13	5	25	200	|	0	0
YEAR 3	"	7	14	6	27	200	|	0	0
YEAR 4	"	8	15	6	29	200	|	0	0
YEAR 5	"	9	16	7	31	200	|	0	0
YEAR 6	"	10	17	7	34	200	|	0	0
YEAR 7	"	11	18	8	36	200	|	0	0
YEAR 8	"	12	19	8	39	200	|	0	0
YEAR 9	"	13	20	9	42	200	|	0	0
YEAR 10	"	14	22	9	45	200	|	0	0

		BULL RATIO	CALF RATIO
START		40	31
POST HUNT YR	1	44	45
POST HUNT YR	2	49	43
POST HUNT YR	3	53	43
POST HUNT YR	4	56	43
POST HUNT YR	5	58	43
POST HUNT YR	6	59	43
POST HUNT YR	7	60	43
POST HUNT YR	8	61	43
POST HUNT YR	9	62	43
POST HUNT YR	10	62	43

MENDOCINO LITTLE LAKE - SIMULATION RUNS, GENERAL, SHARE, & PLM 2016

Ratio = 40/100/31, Maximum Calf Survival = 46%
THIS PROGRAM CALCULATES CHANGES IN HERD CHARACTERISTICS
BASED ON VARIOUS HARVEST RATES.

HERD GROWTH: BULL & ANTLERLESS TAGS, INCLUDES COOPERATIVE TAGS
HARVEST: UP TO 5 BULL AND 5 ANTLERLESS
Various combination of tags to achieved harvest, includes cooperative tags
APPROXIMATE HARVEST SUCCESS RATES; 80% BULL, 75% ANTLERLESS

HERD SIZE	100	ELK
% BULLS LOST TO NON HUNTING CAUSES	20	%
% COWS LOST TO NON HUNTING CAUSES	12	%
% OF BULLS KILLED BY HUNTERS	17.4	%
% OF COWS KILLED BY HUNTERS	7.7	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	23	58	18	100	100	|	0	0
YEAR 1	"	26	59	27	112	200	|	5	5
YEAR 2	"	28	60	25	113	200	|	5	5
YEAR 3	"	29	60	26	114	200	|	5	5
YEAR 4	"	29	60	25	114	200	|	5	5
YEAR 5	"	29	60	25	115	200	|	5	5
YEAR 6	"	30	60	25	115	200	|	5	5
YEAR 7	"	30	60	25	115	200	|	5	5
YEAR 8	"	30	60	25	115	200	|	5	5
YEAR 9	"	30	60	25	115	200	|	5	5
YEAR 10	"	30	60	25	115	200	|	5	5

		BULL RATIO	CALF RATIO
START		40	31
POST HUNT YR	1	39	49
POST HUNT YR	2	42	45
POST HUNT YR	3	43	46
POST HUNT YR	4	43	46
POST HUNT YR	5	44	46
POST HUNT YR	6	44	46
POST HUNT YR	7	45	46
POST HUNT YR	8	45	46
POST HUNT YR	9	45	46
POST HUNT YR	10	45	46

MENDOCINO SOUTH COAST - SIMULATION RUNS, 2016

Ratio = 40/100/31, Maximum Calf Survival = 46%
THIS PROGRAM CALCULATES CHANGES IN HERD CHARACTERISTICS
BASED ON VARIOUS HARVEST RATES.

PROPOSED HARVEST: BULL & ANTLERLESS TAGS,
HARVEST UP TO 1 BULL & 1 ANTLERLESS
Various combination of tags to achieved harvest, includes cooperative tags
APPROXIMATE HARVEST SUCCESS RATES; 80 BULL, 75 ANTLERLESS

HERD SIZE	40	ELK
% BULLS LOST TO NON HUNTING CAUSES	20	%
% COWS LOST TO NON HUNTING CAUSES	12	%
% OF BULLS KILLED BY HUNTERS	6	%
% OF COWS KILLED BY HUNTERS	2.9	%

		BULLS	COWS	SURV. CALVES	TOTAL	K	BULLS HARVEST	COWS HARVEST
START	AUG	9	23	7	40	40	1	1
YEAR 1	"	10	23	10	43	200	1	1
YEAR 2	"	11	24	10	46	200	1	1
YEAR 3	"	13	25	11	49	200	1	1
YEAR 4	"	14	26	11	51	200	1	1
YEAR 5	"	15	27	12	54	200	1	1
YEAR 6	"	16	28	12	57	200	1	1
YEAR 7	"	18	30	13	60	200	1	1
YEAR 8	"	19	31	13	63	200	1	1
YEAR 9	"	20	32	14	66	200	1	1
YEAR 10	"	21	34	14	69	200	1	1

		BULL RATIO	CALF RATIO
START		40	31
POST HUNT YR	1	41	46
POST HUNT YR	2	46	44
POST HUNT YR	3	50	44
POST HUNT YR	4	53	44
POST HUNT YR	5	55	44
POST HUNT YR	6	57	44
POST HUNT YR	7	59	44
POST HUNT YR	8	60	44
POST HUNT YR	9	61	44
POST HUNT YR	10	62	44

MENDOCINO SOUTH COAST - SIMULATION RUNS, 2016

Ratio = 40/100/31, Maximum Calf Survival = 46%
THIS PROGRAM CALCULATES CHANGES IN HERD CHARACTERISTICS
BASED ON VARIOUS HARVEST RATES.

INCREASED HARVEST: BULL & ANTLERLESS TAGS,
HARVEST UP TO 2 BULL & 2 ANTLERLESS
Various combination of tags to achieved harvest, includes cooperative tags
APPROXIMATE HARVEST SUCCESS RATES; 80 BULL, 75 ANTLERLESS

HERD SIZE	40	ELK
% BULLS LOST TO NON HUNTING CAUSES	20	%
% COWS LOST TO NON HUNTING CAUSES	12	%
% OF BULLS KILLED BY HUNTERS	16	%
% OF COWS KILLED BY HUNTERS	7	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	9	23	7	40	40	|	1	1
YEAR 1	"	10	23	10	43	200	|	2	2
YEAR 2	"	11	23	10	44	200	|	2	2
YEAR 3	"	11	23	10	44	200	|	2	2
YEAR 4	"	12	23	10	45	200	|	2	2
YEAR 5	"	12	24	10	46	200	|	2	2
YEAR 6	"	12	24	10	46	200	|	2	2
YEAR 7	"	13	24	10	47	200	|	2	2
YEAR 8	"	13	24	10	47	200	|	2	2
YEAR 9	"	13	24	10	48	200	|	2	2
YEAR 10	"	14	24	10	48	200	|	2	2

		BULL RATIO	CALF RATIO
START		40	31
POST HUNT YR	1	38	48
POST HUNT YR	2	42	45
POST HUNT YR	3	44	46
POST HUNT YR	4	46	46
POST HUNT YR	5	48	46
POST HUNT YR	6	50	46
POST HUNT YR	7	51	46
POST HUNT YR	8	52	46
POST HUNT YR	9	52	46
POST HUNT YR	10	53	46

MENDOCINO SOUTH COAST - SIMULATION RUNS, 2016

Ratio = 40/100/31, Maximum Calf Survival = 46%
THIS PROGRAM CALCULATES CHANGES IN HERD CHARACTERISTICS
BASED ON VARIOUS HARVEST RATES.

HERD GROWTH: BULL & ANTLERLESS TAGS, INCLUDES COOPERATIVE TAGS
HARVEST UP TO 5 BULL & 5 ANTLERLESS
Various combination of tags to achieved harvest, includes cooperative tags
APPROXIMATE HARVEST SUCCESS RATES; 80 BULL, 75 ANTLERLESS

HERD SIZE	100	ELK
% BULLS LOST TO NON HUNTING CAUSES	20	%
% COWS LOST TO NON HUNTING CAUSES	12	%
% OF BULLS KILLED BY HUNTERS	17.9	%
% OF COWS KILLED BY HUNTERS	7.7	%

		BULLS	COWS	SURV. CALVES	TOTAL	K	BULLS HARVEST	COWS HARVEST
START	AUG	23	58	18	100	100	1	1
YEAR 1	"	25	59	26	110	200	5	5
YEAR 2	"	27	59	25	111	200	5	5
YEAR 3	"	28	59	25	112	200	5	5
YEAR 4	"	29	59	25	113	200	5	5
YEAR 5	"	30	59	25	114	200	5	5
YEAR 6	"	30	59	25	114	200	5	5
YEAR 7	"	30	59	25	115	200	5	5
YEAR 8	"	31	59	25	115	200	5	5
YEAR 9	"	31	59	25	115	200	5	5
YEAR 10	"	31	59	25	115	200	5	5

		BULL RATIO	CALF RATIO
START		40	31
POST HUNT YR	1	38	49
POST HUNT YR	2	41	45
POST HUNT YR	3	43	46
POST HUNT YR	4	45	46
POST HUNT YR	5	46	46
POST HUNT YR	6	47	46
POST HUNT YR	7	48	46
POST HUNT YR	8	48	46
POST HUNT YR	9	49	46
POST HUNT YR	10	49	46

MENDOCINO SOUTH COAST - SIMULATION RUNS, 2016

Ratio = 40/100/31, Maximum Calf Survival = 46%
THIS PROGRAM CALCULATES CHANGES IN HERD CHARACTERISTICS
BASED ON VARIOUS HARVEST RATES.

REDUCED HARVEST: BULL & ANTLERLESS TAGS,
HARVEST UP TO 1 BULL & 0 ANTLERLESS
Various combination of tags to achieved harvest, includes cooperative tags
APPROXIMATE HARVEST SUCCESS RATES; 80 BULL, 75 ANTLERLESS

HERD SIZE	40	ELK
% BULLS LOST TO NON HUNTING CAUSES	20	%
% COWS LOST TO NON HUNTING CAUSES	12	%
% OF BULLS KILLED BY HUNTERS	6	%
% OF COWS KILLED BY HUNTERS	0	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	9	23	7	40	40	|	1	1
YEAR 1	"	10	23	10	43	200	|	1	0
YEAR 2	"	11	25	11	47	200	|	1	0
YEAR 3	"	13	26	11	51	200	|	1	0
YEAR 4	"	14	28	12	55	200	|	1	0
YEAR 5	"	16	30	13	59	200	|	1	0
YEAR 6	"	17	32	14	63	200	|	1	0
YEAR 7	"	19	34	15	68	200	|	1	0
YEAR 8	"	21	37	16	73	200	|	1	0
YEAR 9	"	22	39	17	79	200	|	1	0
YEAR 10	"	24	42	18	85	200	|	1	0

		BULL RATIO	CALF RATIO
START		40	31
POST HUNT YR	1	39	45
POST HUNT YR	2	44	43
POST HUNT YR	3	46	43
POST HUNT YR	4	49	43
POST HUNT YR	5	51	43
POST HUNT YR	6	52	43
POST HUNT YR	7	54	43
POST HUNT YR	8	55	43
POST HUNT YR	9	55	43
POST HUNT YR	10	56	43

CACHE CREEK TULE ELK HERD - SIMULATION RUNS, GENERAL AND SHARE 2016
Ratio = 25/100/51 - Maximum Calf Survival = 60%
THIS PROGRAM CALCULATES CHANGES IN
HERD
CHARACTERISTICS BASED ON VARIOUS
HARVEST
RATES.

CURRENT CONDITION: BULL, COW,
TO HARVEST UP TO 4 BULLS & 3 COWS
Various combination of tags to achieved harvest,
Assuming success rate of 90% bull and 90% antlerless

HERD SIZE	125	ELK
% BULLS LOST TO NON HUNTING CAUSES	40	%
% COWS LOST TO NON HUNTING CAUSES	20	%
% OF BULLS KILLED BY HUNTERS	18.4	%
% OF COWS KILLED BY HUNTERS	4	%

		BULLS	COWS	SURV. CALVES	TOTAL	K	BULLS HARVEST	COWS HARVEST
START	AUG	18	71	36	125	125	3	2
YEAR 1	"	20	70	41	131	200	4	3
YEAR 2	"	22	70	40	132	200	4	3
YEAR 3	"	23	70	40	133	200	4	3
YEAR 4	"	23	70	40	133	200	4	3
YEAR 5	"	23	70	40	133	200	4	3
YEAR 6	"	24	70	40	133	200	4	3
YEAR 7	"	24	70	40	133	200	4	3
YEAR 8	"	24	69	40	133	200	4	3
YEAR 9	"	24	69	40	133	200	4	3
YEAR 10	"	24	69	40	133	200	4	3

		BULL RATIO	CALF RATIO
START		25	51
POST HUNT YR	1	24	62
POST HUNT YR	2	27	60
POST HUNT YR	3	28	60
POST HUNT YR	4	28	60
POST HUNT YR	5	29	60
POST HUNT YR	6	29	60
POST HUNT YR	7	29	60
POST HUNT YR	8	29	60
POST HUNT YR	9	29	60
POST HUNT YR	10	29	60

CACHE CREEK TULE ELK HERD - SIMULATION RUNS, GENERAL AND SHARE 2016
Ratio = 25/100/51 - Maximum Calf Survival = 60%
THIS PROGRAM CALCULATES CHANGES IN
HERD
CHARACTERISTICS BASED ON VARIOUS
HARVEST
RATES.

PROPOSED: BULL, COW,
TO HARVEST UP TO 4 BULLS & 3 COWS
Various combination of tags to achieved harvest,
Assuming success rate of 90% bull and 90% antlerless

HERD SIZE	125	ELK
% BULLS LOST TO NON HUNTING CAUSES	40	%
% COWS LOST TO NON HUNTING CAUSES	20	%
% OF BULLS KILLED BY HUNTERS	18.4	%
% OF COWS KILLED BY HUNTERS	5	%

		BULLS	COWS	SURV. CALVES	TOTAL	K	BULLS HARVEST	COWS HARVEST
START	AUG	18	71	36	125	125	3	2
YEAR 1	"	20	70	41	131	200	4	3
YEAR 2	"	22	70	40	131	200	4	3
YEAR 3	"	23	69	40	131	200	4	3
YEAR 4	"	23	68	39	130	200	4	3
YEAR 5	"	23	67	39	129	200	4	3
YEAR 6	"	23	67	38	128	200	4	3
YEAR 7	"	23	66	38	127	200	4	3
YEAR 8	"	23	65	38	126	200	4	3
YEAR 9	"	22	65	37	125	200	4	3
YEAR 10	"	22	64	37	123	200	4	3

		BULL RATIO	CALF RATIO
START		25	51
POST HUNT YR	1	24	63
POST HUNT YR	2	27	60
POST HUNT YR	3	28	61
POST HUNT YR	4	29	61
POST HUNT YR	5	29	61
POST HUNT YR	6	29	61
POST HUNT YR	7	30	61
POST HUNT YR	8	30	61
POST HUNT YR	9	30	61
POST HUNT YR	10	30	61

CACHE CREEK TULE ELK HERD - SIMULATION RUNS, GENERAL AND SHARE 2016
Ratio = 25/100/51 - Maximum Calf Survival = 60%
THIS PROGRAM CALCULATES CHANGES IN
HERD
CHARACTERISTICS BASED ON VARIOUS
HARVEST
RATES.

INCREASED HARVEST: BULL, COW,
TO HARVEST UP TO 8 BULLS & 6 COWS
Various combination of tags to achieved harvest,
Assuming success rate of 90% bull and 90% antlerless

HERD SIZE	125	ELK
% BULLS LOST TO NON HUNTING CAUSES	40	%
% COWS LOST TO NON HUNTING CAUSES	20	%
% OF BULLS KILLED BY HUNTERS	39	%
% OF COWS KILLED BY HUNTERS	8	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	18	71	36	125	125	|	3	2
YEAR 1	"	20	70	41	131	200	|	8	6
YEAR 2	"	20	68	38	126	200	|	8	5
YEAR 3	"	19	65	37	122	200	|	7	5
YEAR 4	"	18	63	36	117	200	|	7	5
YEAR 5	"	17	61	35	113	200	|	7	5
YEAR 6	"	17	59	34	109	200	|	7	5
YEAR 7	"	16	57	32	105	200	|	6	5
YEAR 8	"	16	55	31	102	200	|	6	4
YEAR 9	"	15	53	30	98	200	|	6	4
YEAR 10	"	15	51	29	95	200	|	6	4

		BULL RATIO	CALF RATIO
START		25	51
POST HUNT YR	1	19	65
POST HUNT YR	2	19	62
POST HUNT YR	3	19	62
POST HUNT YR	4	19	62
POST HUNT YR	5	19	62
POST HUNT YR	6	19	62
POST HUNT YR	7	19	62
POST HUNT YR	8	19	62
POST HUNT YR	9	19	62
POST HUNT YR	10	19	62

CACHE CREEK TULE ELK HERD - SIMULATION RUNS, GENERAL AND SHARE 2016
Ratio = 25/100/51 - Maximum Calf Survival = 60%
THIS PROGRAM CALCULATES CHANGES IN
HERD
CHARACTERISTICS BASED ON VARIOUS
HARVEST
RATES.

HERD GROWTH: BULL, COW,
TO HARVEST UP TO 5 BULLS & 6 COWS
Various combination of tags to achieved harvest,
Assuming success rate of 90% bull and 90% antlerless

HERD SIZE	175	ELK
% BULLS LOST TO NON HUNTING CAUSES	40	%
% COWS LOST TO NON HUNTING CAUSES	20	%
% OF BULLS KILLED BY HUNTERS	16.8	%
% OF COWS KILLED BY HUNTERS	6.5	%

		BULLS	COWS	SURV. CALVES	TOTAL	K	BULLS HARVEST	COWS HARVEST
START	AUG	25	99	51	175	175	3	2
YEAR 1	"	28	98	58	185	200	5	6
YEAR 2	"	32	97	55	184	200	5	6
YEAR 3	"	32	94	54	181	200	5	6
YEAR 4	"	32	92	53	178	200	5	6
YEAR 5	"	32	90	52	174	200	5	6
YEAR 6	"	32	88	51	171	200	5	6
YEAR 7	"	31	86	50	167	200	5	6
YEAR 8	"	30	84	48	163	200	5	5
YEAR 9	"	30	82	47	159	200	5	5
YEAR 10	"	29	81	46	156	200	5	5

		BULL RATIO	CALF RATIO
START		25	51
POST HUNT YR	1	26	64
POST HUNT YR	2	29	61
POST HUNT YR	3	30	62
POST HUNT YR	4	31	61
POST HUNT YR	5	32	61
POST HUNT YR	6	32	61
POST HUNT YR	7	32	61
POST HUNT YR	8	32	61
POST HUNT YR	9	32	61
POST HUNT YR	10	32	61

CACHE CREEK TULE ELK HERD - SIMULATION RUNS, GENERAL AND SHARE 2016
Ratio = 25/100/51 - Maximum Calf Survival = 60%
THIS PROGRAM CALCULATES CHANGES IN
HERD
CHARACTERISTICS BASED ON VARIOUS
HARVEST
RATES.

PROPOSED: BULL, COW,
TO HARVEST UP TO 2 BULLS & 1 COWS
Various combination of tags to achieved harvest,
Assuming success rate of 90% bull and 90% antlerless

HERD SIZE	125	ELK
% BULLS LOST TO NON HUNTING CAUSES	40	%
% COWS LOST TO NON HUNTING CAUSES	20	%
% OF BULLS KILLED BY HUNTERS	7.7	%
% OF COWS KILLED BY HUNTERS	1	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	18	71	36	125	125	|	3	2
YEAR 1	"	20	70	41	131	200	|	2	1
YEAR 2	"	23	72	41	137	200	|	2	1
YEAR 3	"	25	73	43	141	200	|	2	1
YEAR 4	"	27	75	44	146	200	|	2	1
YEAR 5	"	28	77	45	150	200	|	2	1
YEAR 6	"	29	79	46	153	200	|	2	1
YEAR 7	"	30	81	47	157	200	|	2	1
YEAR 8	"	31	83	48	161	200	|	2	1
YEAR 9	"	31	85	49	165	200	|	2	1
YEAR 10	"	32	87	50	169	200	|	2	1

		BULL RATIO	CALF RATIO
START		25	51
POST HUNT YR	1	26	60
POST HUNT YR	2	30	58
POST HUNT YR	3	32	59
POST HUNT YR	4	33	59
POST HUNT YR	5	34	59
POST HUNT YR	6	34	59
POST HUNT YR	7	34	59
POST HUNT YR	8	34	59
POST HUNT YR	9	34	59
POST HUNT YR	10	34	59

LA PANZA - SIMULATION RUNS, GENERAL, SHARE, & PLM 2016
Ratio = 26/100/29 - Maximum Calf Survival =67%
THIS PROGRAM CALCULATES CHANGES IN
HERD
CHARACTERISTICS BASED ON VARIOUS
HARVEST
RATES.

CURRENT CONDITION: BULL & ANTLERLESS (INCLUDES COOPERATIVE)
TO HARVEST UP TO 47 BULL AND 51 ANTLERLESS
Various combination of tags to achieve harvest,
Assuming success rate of 80% bull and 70% antlerless

HERD SIZE	700	ELK
% BULLS LOST TO NON HUNTING CAUSES	22	%
% COWS LOST TO NON HUNTING CAUSES	12	%
% OF BULLS KILLED BY HUNTERS	42	%
% OF COWS KILLED BY HUNTERS	12.1	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	117	452	131	700	700	|	40	40
YEAR 1	"	111	420	276	807	1250	|	47	51
YEAR 2	"	158	446	247	851	1250	|	47	51
YEAR 3	"	183	457	265	905	1250	|	47	51
YEAR 4	"	210	474	272	955	1250	|	47	51
YEAR 5	"	233	492	283	1008	1250	|	47	51
YEAR 6	"	256	513	295	1064	1250	|	47	51
YEAR 7	"	278	537	309	1124	1250	|	47	51
YEAR 8	"	301	564	325	1190	1250	|	47	51
YEAR 9	"	325	594	330	1250	1250	|	47	51
YEAR 10	"	346	624	280	1250	1250	|	47	51

		BULL RATIO	CALF RATIO
START		26	29
POST HUNT YR	1	18	75
POST HUNT YR	2	28	63
POST HUNT YR	3	34	65
POST HUNT YR	4	38	64
POST HUNT YR	5	42	64
POST HUNT YR	6	45	64
POST HUNT YR	7	48	64
POST HUNT YR	8	50	63
POST HUNT YR	9	51	61
POST HUNT YR	10	52	49

LA PANZA - SIMULATION RUNS, GENERAL, SHARE, & PLM 2016
Ratio = 26/100/29 - Maximum Calf Survival =67%
THIS PROGRAM CALCULATES CHANGES IN
HERD
CHARACTERISTICS BASED ON VARIOUS
HARVEST
RATES.

PROPOSED: BULL & ANTLERLESS (INCLUDES COOPERATIVE)
TO HARVEST UP TO 50 BULL AND 70 ANTLERLESS
Various combination of tags to achieve harvest,
Assuming success rate of 80% bull and 70% antlerless

HERD SIZE	700	ELK
% BULLS LOST TO NON HUNTING CAUSES	22	%
% COWS LOST TO NON HUNTING CAUSES	12	%
% OF BULLS KILLED BY HUNTERS	45	%
% OF COWS KILLED BY HUNTERS	16.6	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	117	452	131	700	700	|	40	40
YEAR 1	"	111	420	276	807	1250	|	50	70
YEAR 2	"	155	429	235	819	1250	|	50	70
YEAR 3	"	174	420	241	834	1250	|	50	70
YEAR 4	"	190	414	235	839	1250	|	50	70
YEAR 5	"	201	406	231	838	1250	|	50	70
YEAR 6	"	207	398	226	831	1250	|	50	70
YEAR 7	"	211	388	220	819	1250	|	50	70
YEAR 8	"	211	377	213	801	1250	|	50	70
YEAR 9	"	209	364	206	779	1250	|	50	70
YEAR 10	"	204	350	197	751	1250	|	50	70

		BULL RATIO	CALF RATIO
START		26	29
POST HUNT YR	1	18	79
POST HUNT YR	2	29	65
POST HUNT YR	3	35	69
POST HUNT YR	4	41	68
POST HUNT YR	5	45	69
POST HUNT YR	6	48	69
POST HUNT YR	7	50	69
POST HUNT YR	8	52	69
POST HUNT YR	9	54	70
POST HUNT YR	10	55	70

LA PANZA - SIMULATION RUNS, GENERAL, SHARE, & PLM 2016
Ratio = 26/100/29 - Maximum Calf Survival =67%
THIS PROGRAM CALCULATES CHANGES IN
HERD
CHARACTERISTICS BASED ON VARIOUS
HARVEST
RATES.

INCREASED HARVEST: BULL & ANTLERLESS (INCLUDES COOPERATIVE)
TO HARVEST UP TO 75 BULL AND 105 ANTLERLESS
Various combination of tags to achieve harvest,
Assuming success rate of 80% bull and 70% antlerless

HERD SIZE	700	ELK
% BULLS LOST TO NON HUNTING CAUSES	22	%
% COWS LOST TO NON HUNTING CAUSES	12	%
% OF BULLS KILLED BY HUNTERS	67	%
% OF COWS KILLED BY HUNTERS	25	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	117	452	131	700	700	|	40	40
YEAR 1	"	111	420	276	807	1250	|	75	105
YEAR 2	"	136	398	211	746	1250	|	75	100
YEAR 3	"	130	356	200	686	1250	|	75	89
YEAR 4	"	121	323	179	623	1250	|	75	81
YEAR 5	"	106	292	162	560	1250	|	71	73
YEAR 6	"	91	264	147	501	1250	|	61	66
YEAR 7	"	81	239	133	452	1250	|	54	60
YEAR 8	"	72	216	120	408	1250	|	49	54
YEAR 9	"	65	195	109	369	1250	|	44	49
YEAR 10	"	59	177	98	334	1250	|	40	44

		BULL RATIO	CALF RATIO
START		26	29
POST HUNT YR	1	12	88
POST HUNT YR	2	21	71
POST HUNT YR	3	21	75
POST HUNT YR	4	19	74
POST HUNT YR	5	16	74
POST HUNT YR	6	15	74
POST HUNT YR	7	15	74
POST HUNT YR	8	15	74
POST HUNT YR	9	15	74
POST HUNT YR	10	15	74

LA PANZA - SIMULATION RUNS, GENERAL, SHARE, & PLM 2016
Ratio = 26/100/29 - Maximum Calf Survival =67%
THIS PROGRAM CALCULATES CHANGES IN
HERD
CHARACTERISTICS BASED ON VARIOUS
HARVEST
RATES.

HERD GROWTH: BULL & ANTLERLESS (INCLUDES COOPERATIVE)
TO HARVEST UP TO 75 BULL AND 100 ANTLERLESS
Various combination of tags to achieve harvest,
Assuming success rate of 80% bull and 70% antlerless

HERD SIZE	1000	ELK
% BULLS LOST TO NON HUNTING CAUSES	22	%
% COWS LOST TO NON HUNTING CAUSES	12	%
% OF BULLS KILLED BY HUNTERS	43.2	%
% OF COWS KILLED BY HUNTERS	16.3	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	168	645	187	1000	1000	|	40	40
YEAR 1	"	173	615	405	1193	1250	|	75	100
YEAR 2	"	235	631	345	1211	1250	|	75	100
YEAR 3	"	259	619	356	1234	1250	|	75	100
YEAR 4	"	283	613	348	1244	1250	|	75	100
YEAR 5	"	298	604	344	1246	1250	|	75	100
YEAR 6	"	308	595	338	1241	1250	|	75	100
YEAR 7	"	314	584	331	1229	1250	|	75	100
YEAR 8	"	316	571	324	1211	1250	|	75	100
YEAR 9	"	315	557	316	1188	1250	|	75	100
YEAR 10	"	310	541	306	1158	1250	|	75	100

		BULL RATIO	CALF RATIO
START		26	29
POST HUNT YR	1	19	79
POST HUNT YR	2	30	65
POST HUNT YR	3	36	69
POST HUNT YR	4	41	68
POST HUNT YR	5	44	68
POST HUNT YR	6	47	68
POST HUNT YR	7	50	69
POST HUNT YR	8	51	69
POST HUNT YR	9	53	69
POST HUNT YR	10	54	69

LA PANZA - SIMULATION RUNS, GENERAL, SHARE, & PLM 2016
Ratio = 26/100/29 - Maximum Calf Survival =67%
THIS PROGRAM CALCULATES CHANGES IN
HERD
CHARACTERISTICS BASED ON VARIOUS
HARVEST
RATES.

REDUCED HARVEST: BULL & ANTLERLESS (INCLUDES COOPERATIVE)
TO HARVEST UP TO 25 BULL AND 35 ANTLERLESS
Various combination of tags to achieve harvest,
Assuming success rate of 80% bull and 70% antlerless

HERD SIZE	700	ELK
% BULLS LOST TO NON HUNTING CAUSES	22	%
% COWS LOST TO NON HUNTING CAUSES	12	%
% OF BULLS KILLED BY HUNTERS	22	%
% OF COWS KILLED BY HUNTERS	8.3	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	117	452	131	700	700	|	40	40
YEAR 1	"	111	420	276	807	1250	|	25	35
YEAR 2	"	175	460	258	893	1250	|	25	35
YEAR 3	"	218	488	285	991	1250	|	25	35
YEAR 4	"	262	524	303	1090	1250	|	25	35
YEAR 5	"	304	564	328	1195	1250	|	25	35
YEAR 6	"	346	610	295	1250	1250	|	25	35
YEAR 7	"	365	636	249	1250	1250	|	25	35
YEAR 8	"	363	638	249	1250	1250	|	25	35
YEAR 9	"	361	640	249	1250	1250	|	25	35
YEAR 10	"	359	642	248	1250	1250	|	25	35

		BULL RATIO	CALF RATIO
START		26	29
POST HUNT YR	1	23	72
POST HUNT YR	2	35	61
POST HUNT YR	3	43	63
POST HUNT YR	4	49	62
POST HUNT YR	5	53	62
POST HUNT YR	6	56	51
POST HUNT YR	7	57	41
POST HUNT YR	8	56	41
POST HUNT YR	9	56	41
POST HUNT YR	10	55	41

BISHOP - SIMULATION RUNS, 2016

Ratio = 75/100/22 - Maximum Calf Survival = 50%

THIS PROGRAM CALCULATES CHANGES IN HERD CHARACTERISTICS BASED ON VARIOUS HARVEST RATES.

CURRENT CONDITION: BULL & ANTLERLESS
TO HARVEST UP TO 3 BULL AND 0 ANTLERLESS
Various combination of tags to achieve harvest,
Assuming success rate of 80% bull and 70% antlerless

HERD SIZE	25	ELK
% BULLS LOST TO NON HUNTING CAUSES	18	%
% COWS LOST TO NON HUNTING CAUSES	9	%
% OF BULLS KILLED BY HUNTERS	39	%
% OF COWS KILLED BY HUNTERS	0	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	10	13	3	25	25	|	3	0
YEAR 1	"	6	13	6	26	150	|	3	0
YEAR 2	"	6	15	6	27	150	|	2	0
YEAR 3	"	6	16	7	29	150	|	2	0
YEAR 4	"	6	18	8	32	150	|	2	0
YEAR 5	"	6	20	9	35	150	|	2	0
YEAR 6	"	7	22	10	39	150	|	3	0
YEAR 7	"	8	25	11	44	150	|	3	0
YEAR 8	"	8	28	12	49	150	|	3	0
YEAR 9	"	9	31	14	54	150	|	3	0
YEAR 10	"	11	34	15	61	150	|	3	0

		BULL RATIO	CALF RATIO
START		75	22
POST HUNT YR	1	31	50
POST HUNT YR	2	25	44
POST HUNT YR	3	21	45
POST HUNT YR	4	20	45
POST HUNT YR	5	19	45
POST HUNT YR	6	19	45
POST HUNT YR	7	18	45
POST HUNT YR	8	18	45
POST HUNT YR	9	19	45
POST HUNT YR	10	21	45

BISHOP - SIMULATION RUNS, 2016

Ratio = 75/100/22 - Maximum Calf Survival = 50%

THIS PROGRAM CALCULATES CHANGES IN HERD CHARACTERISTICS BASED ON VARIOUS HARVEST RATES.

PROPOSED: BULL & ANTLERLESS
TO HARVEST UP TO 3 BULL AND 0 ANTLERLESS
Various combination of tags to achieve harvest,
Assuming success rate of 80% bull

HERD SIZE	25	ELK
% BULLS LOST TO NON HUNTING CAUSES	18	%
% COWS LOST TO NON HUNTING CAUSES	9	%
% OF BULLS KILLED BY HUNTERS	39	%
% OF COWS KILLED BY HUNTERS	0	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	10	13	3	25	25	|	3	0
YEAR 1	"	6	13	6	26	150	|	3	0
YEAR 2	"	6	15	6	27	150	|	2	0
YEAR 3	"	6	16	7	29	150	|	2	0
YEAR 4	"	6	18	8	32	150	|	2	0
YEAR 5	"	6	20	9	35	150	|	2	0
YEAR 6	"	7	22	10	39	150	|	3	0
YEAR 7	"	8	25	11	44	150	|	3	0
YEAR 8	"	8	28	12	49	150	|	3	0
YEAR 9	"	9	31	14	54	150	|	3	0
YEAR 10	"	11	34	15	61	150	|	3	0

		BULL RATIO	CALF RATIO
START		75	22
POST HUNT YR	1	31	50
POST HUNT YR	2	25	44
POST HUNT YR	3	21	45
POST HUNT YR	4	20	45
POST HUNT YR	5	19	45
POST HUNT YR	6	19	45
POST HUNT YR	7	18	45
POST HUNT YR	8	18	45
POST HUNT YR	9	19	45
POST HUNT YR	10	21	45

BISHOP - SIMULATION RUNS, 2016

Ratio = 75/100/22 - Maximum Calf Survival = 50%

THIS PROGRAM CALCULATES CHANGES IN HERD CHARACTERISTICS BASED ON VARIOUS HARVEST RATES.

INCREASED HARVEST: BULL & ANTLERLESS
TO HARVEST UP TO 4 BULL AND 0 ANTLERLESS
Various combination of tags to achieve harvest,
Assuming success rate of 80% bull and 70% antlerless

HERD SIZE	25	ELK
% BULLS LOST TO NON HUNTING CAUSES	18	%
% COWS LOST TO NON HUNTING CAUSES	9	%
% OF BULLS KILLED BY HUNTERS	60	%
% OF COWS KILLED BY HUNTERS	0	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	10	13	3	25	25	|	3	0
YEAR 1	"	6	13	6	26	150	|	4	0
YEAR 2	"	5	15	6	26	150	|	3	0
YEAR 3	"	4	16	7	28	150	|	3	0
YEAR 4	"	4	18	8	30	150	|	3	0
YEAR 5	"	5	20	9	34	150	|	3	0
YEAR 6	"	5	22	10	38	150	|	3	0
YEAR 7	"	6	25	11	42	150	|	4	0
YEAR 8	"	6	28	12	47	150	|	4	0
YEAR 9	"	8	31	14	52	150	|	4	0
YEAR 10	"	9	34	15	59	150	|	4	0

		BULL RATIO	CALF RATIO
START		75	22
POST HUNT YR	1	20	50
POST HUNT YR	2	13	44
POST HUNT YR	3	10	45
POST HUNT YR	4	10	45
POST HUNT YR	5	9	45
POST HUNT YR	6	9	45
POST HUNT YR	7	9	45
POST HUNT YR	8	11	45
POST HUNT YR	9	13	45
POST HUNT YR	10	16	45

BISHOP - SIMULATION RUNS, 2016

Ratio = 21/100/21 - Maximum Calf Survival = 50%

THIS PROGRAM CALCULATES CHANGES IN HERD CHARACTERISTICS BASED ON VARIOUS HARVEST RATES.

HERD GROWTH: BULL & ANTLERLESS
TO HARVEST UP TO 5 BULL AND 6 ANTLERLESS
Various combination of tags to achieve harvest,
Assuming success rate of 80% bull and 70% antlerless

HERD SIZE	80	ELK
% BULLS LOST TO NON HUNTING CAUSES	18	%
% COWS LOST TO NON HUNTING CAUSES	9	%
% OF BULLS KILLED BY HUNTERS	40	%
% OF COWS KILLED BY HUNTERS	10	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	12	56	12	80	80	|	3	0
YEAR 1	"	12	57	28	97	150	|	5	6
YEAR 2	"	17	59	25	102	150	|	5	6
YEAR 3	"	21	60	27	108	150	|	5	6
YEAR 4	"	24	61	27	112	150	|	5	6
YEAR 5	"	27	63	28	117	150	|	5	6
YEAR 6	"	29	64	28	121	150	|	5	6
YEAR 7	"	32	65	29	125	150	|	5	6
YEAR 8	"	34	66	29	130	150	|	5	6
YEAR 9	"	36	68	30	134	150	|	5	6
YEAR 10	"	38	70	31	138	150	|	5	6

		BULL RATIO	CALF RATIO
START		21	21
POST HUNT YR	1	14	55
POST HUNT YR	2	24	48
POST HUNT YR	3	30	49
POST HUNT YR	4	35	49
POST HUNT YR	5	39	49
POST HUNT YR	6	43	49
POST HUNT YR	7	46	49
POST HUNT YR	8	48	49
POST HUNT YR	9	50	49
POST HUNT YR	10	52	49

BISHOP - SIMULATION RUNS, 2016

Ratio = 75/100/22 - Maximum Calf Survival = 50%

THIS PROGRAM CALCULATES CHANGES IN HERD CHARACTERISTICS BASED ON VARIOUS HARVEST RATES.

REDUCED HARVEST: BULL & ANTLERLESS
TO HARVEST UP TO 1 BULL AND 0 ANTLERLESS
Various combination of tags to achieve harvest,
Assuming success rate of 80% bull

HERD SIZE	25	ELK
% BULLS LOST TO NON HUNTING CAUSES	18	%
% COWS LOST TO NON HUNTING CAUSES	9	%
% OF BULLS KILLED BY HUNTERS	11	%
% OF COWS KILLED BY HUNTERS	0	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	10	13	3	25	25	|	3	0
YEAR 1	"	6	13	6	26	150	|	1	0
YEAR 2	"	7	15	6	28	150	|	1	0
YEAR 3	"	8	16	7	31	150	|	1	0
YEAR 4	"	9	18	8	35	150	|	1	0
YEAR 5	"	10	20	9	39	150	|	1	0
YEAR 6	"	11	22	10	43	150	|	1	0
YEAR 7	"	12	25	11	48	150	|	1	0
YEAR 8	"	13	28	12	54	150	|	1	0
YEAR 9	"	15	31	14	60	150	|	1	0
YEAR 10	"	17	34	15	67	150	|	1	0

		BULL RATIO	CALF RATIO
START		75	22
POST HUNT YR	1	45	50
POST HUNT YR	2	45	44
POST HUNT YR	3	44	45
POST HUNT YR	4	44	45
POST HUNT YR	5	43	45
POST HUNT YR	6	43	45
POST HUNT YR	7	43	45
POST HUNT YR	8	43	45
POST HUNT YR	9	43	45
POST HUNT YR	10	44	45

INDEPENDENCE TULE ELK SUBHERD - SIMULATION RUNS, 2016
Ratio = 57/100/47 - Maximum Calf Survival = 50%
THIS PROGRAM CALCULATES CHANGES IN
HERD
CHARACTERISTICS BASED ON VARIOUS
HARVEST
RATES.

CURRENT CONDITION: HARVEST 5 BULL TAG 1 ANTLERLESS
NO CHANGE: HARVEST UP TO 5 BULL AND 1 ANTLERLESS
Various combination of tags to achieve harvest,
Assuming success rate of 80% bull and 60% antlerless
(Proposed project would split zone into Independence and Goodale zones)

HERD SIZE	85	ELK
% BULLS LOST TO NON HUNTING CAUSES	19	%
% COWS LOST TO NON HUNTING CAUSES	5	%
% OF BULLS KILLED BY HUNTERS	18.5	%
% OF COWS KILLED BY HUNTERS	1.2	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	24	42	20	85	85	|	3	0
YEAR 1	"	25	49	21	94	150	|	5	1
YEAR 2	"	25	56	24	105	150	|	5	1
YEAR 3	"	26	64	28	118	150	|	5	1
YEAR 4	"	29	73	32	133	150	|	5	1
YEAR 5	"	32	83	34	150	150	|	5	1
YEAR 6	"	36	95	19	150	150	|	5	1
YEAR 7	"	33	98	18	150	150	|	5	1
YEAR 8	"	31	101	18	150	150	|	5	1
YEAR 9	"	29	104	18	150	150	|	5	1
YEAR 10	"	27	106	17	150	150	|	5	1

		BULL RATIO	CALF RATIO
START		57	47
POST HUNT YR	1	42	43
POST HUNT YR	2	37	44
POST HUNT YR	3	34	44
POST HUNT YR	4	33	44
POST HUNT YR	5	33	41
POST HUNT YR	6	34	20
POST HUNT YR	7	30	19
POST HUNT YR	8	26	18
POST HUNT YR	9	23	17
POST HUNT YR	10	21	16

INDEPENDENCE TULE ELK SUBHERD - SIMULATION RUNS, 2016
Ratio = 57/100/47 - Maximum Calf Survival = 50%
THIS PROGRAM CALCULATES CHANGES IN
HERD
CHARACTERISTICS BASED ON VARIOUS
HARVEST
RATES.

PROPOSED PROJECT: BULL & ANTLERLESS
TO HARVEST UP TO 4 BULLS & 2 ANTLERLESS, INCLUDES COOPERATIVE TAGS
Various combination of tags to achieve harvest,
Assuming success rate of 80% bull and 60% antlerless

HERD SIZE	50	ELK
% BULLS LOST TO NON HUNTING CAUSES	19	%
% COWS LOST TO NON HUNTING CAUSES	5	%
% OF BULLS KILLED BY HUNTERS	27	%
% OF COWS KILLED BY HUNTERS	8	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	14	25	12	50	50	|	3	0
YEAR 1	"	14	29	12	55	150	|	4	2
YEAR 2	"	13	31	13	57	150	|	4	2
YEAR 3	"	13	34	14	61	150	|	4	2
YEAR 4	"	13	36	16	65	150	|	4	2
YEAR 5	"	14	40	17	71	150	|	4	2
YEAR 6	"	15	44	19	78	150	|	4	2
YEAR 7	"	17	48	21	86	150	|	4	2
YEAR 8	"	19	54	23	96	150	|	4	2
YEAR 9	"	22	60	26	107	150	|	4	2
YEAR 10	"	25	67	29	121	150	|	4	2

		BULL RATIO	CALF RATIO
START		57	47
POST HUNT YR	1	37	46
POST HUNT YR	2	33	46
POST HUNT YR	3	30	46
POST HUNT YR	4	28	46
POST HUNT YR	5	28	45
POST HUNT YR	6	28	45
POST HUNT YR	7	29	45
POST HUNT YR	8	30	45
POST HUNT YR	9	32	45
POST HUNT YR	10	34	45

INDEPENDENCE TULE ELK SUBHERD - SIMULATION RUNS, 2016
Ratio = 57/100/47 - Maximum Calf Survival = 50%
THIS PROGRAM CALCULATES CHANGES IN
HERD
CHARACTERISTICS BASED ON VARIOUS
HARVEST
RATES.

INCREASED HARVEST: BULL & ANTLERLESS
TO HARVEST UP TO 7 BULLS & 4 ANTLERLESS, INCLUDES COOPERATIVE TAGS
Various combination of tags to achieve harvest,
Assuming success rate of 80% bull and 60% antlerless

HERD SIZE	50	ELK
% BULLS LOST TO NON HUNTING CAUSES	19	%
% COWS LOST TO NON HUNTING CAUSES	5	%
% OF BULLS KILLED BY HUNTERS	50	%
% OF COWS KILLED BY HUNTERS	13	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	14	25	12	50	50	|	3	0
YEAR 1	"	14	29	12	55	150	|	7	4
YEAR 2	"	10	30	13	53	150	|	5	4
YEAR 3	"	9	30	13	53	150	|	5	4
YEAR 4	"	9	31	13	53	150	|	4	4
YEAR 5	"	9	32	14	55	150	|	4	4
YEAR 6	"	9	33	14	56	150	|	5	4
YEAR 7	"	9	34	14	58	150	|	5	4
YEAR 8	"	10	35	15	59	150	|	5	4
YEAR 9	"	10	36	15	61	150	|	5	4
YEAR 10	"	10	37	16	63	150	|	5	4

		BULL RATIO	CALF RATIO
START		57	47
POST HUNT YR	1	27	49
POST HUNT YR	2	20	49
POST HUNT YR	3	18	49
POST HUNT YR	4	17	49
POST HUNT YR	5	16	49
POST HUNT YR	6	16	49
POST HUNT YR	7	16	49
POST HUNT YR	8	16	48
POST HUNT YR	9	16	48
POST HUNT YR	10	16	48

INDEPENDENCE TULE ELK SUBHERD - SIMULATION RUNS, 2016
Ratio = 57/100/47- Maximum Calf Survival = 50%
THIS PROGRAM CALCULATES CHANGES IN
HERD
CHARACTERISTICS BASED ON VARIOUS
HARVEST
RATES.

HERD GROWTH: BULL & ANTLERLESS
TO HARVEST UP TO 8 BULLS & 9 ANTLERLESS, INCLUDES COOPERATIVE TAGS
Various combination of tags to achieve harvest,
Assuming success rate of 80% bull and 60% antlerless

HARVEST 3 BULLS (INCLUDING 1 FUND-RAISING TAG
BULL)

HERD SIZE	100	ELK
% BULLS LOST TO NON HUNTING CAUSES	19	%
% COWS LOST TO NON HUNTING CAUSES	5	%
% OF BULLS KILLED BY HUNTERS	27	%
% OF COWS KILLED BY HUNTERS	16	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	28	49	23	100	100	|	3	0
YEAR 1	"	30	58	25	112	150	|	8	9
YEAR 2	"	27	58	24	109	150	|	7	9
YEAR 3	"	26	57	24	108	150	|	7	9
YEAR 4	"	25	57	24	107	150	|	7	9
YEAR 5	"	25	57	24	106	150	|	7	9
YEAR 6	"	24	57	24	105	150	|	7	9
YEAR 7	"	24	57	24	105	150	|	7	9
YEAR 8	"	24	57	24	105	150	|	6	9
YEAR 9	"	24	57	24	104	150	|	6	9
YEAR 10	"	24	57	24	104	150	|	6	9

		BULL RATIO	CALF RATIO
START		57	47
POST HUNT YR	1	45	51
POST HUNT YR	2	41	50
POST HUNT YR	3	39	50
POST HUNT YR	4	38	50
POST HUNT YR	5	37	50
POST HUNT YR	6	37	50
POST HUNT YR	7	37	50
POST HUNT YR	8	37	50
POST HUNT YR	9	37	50
POST HUNT YR	10	37	50

INDEPENDENCE TULE ELK SUBHERD - SIMULATION RUNS, 2016
Ratio = 57/100/47 - Maximum Calf Survival = 50%
THIS PROGRAM CALCULATES CHANGES IN
HERD
CHARACTERISTICS BASED ON VARIOUS
HARVEST
RATES.

REDUCED HARVEST: BULL & ANTLERLESS
TO HARVEST UP TO 2 BULLS & 1 ANTLERLESS, INCLUDES COOPERATIVE TAGS
Various combination of tags to achieve harvest,
Assuming success rate of 80% bull and 60% antlerless

HERD SIZE	50	ELK
% BULLS LOST TO NON HUNTING CAUSES	19	%
% COWS LOST TO NON HUNTING CAUSES	5	%
% OF BULLS KILLED BY HUNTERS	14	%
% OF COWS KILLED BY HUNTERS	3	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	14	25	12	50	50	|	3	0
YEAR 1	"	14	29	12	55	150	|	2	1
YEAR 2	"	14	32	14	61	150	|	2	1
YEAR 3	"	16	37	16	68	150	|	2	1
YEAR 4	"	18	41	18	77	150	|	2	1
YEAR 5	"	20	47	20	87	150	|	2	1
YEAR 6	"	23	53	23	99	150	|	2	1
YEAR 7	"	26	61	26	113	150	|	2	1
YEAR 8	"	30	69	30	130	150	|	2	1
YEAR 9	"	35	79	34	149	150	|	2	1
YEAR 10	"	41	91	18	150	150	|	2	1

		BULL RATIO	CALF RATIO
START		57	47
POST HUNT YR	1	42	44
POST HUNT YR	2	40	44
POST HUNT YR	3	39	44
POST HUNT YR	4	39	44
POST HUNT YR	5	39	44
POST HUNT YR	6	40	44
POST HUNT YR	7	41	44
POST HUNT YR	8	42	44
POST HUNT YR	9	42	44
POST HUNT YR	10	43	20

LONE PINE TULE ELK SUBHERD - SIMULATION RUNS, 2016
Ratio = 83/100/48 - Maximum Calf Survival = 50%
THIS PROGRAM CALCULATES CHANGES IN
HERD
CHARACTERISTICS BASED ON VARIOUS
HARVEST
RATES.

CURRENT CONDITION: HARVEST UP TO 3 BULL TAG 1 ANTLERLESS
NO CHANGE: HARVEST UP TO 3 BULL AND 1 ANTLERLESS
Various combination of tags to achieve harvest,
Assuming success rate of 80% bull and 60% antlerless

HERD SIZE	75	ELK
% BULLS LOST TO NON HUNTING CAUSES	19	%
% COWS LOST TO NON HUNTING CAUSES	5	%
% OF BULLS KILLED BY HUNTERS	13	%
% OF COWS KILLED BY HUNTERS	3	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	27	32	16	75	75	|	2	0
YEAR 1	"	27	38	16	81	150	|	3	1
YEAR 2	"	25	43	19	87	150	|	3	1
YEAR 3	"	25	49	21	95	150	|	3	1
YEAR 4	"	26	55	24	105	150	|	3	1
YEAR 5	"	28	62	27	117	150	|	3	1
YEAR 6	"	31	71	31	132	150	|	3	1
YEAR 7	"	34	81	35	150	150	|	3	1
YEAR 8	"	39	92	19	150	150	|	3	1
YEAR 9	"	36	95	18	150	150	|	3	1
YEAR 10	"	34	98	18	150	150	|	3	1

		BULL RATIO	CALF RATIO
START		83	48
POST HUNT YR	1	62	44
POST HUNT YR	2	52	44
POST HUNT YR	3	46	44
POST HUNT YR	4	42	44
POST HUNT YR	5	40	44
POST HUNT YR	6	39	44
POST HUNT YR	7	39	44
POST HUNT YR	8	39	20
POST HUNT YR	9	35	19
POST HUNT YR	10	32	18

LONE PINE TULE ELK SUBHERD - SIMULATION RUNS, 2016
Ratio = 83/100/48 - Maximum Calf Survival = 50%
THIS PROGRAM CALCULATES CHANGES IN
HERD
CHARACTERISTICS BASED ON VARIOUS
HARVEST
RATES.

PROPOSED: HARVEST BULL & ANTLERLESS
HARVEST UP TO 7 BULL AND 5 ANTLERLESS
Various combination of tags to achieve harvest,
Assuming success rate of 80% bull and 60% antlerless

HERD SIZE	75	ELK
% BULLS LOST TO NON HUNTING CAUSES	19	%
% COWS LOST TO NON HUNTING CAUSES	5	%
% OF BULLS KILLED BY HUNTERS	30	%
% OF COWS KILLED BY HUNTERS	12	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	27	32	16	75	75	|	4	0
YEAR 1	"	25	38	16	79	150	|	7	5
YEAR 2	"	21	40	17	77	150	|	6	5
YEAR 3	"	19	41	17	77	150	|	6	5
YEAR 4	"	18	43	18	78	150	|	5	5
YEAR 5	"	17	44	19	81	150	|	5	5
YEAR 6	"	17	47	20	84	150	|	5	5
YEAR 7	"	18	49	21	88	150	|	5	5
YEAR 8	"	19	52	22	92	150	|	6	5
YEAR 9	"	19	55	23	98	150	|	6	5
YEAR 10	"	20	58	25	104	150	|	6	5

		BULL RATIO	CALF RATIO
START		83	48
POST HUNT YR	1	52	48
POST HUNT YR	2	41	48
POST HUNT YR	3	36	48
POST HUNT YR	4	33	48
POST HUNT YR	5	31	48
POST HUNT YR	6	29	48
POST HUNT YR	7	29	47
POST HUNT YR	8	28	47
POST HUNT YR	9	27	47
POST HUNT YR	10	27	47

LONE PINE TULE ELK SUBHERD - SIMULATION RUNS, 2016
Ratio = 83/100/48 - Maximum Calf Survival = 50%
THIS PROGRAM CALCULATES CHANGES IN
HERD
CHARACTERISTICS BASED ON VARIOUS
HARVEST
RATES.

INCREASED HARVEST: HARVEST BULL & ANTLERLESS
HARVEST UP TO 12 BULL AND 10 ANTLERLESS
Various combination of tags to achieve harvest,
Assuming success rate of 80% bull and 60% antlerless

HERD SIZE	75	ELK
% BULLS LOST TO NON HUNTING CAUSES	19	%
% COWS LOST TO NON HUNTING CAUSES	5	%
% OF BULLS KILLED BY HUNTERS	50	%
% OF COWS KILLED BY HUNTERS	26	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	27	32	16	75	75	|	4	0
YEAR 1	"	25	38	16	79	150	|	12	10
YEAR 2	"	17	35	14	65	150	|	8	9
YEAR 3	"	12	31	13	56	150	|	6	8
YEAR 4	"	10	28	11	50	150	|	5	7
YEAR 5	"	9	25	10	44	150	|	4	7
YEAR 6	"	8	23	9	40	150	|	4	6
YEAR 7	"	7	20	8	35	150	|	3	5
YEAR 8	"	6	18	7	32	150	|	3	5
YEAR 9	"	6	16	7	29	150	|	3	4
YEAR 10	"	5	15	6	26	150	|	2	4

		BULL RATIO	CALF RATIO
START		83	48
POST HUNT YR	1	44	57
POST HUNT YR	2	33	55
POST HUNT YR	3	27	56
POST HUNT YR	4	25	56
POST HUNT YR	5	24	56
POST HUNT YR	6	23	56
POST HUNT YR	7	23	56
POST HUNT YR	8	23	56
POST HUNT YR	9	23	56
POST HUNT YR	10	23	56

LONE PINE TULE ELK SUBHERD - SIMULATION RUNS, 2016

Ratio = 83/100/48 - Maximum Calf Survival = 50%

THIS PROGRAM CALCULATES CHANGES IN HERD CHARACTERISTICS BASED ON VARIOUS HARVEST RATES.

HERD GROWTH: HARVEST BULL & ANTLERLESS
HARVEST UP TO 10 BULL AND 9 ANTLERLESS
Various combination of tags to achieve harvest,
Assuming success rate of 80% bull and 60% antlerless

HERD SIZE	120	ELK
% BULLS LOST TO NON HUNTING CAUSES	19	%
% COWS LOST TO NON HUNTING CAUSES	5	%
% OF BULLS KILLED BY HUNTERS	25	%
% OF COWS KILLED BY HUNTERS	15	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	43	52	25	120	120	|	4	0
YEAR 1	"	42	61	26	129	150	|	10	9
YEAR 2	"	36	62	26	124	150	|	9	9
YEAR 3	"	32	62	26	121	150	|	8	9
YEAR 4	"	30	63	26	119	150	|	8	9
YEAR 5	"	29	63	27	119	150	|	7	9
YEAR 6	"	28	64	27	119	150	|	7	9
YEAR 7	"	28	64	27	120	150	|	7	9
YEAR 8	"	28	65	27	120	150	|	7	9
YEAR 9	"	28	66	28	122	150	|	7	9
YEAR 10	"	28	67	28	123	150	|	7	9

		BULL RATIO	CALF RATIO
START		83	48
POST HUNT YR	1	60	50
POST HUNT YR	2	51	50
POST HUNT YR	3	46	50
POST HUNT YR	4	43	50
POST HUNT YR	5	41	50
POST HUNT YR	6	39	50
POST HUNT YR	7	39	49
POST HUNT YR	8	38	49
POST HUNT YR	9	38	49
POST HUNT YR	10	37	49

LONE PINE TULE ELK SUBHERD - SIMULATION RUNS, 2016

Ratio = 83/100/48 - Maximum Calf Survival = 50%

THIS PROGRAM CALCULATES CHANGES IN HERD CHARACTERISTICS BASED ON VARIOUS HARVEST RATES.

REDUCED HARVEST: HARVEST BULL & ANTLERLESS
HARVEST UP TO 3 BULL AND 3 ANTLERLESS
Various combination of tags to achieve harvest,
Assuming success rate of 80% bull and 60% antlerless

HERD SIZE	75	ELK
% BULLS LOST TO NON HUNTING CAUSES	19	%
% COWS LOST TO NON HUNTING CAUSES	5	%
% OF BULLS KILLED BY HUNTERS	12	%
% OF COWS KILLED BY HUNTERS	6	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	27	32	16	75	75	|	4	0
YEAR 1	"	25	38	16	79	150	|	3	2
YEAR 2	"	24	42	18	84	150	|	3	3
YEAR 3	"	25	46	20	90	150	|	3	3
YEAR 4	"	26	50	22	97	150	|	3	3
YEAR 5	"	27	55	24	106	150	|	3	3
YEAR 6	"	29	61	26	117	150	|	3	3
YEAR 7	"	31	68	29	129	150	|	3	3
YEAR 8	"	34	76	33	143	150	|	3	3
YEAR 9	"	38	85	26	150	150	|	3	3
YEAR 10	"	39	91	20	150	150	|	3	3

		BULL RATIO	CALF RATIO
START		83	48
POST HUNT YR	1	61	45
POST HUNT YR	2	54	46
POST HUNT YR	3	50	46
POST HUNT YR	4	47	45
POST HUNT YR	5	45	45
POST HUNT YR	6	43	45
POST HUNT YR	7	42	45
POST HUNT YR	8	42	45
POST HUNT YR	9	42	32
POST HUNT YR	10	40	23

Tinemaha - SIMULATION RUNS, 2016

Ratio = 300/100/33 - Maximum Calf Survival = 50%

THIS PROGRAM CALCULATES CHANGES IN HERD CHARACTERISTICS BASED ON VARIOUS HARVEST RATES.

CURRENT CONDITION: UP TO 2 BULLS & 0 ANTLERLESS
TO HARVEST UP TO 2 BULL AND 0 ANTLERLESS
Various combination of tags to achieve harvest,
Assuming success rate of 50% bull

HERD SIZE	17	ELK
% BULLS LOST TO NON HUNTING CAUSES	21	%
% COWS LOST TO NON HUNTING CAUSES	7	%
% OF BULLS KILLED BY HUNTERS	19	%
% OF COWS KILLED BY HUNTERS	0	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	12	4	1	17	17	|	2	0
YEAR 1	"	8	4	2	14	150	|	2	0
YEAR 2	"	6	5	2	13	150	|	1	0
YEAR 3	"	5	6	2	13	150	|	1	0
YEAR 4	"	4	6	3	13	150	|	1	0
YEAR 5	"	4	7	3	14	150	|	1	0
YEAR 6	"	4	8	4	15	150	|	1	0
YEAR 7	"	4	9	4	17	150	|	1	0
YEAR 8	"	4	10	5	19	150	|	1	0
YEAR 9	"	4	12	5	21	150	|	1	0
YEAR 10	"	5	13	6	24	150	|	1	0

		BULL RATIO	CALF RATIO
START		300	33
POST HUNT YR	1	157	46
POST HUNT YR	2	101	44
POST HUNT YR	3	69	44
POST HUNT YR	4	51	44
POST HUNT YR	5	41	44
POST HUNT YR	6	36	44
POST HUNT YR	7	33	44
POST HUNT YR	8	31	44
POST HUNT YR	9	30	44
POST HUNT YR	10	29	44

Tinemaha - SIMULATION RUNS, 2016
Ratio = 300/100/33 - Maximum Calf Survival = 50%
THIS PROGRAM CALCULATES CHANGES IN HERD
CHARACTERISTICS BASED ON VARIOUS HARVEST
RATES.

PROPOSED: BULLS & ANTLERLESS
TO HARVEST UP TO 1 BULL AND 0ANTLERLESS
Various combination of tags to achieve harvest,
Assuming success rate of 50% bull

HERD SIZE	17	ELK
% BULLS LOST TO NON HUNTING CAUSES	21	%
% COWS LOST TO NON HUNTING CAUSES	7	%
% OF BULLS KILLED BY HUNTERS	10	%
% OF COWS KILLED BY HUNTERS	0	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	12	4	1	17	17	|	1	0
YEAR 1	"	9	4	2	15	150	|	1	0
YEAR 2	"	7	5	2	14	150	|	1	0
YEAR 3	"	6	6	2	14	150	|	1	0
YEAR 4	"	5	6	3	14	150	|	1	0
YEAR 5	"	4	7	3	14	150	|	1	0
YEAR 6	"	4	8	4	15	150	|	1	0
YEAR 7	"	4	9	4	17	150	|	1	0
YEAR 8	"	4	10	5	19	150	|	1	0
YEAR 9	"	4	12	5	21	150	|	1	0
YEAR 10	"	5	13	6	24	150	|	1	0

		BULL RATIO	CALF RATIO
START		300	33
POST HUNT YR	1	191	46
POST HUNT YR	2	129	44
POST HUNT YR	3	89	44
POST HUNT YR	4	63	44
POST HUNT YR	5	46	44
POST HUNT YR	6	36	44
POST HUNT YR	7	31	44
POST HUNT YR	8	28	44
POST HUNT YR	9	27	44
POST HUNT YR	10	28	44

Tinemaha - SIMULATION RUNS, 2016

Ratio = 300/100/33 - Maximum Calf Survival = 50%

THIS PROGRAM CALCULATES CHANGES IN HERD CHARACTERISTICS BASED ON VARIOUS HARVEST RATES.

INCREASED HARVEST: BULLS & ANTLERLESS
TO HARVEST UP TO 2 BULL AND 0 ANTLERLESS
Various combination of tags to achieve harvest,
Assuming success rate of 50% bull

HERD SIZE	17	ELK
% BULLS LOST TO NON HUNTING CAUSES	21	%
% COWS LOST TO NON HUNTING CAUSES	7	%
% OF BULLS KILLED BY HUNTERS	20	%
% OF COWS KILLED BY HUNTERS	0	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	12	4	1	17	17	|	1	0
YEAR 1	"	9	4	2	15	150	|	2	0
YEAR 2	"	6	5	2	13	150	|	1	0
YEAR 3	"	5	6	2	13	150	|	1	0
YEAR 4	"	4	6	3	13	150	|	1	0
YEAR 5	"	4	7	3	14	150	|	1	0
YEAR 6	"	4	8	4	15	150	|	1	0
YEAR 7	"	4	9	4	17	150	|	1	0
YEAR 8	"	4	10	5	19	150	|	1	0
YEAR 9	"	4	12	5	21	150	|	1	0
YEAR 10	"	5	13	6	24	150	|	1	0

		BULL RATIO	CALF RATIO
START		300	33
POST HUNT YR	1	170	46
POST HUNT YR	2	106	44
POST HUNT YR	3	72	44
POST HUNT YR	4	52	44
POST HUNT YR	5	41	44
POST HUNT YR	6	35	44
POST HUNT YR	7	32	44
POST HUNT YR	8	30	44
POST HUNT YR	9	29	44
POST HUNT YR	10	28	44

Tinemaha - SIMULATION RUNS, 2016

Ratio = 300/100/33 - Maximum Calf Survival = 50%

THIS PROGRAM CALCULATES CHANGES IN HERD CHARACTERISTICS BASED ON VARIOUS HARVEST RATES.

HERD GROWTH: BULLS & ANTLERLESS
TO HARVEST UP TO 4 BULL AND 1 ANTLERLESS
Various combination of tags to achieve harvest,
Assuming success rate of 50% bull

HERD SIZE	70	ELK
% BULLS LOST TO NON HUNTING CAUSES	21	%
% COWS LOST TO NON HUNTING CAUSES	7	%
% OF BULLS KILLED BY HUNTERS	10	%
% OF COWS KILLED BY HUNTERS	5	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	48	16	5	70	70	|	1	0
YEAR 1	"	40	18	8	65	150	|	4	1
YEAR 2	"	31	19	8	59	150	|	3	1
YEAR 3	"	26	21	9	56	150	|	3	1
YEAR 4	"	22	23	10	55	150	|	2	1
YEAR 5	"	19	25	11	55	150	|	2	1
YEAR 6	"	18	27	12	57	150	|	2	1
YEAR 7	"	18	29	13	60	150	|	2	1
YEAR 8	"	17	32	14	63	150	|	2	1
YEAR 9	"	18	35	15	68	150	|	2	1
YEAR 10	"	19	38	17	73	150	|	2	1

		BULL RATIO	CALF RATIO
START		300	33
POST HUNT YR	1	214	49
POST HUNT YR	2	154	45
POST HUNT YR	3	116	46
POST HUNT YR	4	91	46
POST HUNT YR	5	74	46
POST HUNT YR	6	64	46
POST HUNT YR	7	57	46
POST HUNT YR	8	52	46
POST HUNT YR	9	49	46
POST HUNT YR	10	46	46

Tinemaha - SIMULATION RUNS, 2016

Ratio = 300/100/33 - Maximum Calf Survival = 50%

THIS PROGRAM CALCULATES CHANGES IN HERD CHARACTERISTICS BASED ON VARIOUS HARVEST RATES.

REDUCED HARVEST: BULLS & ANTLERLESS
TO HARVEST UP TO 0 BULL AND 0 ANTLERLESS
Various combination of tags to achieve harvest,
Assuming success rate of 50% bull

HERD SIZE	17	ELK
% BULLS LOST TO NON HUNTING CAUSES	21	%
% COWS LOST TO NON HUNTING CAUSES	7	%
% OF BULLS KILLED BY HUNTERS	0	%
% OF COWS KILLED BY HUNTERS	0	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	12	4	1	17	17	|	1	0
YEAR 1	"	9	4	2	15	150	|	0	0
YEAR 2	"	8	5	2	15	150	|	0	0
YEAR 3	"	7	6	2	15	150	|	0	0
YEAR 4	"	7	6	3	16	150	|	0	0
YEAR 5	"	6	7	3	17	150	|	0	0
YEAR 6	"	6	8	4	18	150	|	0	0
YEAR 7	"	6	9	4	19	150	|	0	0
YEAR 8	"	7	10	5	22	150	|	0	0
YEAR 9	"	7	12	5	24	150	|	0	0
YEAR 10	"	8	13	6	27	150	|	0	0

		BULL RATIO	CALF RATIO
START		300	33
POST HUNT YR	1	212	46
POST HUNT YR	2	162	44
POST HUNT YR	3	128	44
POST HUNT YR	4	105	44
POST HUNT YR	5	88	44
POST HUNT YR	6	77	44
POST HUNT YR	7	69	44
POST HUNT YR	8	63	44
POST HUNT YR	9	59	44
POST HUNT YR	10	57	44

Tinemaha Mountain - SIMULATION RUNS, 2016
Ratio = 300/100/40 - Maximum Calf Survival = 50%
THIS PROGRAM CALCULATES CHANGES IN HERD
CHARACTERISTICS BASED ON VARIOUS
HARVEST
RATES.

CURRENT CONDITION: BULL
TO HARVEST UP TO 2 BULL AND 0 ANTLERLESS
Various combination of tags to achieve harvest,
Assuming success rate of 50% bull

HERD SIZE	40	ELK
% BULLS LOST TO NON HUNTING CAUSES	15	%
% COWS LOST TO NON HUNTING CAUSES	9	%
% OF BULLS KILLED BY HUNTERS	8	%
% OF COWS KILLED BY HUNTERS	0	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	27	9	4	40	40	|	0	0
YEAR 1	"	25	10	5	39	100	|	2	0
YEAR 2	"	21	11	5	37	100	|	2	0
YEAR 3	"	19	12	6	36	100	|	2	0
YEAR 4	"	16	14	6	36	100	|	2	0
YEAR 5	"	15	15	7	37	100	|	2	0
YEAR 6	"	14	17	8	39	100	|	2	0
YEAR 7	"	13	19	9	41	100	|	2	0
YEAR 8	"	13	21	10	44	100	|	2	0
YEAR 9	"	14	24	11	48	100	|	2	0
YEAR 10	"	14	26	12	53	100	|	2	0

		BULL RATIO	CALF RATIO
START		300	40
POST HUNT YR	1	229	46
POST HUNT YR	2	174	45
POST HUNT YR	3	134	45
POST HUNT YR	4	105	45
POST HUNT YR	5	84	45
POST HUNT YR	6	70	45
POST HUNT YR	7	60	45
POST HUNT YR	8	54	45
POST HUNT YR	9	50	45
POST HUNT YR	10	47	45

Tinemaha Mountain - SIMULATION RUNS, 2016
Ratio = 300/100/40 - Maximum Calf Survival = 50%
THIS PROGRAM CALCULATES CHANGES IN HERD
CHARACTERISTICS BASED ON VARIOUS
HARVEST
RATES.

PROPOSED: BULL
TO HARVEST UP TO 3 BULL AND 0 ANTLERLESS
Various combination of tags to achieve harvest,
Assuming success rate of 50% bull

HERD SIZE	40	ELK
% BULLS LOST TO NON HUNTING CAUSES	15	%
% COWS LOST TO NON HUNTING CAUSES	9	%
% OF BULLS KILLED BY HUNTERS	14	%
% OF COWS KILLED BY HUNTERS	0	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	27	9	4	40	40	|	0	0
YEAR 1	"	25	10	5	39	100	|	3	0
YEAR 2	"	20	11	5	36	100	|	3	0
YEAR 3	"	17	12	6	35	100	|	2	0
YEAR 4	"	15	14	6	35	100	|	2	0
YEAR 5	"	13	15	7	36	100	|	2	0
YEAR 6	"	13	17	8	37	100	|	2	0
YEAR 7	"	13	19	9	40	100	|	2	0
YEAR 8	"	13	21	10	44	100	|	2	0
YEAR 9	"	13	24	11	48	100	|	2	0
YEAR 10	"	14	26	12	52	100	|	2	0

		BULL RATIO	CALF RATIO
START		300	40
POST HUNT YR	1	214	46
POST HUNT YR	2	155	45
POST HUNT YR	3	116	45
POST HUNT YR	4	91	45
POST HUNT YR	5	74	45
POST HUNT YR	6	64	45
POST HUNT YR	7	56	45
POST HUNT YR	8	52	45
POST HUNT YR	9	49	45
POST HUNT YR	10	47	45

Tinemaha Mountain - SIMULATION RUNS, 2016
Ratio = 300/100/40 - Maximum Calf Survival = 50%
THIS PROGRAM CALCULATES CHANGES IN HERD
CHARACTERISTICS BASED ON VARIOUS
HARVEST
RATES.

INCREASED HARVEST: BULL
TO HARVEST UP TO 6 BULL AND 0 ANTLERLESS
Various combination of tags to achieve harvest,
Assuming success rate of 50% bull

HERD SIZE	40	ELK
% BULLS LOST TO NON HUNTING CAUSES	15	%
% COWS LOST TO NON HUNTING CAUSES	9	%
% OF BULLS KILLED BY HUNTERS	23	%
% OF COWS KILLED BY HUNTERS	0	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	27	9	4	40	40	|	0	0
YEAR 1	"	25	10	5	39	100	|	6	0
YEAR 2	"	18	11	5	34	100	|	4	0
YEAR 3	"	14	12	6	32	100	|	3	0
YEAR 4	"	12	14	6	31	100	|	3	0
YEAR 5	"	10	15	7	32	100	|	2	0
YEAR 6	"	10	17	8	34	100	|	2	0
YEAR 7	"	10	19	9	37	100	|	2	0
YEAR 8	"	10	21	10	41	100	|	2	0
YEAR 9	"	11	24	11	45	100	|	2	0
YEAR 10	"	11	26	12	50	100	|	3	0

		BULL RATIO	CALF RATIO
START		300	40
POST HUNT YR	1	192	46
POST HUNT YR	2	126	45
POST HUNT YR	3	87	45
POST HUNT YR	4	64	45
POST HUNT YR	5	51	45
POST HUNT YR	6	43	45
POST HUNT YR	7	39	45
POST HUNT YR	8	36	45
POST HUNT YR	9	34	45
POST HUNT YR	10	33	45

Tinemaha Mountain - SIMULATION RUNS, 2016
Ratio = 200/100/40 - Maximum Calf Survival = 50%
THIS PROGRAM CALCULATES CHANGES IN HERD
CHARACTERISTICS BASED ON VARIOUS
HARVEST
RATES.

HERD GROWTH: BULL & ANTLERLESS
TO HARVEST UP TO 6 BULL AND 2 ANTLERLESS
Various combination of tags to achieve harvest,
Assuming success rate of 50% bull

HERD SIZE	80	ELK
% BULLS LOST TO NON HUNTING CAUSES	15	%
% COWS LOST TO NON HUNTING CAUSES	9	%
% OF BULLS KILLED BY HUNTERS	14	%
% OF COWS KILLED BY HUNTERS	6.5	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	47	24	9	80	80	|	0	0
YEAR 1	"	44	26	12	81	100	|	6	2
YEAR 2	"	37	27	12	76	100	|	5	2
YEAR 3	"	32	29	13	74	100	|	5	2
YEAR 4	"	29	30	13	73	100	|	4	2
YEAR 5	"	27	32	14	73	100	|	4	2
YEAR 6	"	26	33	15	74	100	|	4	2
YEAR 7	"	25	35	16	76	100	|	4	2
YEAR 8	"	25	37	16	78	100	|	3	2
YEAR 9	"	25	39	17	82	100	|	4	2
YEAR 10	"	26	41	18	85	100	|	4	2

		BULL RATIO	CALF RATIO
START		200	40
POST HUNT YR	1	158	49
POST HUNT YR	2	126	47
POST HUNT YR	3	104	48
POST HUNT YR	4	88	47
POST HUNT YR	5	78	47
POST HUNT YR	6	71	47
POST HUNT YR	7	65	47
POST HUNT YR	8	62	47
POST HUNT YR	9	59	47
POST HUNT YR	10	57	47

Tinemaha Mountain - SIMULATION RUNS, 2016
Ratio = 300/100/40 - Maximum Calf Survival = 50%
THIS PROGRAM CALCULATES CHANGES IN HERD
CHARACTERISTICS BASED ON VARIOUS
HARVEST
RATES.

REDUCED HARVEST: BULL
TO HARVEST UP TO 1 BULL AND 0 ANTLERLESS
Various combination of tags to achieve harvest,
Assuming success rate of 50% bull

HERD SIZE	40	ELK
% BULLS LOST TO NON HUNTING CAUSES	15	%
% COWS LOST TO NON HUNTING CAUSES	9	%
% OF BULLS KILLED BY HUNTERS	6	%
% OF COWS KILLED BY HUNTERS	0	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	27	9	4	40	40	|	0	0
YEAR 1	"	25	10	5	39	100	|	1	0
YEAR 2	"	22	11	5	38	100	|	1	0
YEAR 3	"	19	12	6	37	100	|	1	0
YEAR 4	"	18	14	6	38	100	|	1	0
YEAR 5	"	17	15	7	39	100	|	1	0
YEAR 6	"	16	17	8	41	100	|	1	0
YEAR 7	"	16	19	9	44	100	|	1	0
YEAR 8	"	17	21	10	47	100	|	1	0
YEAR 9	"	17	24	11	52	100	|	1	0
YEAR 10	"	18	26	12	57	100	|	1	0

		BULL RATIO	CALF RATIO
START		300	40
POST HUNT YR	1	234	46
POST HUNT YR	2	184	45
POST HUNT YR	3	148	45
POST HUNT YR	4	122	45
POST HUNT YR	5	104	45
POST HUNT YR	6	90	45
POST HUNT YR	7	81	45
POST HUNT YR	8	74	45
POST HUNT YR	9	69	45
POST HUNT YR	10	66	45

West Tinemaha - SIMULATION RUNS, 2016
Ratio = 100/100/57 - Maximum Calf Survival = 50%
THIS PROGRAM CALCULATES CHANGES IN HERD
CHARACTERISTICS BASED ON VARIOUS HARVEST
RATES.

CURRENT CONDITION: UP TO 2 BULLS & 0 ANTLERLESS
TO HARVEST UP TO 2 BULL AND 0 ANTLERLESS
Various combination of tags to achieve harvest,
Assuming success rate of 50% bull

HERD SIZE	20	ELK
% BULLS LOST TO NON HUNTING CAUSES	21	%
% COWS LOST TO NON HUNTING CAUSES	7	%
% OF BULLS KILLED BY HUNTERS	25	%
% OF COWS KILLED BY HUNTERS	0	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	8	8	4	20	20	|	2	0
YEAR 1	"	6	9	4	20	150	|	2	0
YEAR 2	"	5	10	5	20	150	|	2	0
YEAR 3	"	5	12	5	22	150	|	2	0
YEAR 4	"	5	13	6	24	150	|	2	0
YEAR 5	"	5	15	7	27	150	|	2	0
YEAR 6	"	5	17	8	30	150	|	2	0
YEAR 7	"	6	20	9	34	150	|	2	0
YEAR 8	"	7	22	10	39	150	|	2	0
YEAR 9	"	8	25	11	45	150	|	2	0
YEAR 10	"	10	29	13	51	150	|	2	0

		BULL RATIO	CALF RATIO
START		100	57
POST HUNT YR	1	51	42
POST HUNT YR	2	35	44
POST HUNT YR	3	27	44
POST HUNT YR	4	22	44
POST HUNT YR	5	20	44
POST HUNT YR	6	21	44
POST HUNT YR	7	22	44
POST HUNT YR	8	23	44
POST HUNT YR	9	25	44
POST HUNT YR	10	27	44

West Tinemaha - SIMULATION RUNS, 2016
Ratio = 100/100/57 - Maximum Calf Survival = 50%
THIS PROGRAM CALCULATES CHANGES IN HERD
CHARACTERISTICS BASED ON VARIOUS HARVEST
RATES.

PROPOSED: BULLS & ANTLERLESS
TO HARVEST UP TO 2 BULL AND 0 ANTLERLESS
Various combination of tags to achieve harvest,
Assuming success rate of 70% bull AND 60% antlerless

HERD SIZE	20	ELK
% BULLS LOST TO NON HUNTING CAUSES	21	%
% COWS LOST TO NON HUNTING CAUSES	7	%
% OF BULLS KILLED BY HUNTERS	28	%
% OF COWS KILLED BY HUNTERS	0	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	8	8	4	20	20	|	2	0
YEAR 1	"	6	9	4	20	150	|	2	0
YEAR 2	"	5	10	5	20	150	|	1	0
YEAR 3	"	5	12	5	22	150	|	1	0
YEAR 4	"	5	13	6	24	150	|	1	0
YEAR 5	"	5	15	7	27	150	|	1	0
YEAR 6	"	6	17	8	31	150	|	2	0
YEAR 7	"	6	20	9	35	150	|	2	0
YEAR 8	"	7	22	10	39	150	|	2	0
YEAR 9	"	8	25	11	44	150	|	2	0
YEAR 10	"	9	29	13	50	150	|	2	0

		BULL RATIO	CALF RATIO
START		100	57
POST HUNT YR	1	49	42
POST HUNT YR	2	35	44
POST HUNT YR	3	29	44
POST HUNT YR	4	25	44
POST HUNT YR	5	24	44
POST HUNT YR	6	23	44
POST HUNT YR	7	23	44
POST HUNT YR	8	22	44
POST HUNT YR	9	22	44
POST HUNT YR	10	22	44

West Tinemaha - SIMULATION RUNS, 2016
Ratio = 100/100/57 - Maximum Calf Survival = 50%
THIS PROGRAM CALCULATES CHANGES IN HERD
CHARACTERISTICS BASED ON VARIOUS HARVEST
RATES.

INCREASED HARVEST: BULLS & ANTLERLESS
TO HARVEST UP TO 4 BULL AND 0 ANTLERLESS
Various combination of tags to achieve harvest,
Assuming success rate of 70% bull

HERD SIZE	20	ELK
% BULLS LOST TO NON HUNTING CAUSES	18	%
% COWS LOST TO NON HUNTING CAUSES	7	%
% OF BULLS KILLED BY HUNTERS	55	%
% OF COWS KILLED BY HUNTERS	0	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	8	8	4	20	20	|	2	0
YEAR 1	"	7	9	4	20	150	|	4	0
YEAR 2	"	4	10	5	19	150	|	2	0
YEAR 3	"	3	12	5	21	150	|	2	0
YEAR 4	"	3	13	6	23	150	|	2	0
YEAR 5	"	4	15	7	26	150	|	2	0
YEAR 6	"	4	17	8	29	150	|	2	0
YEAR 7	"	5	20	9	33	150	|	3	0
YEAR 8	"	5	22	10	38	150	|	3	0
YEAR 9	"	6	25	11	43	150	|	3	0
YEAR 10	"	7	29	13	48	150	|	4	0

		BULL RATIO	CALF RATIO
START		100	57
POST HUNT YR	1	32	42
POST HUNT YR	2	17	44
POST HUNT YR	3	13	44
POST HUNT YR	4	11	44
POST HUNT YR	5	11	44
POST HUNT YR	6	11	44
POST HUNT YR	7	11	44
POST HUNT YR	8	11	44
POST HUNT YR	9	11	44
POST HUNT YR	10	11	44

West Tinemaha - SIMULATION RUNS, 2016
Ratio = 19/100/21 - Maximum Calf Survival = 50%
THIS PROGRAM CALCULATES CHANGES IN HERD
CHARACTERISTICS BASED ON VARIOUS HARVEST
RATES.

HERD GROWTH: BULLS & ANTLERLESS
TO HARVEST UP TO 5 BULL AND 8 ANTLERLESS
Various combination of tags to achieve harvest,
Assuming success rate of 70% bull AND 60% antlerless

HERD SIZE	80	ELK
% BULLS LOST TO NON HUNTING CAUSES	21	%
% COWS LOST TO NON HUNTING CAUSES	7	%
% OF BULLS KILLED BY HUNTERS	42	%
% OF COWS KILLED BY HUNTERS	14	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	11	57	12	80	80	|	2	0
YEAR 1	"	12	59	29	99	150	|	5	8
YEAR 2	"	17	60	25	102	150	|	5	8
YEAR 3	"	19	60	26	105	150	|	5	8
YEAR 4	"	22	60	26	107	150	|	5	8
YEAR 5	"	23	60	26	109	150	|	5	8
YEAR 6	"	25	60	26	110	150	|	5	8
YEAR 7	"	26	60	26	111	150	|	5	8
YEAR 8	"	27	60	26	112	150	|	5	8
YEAR 9	"	27	60	26	112	150	|	5	8
YEAR 10	"	28	59	26	113	150	|	5	8

		BULL RATIO	CALF RATIO
START		19	21
POST HUNT YR	1	13	57
POST HUNT YR	2	23	49
POST HUNT YR	3	28	50
POST HUNT YR	4	32	50
POST HUNT YR	5	36	50
POST HUNT YR	6	38	50
POST HUNT YR	7	41	50
POST HUNT YR	8	42	50
POST HUNT YR	9	44	50
POST HUNT YR	10	45	50

West Tinemaha - SIMULATION RUNS, 2016
Ratio = 100/100/57 - Maximum Calf Survival = 50%
THIS PROGRAM CALCULATES CHANGES IN HERD
CHARACTERISTICS BASED ON VARIOUS HARVEST
RATES.

REDUCED HARVEST: BULLS & ANTLERLESS
TO HARVEST UP TO 1 BULL AND 0 ANTLERLESS
Various combination of tags to achieve harvest,
Assuming success rate of 70% bull AND 60% antlerless

HERD SIZE	20	ELK
% BULLS LOST TO NON HUNTING CAUSES	21	%
% COWS LOST TO NON HUNTING CAUSES	7	%
% OF BULLS KILLED BY HUNTERS	12	%
% OF COWS KILLED BY HUNTERS	0	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	8	8	4	20	20	|	2	0
YEAR 1	"	6	9	4	20	150	|	1	0
YEAR 2	"	6	10	5	21	150	|	1	0
YEAR 3	"	6	12	5	23	150	|	1	0
YEAR 4	"	6	13	6	26	150	|	1	0
YEAR 5	"	7	15	7	29	150	|	1	0
YEAR 6	"	7	17	8	32	150	|	1	0
YEAR 7	"	8	20	9	36	150	|	1	0
YEAR 8	"	9	22	10	41	150	|	1	0
YEAR 9	"	10	25	11	47	150	|	1	0
YEAR 10	"	12	29	13	53	150	|	1	0

		BULL RATIO	CALF RATIO
START		100	57
POST HUNT YR	1	60	42
POST HUNT YR	2	50	44
POST HUNT YR	3	44	44
POST HUNT YR	4	41	44
POST HUNT YR	5	38	44
POST HUNT YR	6	37	44
POST HUNT YR	7	36	44
POST HUNT YR	8	36	44
POST HUNT YR	9	35	44
POST HUNT YR	10	35	44

WHITNEY TULE ELK SUBHERD - SIMULATION RUNS, 2016
Ratio = 40/100/16 - Maximum Calf Survival = 50%
THIS PROGRAM CALCULATES CHANGES IN
HERD
CHARACTERISTICS BASED ON VARIOUS
HARVEST
RATES.

CURRENT CONDITION: HARVEST UP TO 2 BULL
NO CHANGE: HARVEST UP TO 2 BULL
Various combination of tags to achieve harvest,
Assuming success rate of 80% bull

HERD SIZE	20	ELK
% BULLS LOST TO NON HUNTING CAUSES	19	%
% COWS LOST TO NON HUNTING CAUSES	5	%
% OF BULLS KILLED BY HUNTERS	50	%
% OF COWS KILLED BY HUNTERS	0	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	5	13	2	20	20	|	2	0
YEAR 1	"	3	13	6	23	150	|	2	0
YEAR 2	"	4	16	7	26	150	|	2	0
YEAR 3	"	5	18	8	30	150	|	2	0
YEAR 4	"	5	21	9	35	150	|	2	0
YEAR 5	"	7	24	10	41	150	|	2	0
YEAR 6	"	8	28	12	48	150	|	2	0
YEAR 7	"	10	32	14	56	150	|	2	0
YEAR 8	"	12	37	16	65	150	|	2	0
YEAR 9	"	15	43	18	76	150	|	2	0
YEAR 10	"	18	49	21	89	150	|	2	0

		BULL RATIO	CALF RATIO
START		40	16
POST HUNT YR	1	13	49
POST HUNT YR	2	15	42
POST HUNT YR	3	16	43
POST HUNT YR	4	18	43
POST HUNT YR	5	21	43
POST HUNT YR	6	24	43
POST HUNT YR	7	26	43
POST HUNT YR	8	29	43
POST HUNT YR	9	32	43
POST HUNT YR	10	34	43

WHITNEY TULE ELK SUBHERD - SIMULATION RUNS, 2016
Ratio = 40/100/16 - Maximum Calf Survival = 50%
THIS PROGRAM CALCULATES CHANGES IN
HERD
CHARACTERISTICS BASED ON VARIOUS
HARVEST
RATES.

PROPOSED: HARVEST BULL
HARVEST UP TO 2 BULL AND 0 ANTLERLESS
Various combination of tags to achieve harvest,
Assuming success rate of 80% bull

(INCLUDING 1 FUND-RAISING TAG BULL)

HERD SIZE	20	ELK
% BULLS LOST TO NON HUNTING CAUSES	19	%
% COWS LOST TO NON HUNTING CAUSES	5	%
% OF BULLS KILLED BY HUNTERS	45	%
% OF COWS KILLED BY HUNTERS	0	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	5	13	2	20	20	|	2	0
YEAR 1	"	3	13	6	23	150	|	2	0
YEAR 2	"	4	16	7	26	150	|	2	0
YEAR 3	"	5	18	8	30	150	|	2	0
YEAR 4	"	6	21	9	35	150	|	2	0
YEAR 5	"	7	24	10	41	150	|	2	0
YEAR 6	"	9	28	12	48	150	|	2	0
YEAR 7	"	11	32	14	56	150	|	2	0
YEAR 8	"	13	37	16	66	150	|	2	0
YEAR 9	"	16	43	18	77	150	|	2	0
YEAR 10	"	19	49	21	90	150	|	2	0

		BULL RATIO	CALF RATIO
START		40	16
POST HUNT YR	1	14	49
POST HUNT YR	2	17	42
POST HUNT YR	3	18	43
POST HUNT YR	4	21	43
POST HUNT YR	5	23	43
POST HUNT YR	6	26	43
POST HUNT YR	7	29	43
POST HUNT YR	8	31	43
POST HUNT YR	9	33	43
POST HUNT YR	10	36	43

WHITNEY TULE ELK SUBHERD - SIMULATION RUNS, 2016
Ratio = 40/100/16 - Maximum Calf Survival = 50%
THIS PROGRAM CALCULATES CHANGES IN
HERD
CHARACTERISTICS BASED ON VARIOUS
HARVEST
RATES.

INCREASED HARVEST: HARVEST BULL & ANTLERLESS
HARVEST UP TO 4 BULL AND 1 ANTLERLESS
Various combination of tags to achieve harvest,
Assuming success rate of 80% bull and 60% antlerless

(INCLUDING 1 FUND-RAISING TAG BULL)

HERD SIZE	20	ELK
% BULLS LOST TO NON HUNTING CAUSES	19	%
% COWS LOST TO NON HUNTING CAUSES	5	%
% OF BULLS KILLED BY HUNTERS	75	%
% OF COWS KILLED BY HUNTERS	10	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	5	13	2	20	20	|	2	0
YEAR 1	"	3	13	6	23	150	|	3	1
YEAR 2	"	3	14	6	23	150	|	2	1
YEAR 3	"	3	15	6	25	150	|	2	1
YEAR 4	"	3	16	7	26	150	|	2	1
YEAR 5	"	3	17	7	28	150	|	3	1
YEAR 6	"	4	18	8	30	150	|	3	1
YEAR 7	"	4	20	8	32	150	|	3	1
YEAR 8	"	4	21	9	35	150	|	3	1
YEAR 9	"	5	23	10	38	150	|	3	1
YEAR 10	"	5	26	11	41	150	|	3	1

		BULL RATIO	CALF RATIO
START		40	16
POST HUNT YR	1	7	54
POST HUNT YR	2	6	46
POST HUNT YR	3	6	47
POST HUNT YR	4	6	47
POST HUNT YR	5	5	47
POST HUNT YR	6	5	46
POST HUNT YR	7	5	46
POST HUNT YR	8	5	46
POST HUNT YR	9	5	46
POST HUNT YR	10	6	45

WHITNEY TULE ELK SUBHERD - SIMULATION RUNS, 2016
Ratio = 40/100/16 - Maximum Calf Survival = 50%
THIS PROGRAM CALCULATES CHANGES IN
HERD
CHARACTERISTICS BASED ON VARIOUS
HARVEST
RATES.

HERD GROWTH: HARVEST BULL & ANTLERLESS
HARVEST UP TO 6 BULL AND 8 ANTLERLESS
Various combination of tags to achieve harvest,
Assuming success rate of 80% bull and 60% antlerless

(INCLUDING 1 FUND-RAISING TAG BULL)

HERD SIZE	80	ELK
% BULLS LOST TO NON HUNTING CAUSES	19	%
% COWS LOST TO NON HUNTING CAUSES	5	%
% OF BULLS KILLED BY HUNTERS	31	%
% OF COWS KILLED BY HUNTERS	15	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	21	51	8	80	80	|	2	0
YEAR 1	"	18	53	26	97	150	|	6	8
YEAR 2	"	21	55	22	98	150	|	6	8
YEAR 3	"	21	55	23	99	150	|	6	8
YEAR 4	"	21	55	23	99	150	|	6	8
YEAR 5	"	21	56	23	100	150	|	6	8
YEAR 6	"	21	56	24	101	150	|	6	8
YEAR 7	"	22	57	24	102	150	|	6	8
YEAR 8	"	22	57	24	103	150	|	6	8
YEAR 9	"	22	58	24	104	150	|	6	8
YEAR 10	"	23	58	25	105	150	|	6	8

		BULL RATIO	CALF RATIO
START		40	16
POST HUNT YR	1	28	57
POST HUNT YR	2	31	48
POST HUNT YR	3	30	50
POST HUNT YR	4	31	50
POST HUNT YR	5	31	50
POST HUNT YR	6	32	50
POST HUNT YR	7	32	50
POST HUNT YR	8	32	50
POST HUNT YR	9	33	49
POST HUNT YR	10	33	49

WHITNEY TULE ELK SUBHERD - SIMULATION RUNS, 2016
Ratio = 40/100/16 - Maximum Calf Survival = 50%
THIS PROGRAM CALCULATES CHANGES IN
HERD
CHARACTERISTICS BASED ON VARIOUS
HARVEST
RATES.

REDUCED HARVEST: HARVEST BULL
HARVEST UP TO 1 BULL AND 0 ANTLERLESS
Various combination of tags to achieve harvest,
Assuming success rate of 80% bull

(INCLUDING 1 FUND-RAISING TAG BULL)

HERD SIZE	20	ELK
% BULLS LOST TO NON HUNTING CAUSES	19	%
% COWS LOST TO NON HUNTING CAUSES	5	%
% OF BULLS KILLED BY HUNTERS	20	%
% OF COWS KILLED BY HUNTERS	0	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	5	13	2	20	20	|	2	0
YEAR 1	"	3	13	6	23	150	|	1	0
YEAR 2	"	5	16	7	27	150	|	1	0
YEAR 3	"	6	18	8	32	150	|	1	0
YEAR 4	"	7	21	9	37	150	|	1	0
YEAR 5	"	9	24	10	43	150	|	1	0
YEAR 6	"	11	28	12	51	150	|	1	0
YEAR 7	"	13	32	14	59	150	|	1	0
YEAR 8	"	16	37	16	69	150	|	1	0
YEAR 9	"	19	43	18	80	150	|	1	0
YEAR 10	"	22	49	21	93	150	|	1	0

		BULL RATIO	CALF RATIO
START		40	16
POST HUNT YR	1	20	49
POST HUNT YR	2	26	42
POST HUNT YR	3	30	43
POST HUNT YR	4	33	43
POST HUNT YR	5	35	43
POST HUNT YR	6	37	43
POST HUNT YR	7	39	43
POST HUNT YR	8	41	43
POST HUNT YR	9	42	43
POST HUNT YR	10	43	43

GOODALE TULE ELK SUBHERD - SIMULATION RUNS, 2016
Ratio = 27/100/53 - Maximum Calf Survival = 50%
THIS PROGRAM CALCULATES CHANGES IN
HERD
CHARACTERISTICS BASED ON VARIOUS
HARVEST
RATES.

CURRENT CONDITION: HARVEST UP TO 2 BULL (CURRENTLY PART OF INDPENDENCE ZONE)
NO CHANGE: HARVEST UP TO 2 BULL AND 0 ANTLERLESS
Various combination of tags to achieve harvest,
Assuming success rate of 80% bull and 60% antlerless

HARVEST 2 BULLS (INCLUDING 1 FUND-RAISING TAG
BULL)

HERD SIZE	35	ELK
% BULLS LOST TO NON HUNTING CAUSES	19	%
% COWS LOST TO NON HUNTING CAUSES	5	%
% OF BULLS KILLED BY HUNTERS	35	%
% OF COWS KILLED BY HUNTERS	0	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	5	19	10	35	35	|	2	0
YEAR 1	"	7	23	10	40	150	|	2	0
YEAR 2	"	8	27	12	46	150	|	2	0
YEAR 3	"	9	31	13	53	150	|	2	0
YEAR 4	"	11	36	16	62	150	|	2	0
YEAR 5	"	13	41	18	72	150	|	2	0
YEAR 6	"	16	48	21	84	150	|	2	0
YEAR 7	"	19	55	24	99	150	|	2	0
YEAR 8	"	23	64	28	115	150	|	2	0
YEAR 9	"	28	74	32	134	150	|	2	0
YEAR 10	"	34	85	31	150	150	|	2	0

		BULL RATIO	CALF RATIO
START		27	53
POST HUNT YR	1	19	42
POST HUNT YR	2	19	44
POST HUNT YR	3	21	43
POST HUNT YR	4	23	43
POST HUNT YR	5	26	43
POST HUNT YR	6	28	43
POST HUNT YR	7	31	43
POST HUNT YR	8	33	43
POST HUNT YR	9	35	43
POST HUNT YR	10	37	36

GOODALE TULE ELK SUBHERD - SIMULATION RUNS, 2016
Ratio = 27/100/53- Maximum Calf Survival = 50%
THIS PROGRAM CALCULATES CHANGES IN
HERD
CHARACTERISTICS BASED ON VARIOUS
HARVEST
RATES.

PROPOSED: HARVEST BULL & ANTLERLESS
HARVEST UP TO 3 BULL AND 2 ANTLERLESS
Various combination of tags to achieve harvest,
Assuming success rate of 80% bull and 60% antlerless

(INCLUDING 1 FUND-RAISING TAG BULL)

HERD SIZE	35	ELK
% BULLS LOST TO NON HUNTING CAUSES	19	%
% COWS LOST TO NON HUNTING CAUSES	5	%
% OF BULLS KILLED BY HUNTERS	37	%
% OF COWS KILLED BY HUNTERS	10	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	5	19	10	35	35	|	2	0
YEAR 1	"	7	23	10	40	150	|	3	2
YEAR 2	"	7	25	11	43	150	|	3	2
YEAR 3	"	8	26	11	45	150	|	3	2
YEAR 4	"	9	28	12	48	150	|	3	2
YEAR 5	"	9	30	13	51	150	|	3	2
YEAR 6	"	10	32	14	55	150	|	3	2
YEAR 7	"	11	34	15	59	150	|	3	2
YEAR 8	"	12	37	16	65	150	|	3	2
YEAR 9	"	13	40	17	71	150	|	3	2
YEAR 10	"	15	44	19	78	150	|	3	2

		BULL RATIO	CALF RATIO
START		27	53
POST HUNT YR	1	20	46
POST HUNT YR	2	21	48
POST HUNT YR	3	21	47
POST HUNT YR	4	21	47
POST HUNT YR	5	21	47
POST HUNT YR	6	22	46
POST HUNT YR	7	23	46
POST HUNT YR	8	24	46
POST HUNT YR	9	26	46
POST HUNT YR	10	28	45

GOODALE TULE ELK SUBHERD - SIMULATION RUNS, 2016
Ratio = 27/100/53 - Maximum Calf Survival = 50%
THIS PROGRAM CALCULATES CHANGES IN
HERD
CHARACTERISTICS BASED ON VARIOUS
HARVEST
RATES.

INCREASED HARVEST: HARVEST BULL & ANTLERLESS
HARVEST UP TO 4 BULL AND 4 ANTLERLESS
Various combination of tags to achieve harvest,
Assuming success rate of 80% bull and 60% antlerless

(INCLUDING 1 FUND-RAISING TAG BULL)

HERD SIZE	35	ELK
% BULLS LOST TO NON HUNTING CAUSES	19	%
% COWS LOST TO NON HUNTING CAUSES	5	%
% OF BULLS KILLED BY HUNTERS	53	%
% OF COWS KILLED BY HUNTERS	18	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	5	19	10	35	35	|	2	0
YEAR 1	"	7	23	10	40	150	|	4	4
YEAR 2	"	7	23	10	39	150	|	3	4
YEAR 3	"	6	22	9	38	150	|	3	4
YEAR 4	"	6	22	9	37	150	|	3	4
YEAR 5	"	6	21	9	36	150	|	3	4
YEAR 6	"	6	21	9	36	150	|	3	4
YEAR 7	"	6	20	9	35	150	|	3	4
YEAR 8	"	6	20	8	34	150	|	3	4
YEAR 9	"	6	20	8	33	150	|	3	4
YEAR 10	"	5	19	8	33	150	|	3	3

		BULL RATIO	CALF RATIO
START		27	53
POST HUNT YR	1	17	51
POST HUNT YR	2	16	51
POST HUNT YR	3	16	51
POST HUNT YR	4	16	51
POST HUNT YR	5	16	51
POST HUNT YR	6	16	51
POST HUNT YR	7	16	51
POST HUNT YR	8	16	51
POST HUNT YR	9	16	51
POST HUNT YR	10	16	51

GOODALE TULE ELK SUBHERD - SIMULATION RUNS, 2016
Ratio = 27/100/53 - Maximum Calf Survival = 50%
THIS PROGRAM CALCULATES CHANGES IN
HERD
CHARACTERISTICS BASED ON VARIOUS
HARVEST
RATES.

HERD GROWTH: HARVEST BULL & ANTLERLESS
HARVEST UP TO 6 BULL AND 10 ANTLERLESS
Various combination of tags to achieve harvest,
Assuming success rate of 80% bull and 60% antlerless

(INCLUDING 1 FUND-RAISING TAG BULL)

HERD SIZE	80	ELK
% BULLS LOST TO NON HUNTING CAUSES	19	%
% COWS LOST TO NON HUNTING CAUSES	5	%
% OF BULLS KILLED BY HUNTERS	32	%
% OF COWS KILLED BY HUNTERS	19	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	12	44	24	80	80	|	2	0
YEAR 1	"	18	53	22	93	150	|	6	10
YEAR 2	"	19	52	22	92	150	|	6	10
YEAR 3	"	19	50	21	90	150	|	6	10
YEAR 4	"	19	48	20	88	150	|	6	9
YEAR 5	"	19	47	20	85	150	|	6	9
YEAR 6	"	18	45	19	83	150	|	6	9
YEAR 7	"	18	44	18	80	150	|	6	8
YEAR 8	"	17	43	18	78	150	|	6	8
YEAR 9	"	17	41	17	75	150	|	5	8
YEAR 10	"	16	40	17	73	150	|	5	8

		BULL RATIO	CALF RATIO
START		27	53
POST HUNT YR	1	28	51
POST HUNT YR	2	30	52
POST HUNT YR	3	32	52
POST HUNT YR	4	33	52
POST HUNT YR	5	33	52
POST HUNT YR	6	34	52
POST HUNT YR	7	34	52
POST HUNT YR	8	34	52
POST HUNT YR	9	34	52
POST HUNT YR	10	34	52

GOODALE TULE ELK SUBHERD - SIMULATION RUNS, 2016
Ratio = 27/100/53- Maximum Calf Survival = 50%
THIS PROGRAM CALCULATES CHANGES IN
HERD
CHARACTERISTICS BASED ON VARIOUS
HARVEST
RATES.

REDUCED HARVEST: HARVEST BULL & ANTLERLESS
HARVEST UP TO 2 BULL AND 1 ANTLERLESS
Various combination of tags to achieve harvest,
Assuming success rate of 80% bull and 60% antlerless

(INCLUDING 1 FUND-RAISING TAG BULL)

HERD SIZE	35	ELK
% BULLS LOST TO NON HUNTING CAUSES	19	%
% COWS LOST TO NON HUNTING CAUSES	5	%
% OF BULLS KILLED BY HUNTERS	23	%
% OF COWS KILLED BY HUNTERS	3	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	5	19	10	35	35	|	2	0
YEAR 1	"	7	23	10	40	150	|	2	1
YEAR 2	"	8	26	11	46	150	|	2	1
YEAR 3	"	10	29	13	52	150	|	2	1
YEAR 4	"	11	33	14	59	150	|	2	1
YEAR 5	"	13	38	16	67	150	|	2	1
YEAR 6	"	15	43	18	77	150	|	2	1
YEAR 7	"	18	49	21	88	150	|	2	1
YEAR 8	"	21	55	24	101	150	|	2	1
YEAR 9	"	25	63	27	116	150	|	2	1
YEAR 10	"	30	72	31	133	150	|	2	1

		BULL RATIO	CALF RATIO
START		27	53
POST HUNT YR	1	23	43
POST HUNT YR	2	25	45
POST HUNT YR	3	26	44
POST HUNT YR	4	28	44
POST HUNT YR	5	29	44
POST HUNT YR	6	31	44
POST HUNT YR	7	33	44
POST HUNT YR	8	35	44
POST HUNT YR	9	37	44
POST HUNT YR	10	38	44

GRIZZLY ISLAND - SIMULATION RUNS, 2016

Ratio = 50/100/50 - Maximum Calf Survival =70%

THIS PROGRAM CALCULATES CHANGES IN HERD CHARACTERISTICS BASED ON VARIOUS HARVEST RATES.

CURRENT CONDITION: BULL, SPIKE, & ANTLERLESS
TO HARVEST UP TO 18 BULL AND 40 ANTLERLESS
Various combination of tags to achieve harvest,
Assuming success rate of 95% bull and 95% antlerless

HERD SIZE	300	ELK
% BULLS LOST TO NON HUNTING CAUSES	5	%
% COWS LOST TO NON HUNTING CAUSES	2	%
% OF BULLS KILLED BY HUNTERS	19.5	%
% OF COWS KILLED BY HUNTERS	28	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	75	150	75	300	300	|	18	40
YEAR 1	"	90	145	77	311	400	|	18	40
YEAR 2	"	105	140	73	318	400	|	18	39
YEAR 3	"	118	134	70	323	400	|	18	38
YEAR 4	"	129	129	68	326	400	|	18	36
YEAR 5	"	138	124	65	327	400	|	18	35
YEAR 6	"	145	120	63	328	400	|	18	34
YEAR 7	"	151	115	60	327	400	|	18	32
YEAR 8	"	156	111	58	325	400	|	18	31
YEAR 9	"	159	107	56	321	400	|	18	30
YEAR 10	"	161	103	54	317	400	|	18	29

		BULL RATIO	CALF RATIO
START		50	50
POST HUNT YR	1	69	74
POST HUNT YR	2	87	72
POST HUNT YR	3	104	73
POST HUNT YR	4	120	73
POST HUNT YR	5	134	73
POST HUNT YR	6	148	73
POST HUNT YR	7	161	73
POST HUNT YR	8	173	73
POST HUNT YR	9	184	73
POST HUNT YR	10	194	73

GRIZZLY ISLAND - SIMULATION RUNS, 2016

Ratio = 50/100/50 - Maximum Calf Survival =70%

THIS PROGRAM CALCULATES CHANGES IN HERD CHARACTERISTICS BASED ON VARIOUS HARVEST RATES.

CURRENT CONDITION: BULL, SPIKE, & ANTLERLESS
TO HARVEST UP TO 18 BULL AND 40 ANTLERLESS
Various combination of tags to achieve harvest,
Assuming success rate of 95% bull and 95% antlerless

HERD SIZE	300	ELK
% BULLS LOST TO NON HUNTING CAUSES	5	%
% COWS LOST TO NON HUNTING CAUSES	2	%
% OF BULLS KILLED BY HUNTERS	19.5	%
% OF COWS KILLED BY HUNTERS	28	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	75	150	75	300	300	|	18	40
YEAR 1	"	90	145	77	311	400	|	18	40
YEAR 2	"	105	140	73	318	400	|	18	40
YEAR 3	"	118	133	69	320	400	|	18	40
YEAR 4	"	128	125	65	318	400	|	18	40
YEAR 5	"	136	114	59	309	400	|	18	40
YEAR 6	"	141	101	52	294	400	|	18	28
YEAR 7	"	142	97	51	289	400	|	18	27
YEAR 8	"	142	93	49	284	400	|	18	26
YEAR 9	"	141	90	47	278	400	|	18	25
YEAR 10	"	140	86	45	272	400	|	18	24

		BULL RATIO	CALF RATIO
START		50	50
POST HUNT YR	1	69	74
POST HUNT YR	2	88	73
POST HUNT YR	3	109	75
POST HUNT YR	4	132	77
POST HUNT YR	5	161	80
POST HUNT YR	6	169	71
POST HUNT YR	7	178	73
POST HUNT YR	8	186	73
POST HUNT YR	9	192	73
POST HUNT YR	10	197	73

GRIZZLY ISLAND - SIMULATION RUNS,
GENERAL, SHARE, & PLM 2016

Ratio = 50/100/50 - Maximum Calf Survival =70%

THIS PROGRAM CALCULATES CHANGES IN HERD CHARACTERISTICS BASED ON VARIOUS HARVEST RATES.

PROPOSED HARVEST: BULL, SPIKE, & ANTLERLESS
TO HARVEST UP TO 32 BULL AND 70 ANTLERLESS
Various combination of tags to achieve harvest,
Assuming success rate of 95% bull and 95% antlerless

HERD SIZE	300	ELK
% BULLS LOST TO NON HUNTING CAUSES	5	%
% COWS LOST TO NON HUNTING CAUSES	2	%
% OF BULLS KILLED BY HUNTERS	35.5	%
% OF COWS KILLED BY HUNTERS	48.5	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	75	150	75	300	300	|	18	40
YEAR 1	"	90	145	77	311	400	|	32	70
YEAR 2	"	92	111	52	254	400	|	32	54
YEAR 3	"	81	81	40	203	400	|	29	39
YEAR 4	"	69	61	29	159	400	|	24	29
YEAR 5	"	56	45	22	123	400	|	20	22
YEAR 6	"	45	33	16	94	400	|	16	16
YEAR 7	"	35	25	12	72	400	|	12	12
YEAR 8	"	27	18	9	55	400	|	10	9
YEAR 9	"	21	14	7	41	400	|	7	7
YEAR 10	"	16	10	5	31	400	|	6	5

		BULL RATIO	CALF RATIO
START		50	50
POST HUNT YR	1	78	103
POST HUNT YR	2	105	91
POST HUNT YR	3	125	95
POST HUNT YR	4	142	94
POST HUNT YR	5	156	94
POST HUNT YR	6	168	94
POST HUNT YR	7	177	94
POST HUNT YR	8	185	94
POST HUNT YR	9	192	94
POST HUNT YR	10	197	94

GRIZZLY ISLAND - SIMULATION RUNS,
GENERAL, SHARE, & PLM 2016

Ratio = 50/100/50 - Maximum Calf Survival =70%

THIS PROGRAM CALCULATES CHANGES IN HERD CHARACTERISTICS BASED ON VARIOUS HARVEST RATES.

INCREASED HARVEST: BULL, SPIKE, & ANTLERLESS
TO HARVEST UP TO 48 BULL AND 72 ANTLERLESS
Various combination of tags to achieve harvest,
Assuming success rate of 95% bull and 95% antlerless

HERD SIZE	300	ELK
% BULLS LOST TO NON HUNTING CAUSES	5	%
% COWS LOST TO NON HUNTING CAUSES	2	%
% OF BULLS KILLED BY HUNTERS	53	%
% OF COWS KILLED BY HUNTERS	50	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	75	150	75	300	300	|	18	40
YEAR 1	"	90	145	77	311	400	|	48	72
YEAR 2	"	77	109	51	236	400	|	41	54
YEAR 3	"	58	78	38	174	400	|	31	39
YEAR 4	"	44	57	27	128	400	|	23	28
YEAR 5	"	33	41	20	94	400	|	17	21
YEAR 6	"	24	30	14	68	400	|	13	15
YEAR 7	"	18	22	10	50	400	|	9	11
YEAR 8	"	13	16	8	36	400	|	7	8
YEAR 9	"	9	11	6	26	400	|	5	6
YEAR 10	"	7	8	4	19	400	|	4	4

		BULL RATIO	CALF RATIO
START		50	50
POST HUNT YR	1	58	107
POST HUNT YR	2	66	93
POST HUNT YR	3	70	97
POST HUNT YR	4	73	96
POST HUNT YR	5	74	97
POST HUNT YR	6	75	96
POST HUNT YR	7	76	96
POST HUNT YR	8	76	96
POST HUNT YR	9	77	96
POST HUNT YR	10	77	96

GRIZZLY ISLAND - SIMULATION RUNS,
GENERAL, SHARE, & PLM 2016

Ratio = 50/100/50 - Maximum Calf Survival =70%

THIS PROGRAM CALCULATES CHANGES IN HERD CHARACTERISTICS BASED ON VARIOUS HARVEST RATES.

HERD GROWTH: BULL, SPIKE, & ANTLERLESS
TO HARVEST UP TO 50 BULL AND 113 ANTLERLESS
Various combination of tags to achieve harvest,
Assuming success rate of 95% bull and 95% antlerless

HERD SIZE	450	ELK
% BULLS LOST TO NON HUNTING CAUSES	5	%
% COWS LOST TO NON HUNTING CAUSES	2	%
% OF BULLS KILLED BY HUNTERS	35	%
% OF COWS KILLED BY HUNTERS	48	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	113	225	113	450	450	|	18	40
YEAR 1	"	143	236	70	450	450	|	50	113
YEAR 2	"	122	155	86	363	450	|	43	74
YEAR 3	"	116	121	56	294	450	|	41	58
YEAR 4	"	98	89	44	232	450	|	34	43
YEAR 5	"	82	67	33	181	450	|	29	32
YEAR 6	"	66	50	24	141	450	|	23	24
YEAR 7	"	52	38	18	108	450	|	18	18
YEAR 8	"	41	28	14	83	450	|	14	13
YEAR 9	"	32	21	10	63	450	|	11	10
YEAR 10	"	24	16	8	48	450	|	9	8

		BULL RATIO	CALF RATIO
START		50	50
POST HUNT YR	1	76	57
POST HUNT YR	2	98	107
POST HUNT YR	3	120	90
POST HUNT YR	4	138	95
POST HUNT YR	5	152	93
POST HUNT YR	6	164	94
POST HUNT YR	7	174	94
POST HUNT YR	8	182	94
POST HUNT YR	9	189	94
POST HUNT YR	10	195	94

GRIZZLY ISLAND - SIMULATION RUNS,
GENERAL, SHARE, & PLM 2016

Ratio = 50/100/50 - Maximum Calf Survival =70%

THIS PROGRAM CALCULATES CHANGES IN HERD CHARACTERISTICS BASED ON VARIOUS HARVEST RATES.

REDUCED HARVEST: BULL, SPIKE, & ANTLERLESS
TO HARVEST UP TO 16 BULL AND 32 ANTLERLESS
Various combination of tags to achieve harvest,
Assuming success rate of 95% bull and 95% antlerless

HERD SIZE	300	ELK
% BULLS LOST TO NON HUNTING CAUSES	5	%
% COWS LOST TO NON HUNTING CAUSES	2	%
% OF BULLS KILLED BY HUNTERS	17.5	%
% OF COWS KILLED BY HUNTERS	24	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	75	150	75	300	300	|	18	40
YEAR 1	"	90	145	77	311	400	|	16	35
YEAR 2	"	107	145	77	329	400	|	16	35
YEAR 3	"	123	146	77	347	400	|	16	35
YEAR 4	"	139	147	78	364	400	|	16	35
YEAR 5	"	154	149	79	381	400	|	16	35
YEAR 6	"	169	150	80	399	400	|	16	35
YEAR 7	"	183	152	64	400	400	|	16	35
YEAR 8	"	190	147	63	400	400	|	16	35
YEAR 9	"	196	141	64	400	400	|	16	35
YEAR 10	"	201	135	64	400	400	|	16	35

		BULL RATIO	CALF RATIO
START		50	50
POST HUNT YR	1	67	70
POST HUNT YR	2	82	69
POST HUNT YR	3	96	70
POST HUNT YR	4	109	69
POST HUNT YR	5	122	69
POST HUNT YR	6	133	69
POST HUNT YR	7	143	55
POST HUNT YR	8	155	57
POST HUNT YR	9	169	60
POST HUNT YR	10	184	63

FORT HUNTER LIGGETT BASE ONLY - SIMULATION RUNS, 2016
Ratio = 41/100/40 - Maximum Calf Survival = 60%
THIS PROGRAM CALCULATES CHANGES IN
HERD
CHARACTERISTICS BASED ON VARIOUS
HARVEST
RATES.

CURRENT CONDITION: UP TO 17 BULL AND 43 ANTLERLESS
NO CHANGE: HARVEST UP TO 17 BULL AND 43 ANTLERLESS
Various combination of tags to achieve harvest,
Assuming success rate of 70% bull and 50% antlerless

HERD SIZE	450	ELK
% BULLS LOST TO NON HUNTING CAUSES	25	%
% COWS LOST TO NON HUNTING CAUSES	7	%
% OF BULLS KILLED BY HUNTERS	16	%
% OF COWS KILLED BY HUNTERS	16	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	102	249	99	450	450	|	10	8
YEAR 1	"	106	270	124	500	500	|	17	43
YEAR 2	"	113	268	118	500	500	|	17	43
YEAR 3	"	117	265	119	500	500	|	17	42
YEAR 4	"	119	262	119	500	500	|	17	42
YEAR 5	"	121	260	119	500	500	|	17	42
YEAR 6	"	123	258	119	500	500	|	17	41
YEAR 7	"	124	257	119	500	500	|	17	41
YEAR 8	"	125	256	119	500	500	|	17	41
YEAR 9	"	125	255	119	500	500	|	17	41
YEAR 10	"	126	255	119	500	500	|	17	41

		BULL RATIO	CALF RATIO
START		41	40
POST HUNT YR	1	39	55
POST HUNT YR	2	43	52
POST HUNT YR	3	45	53
POST HUNT YR	4	46	54
POST HUNT YR	5	48	54
POST HUNT YR	6	49	55
POST HUNT YR	7	50	55
POST HUNT YR	8	50	55
POST HUNT YR	9	51	55
POST HUNT YR	10	51	56

FORT HUNTER LIGGETT CENTRAL COAST - SIMULATION RUNS, GENERAL AND PLM, 2016
Ratio = 41/100/40 - Maximum Calf Survival = 60%
THIS PROGRAM CALCULATES CHANGES IN
HERD
CHARACTERISTICS BASED ON VARIOUS
HARVEST
RATES.

PROPOSED: BULL, ANTLERLESS, EITHER-SEX (INCLUDING COOPERATIVE)
TO HARVEST UP TO 40 BULL AND 70 ANTLERLESS
Various combination of tags to achieve harvest,
Assuming success rate of 70% bull and 50% antlerless

HERD SIZE	825	ELK
% BULLS LOST TO NON HUNTING CAUSES	25	%
% COWS LOST TO NON HUNTING CAUSES	10	%
% OF BULLS KILLED BY HUNTERS	22	%
% OF COWS KILLED BY HUNTERS	15	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	187	456	182	825	825	|	37	27
YEAR 1	"	181	468	257	906	1000	|	40	70
YEAR 2	"	202	474	239	915	1000	|	40	70
YEAR 3	"	211	471	242	924	1000	|	40	70
YEAR 4	"	219	469	240	929	1000	|	40	70
YEAR 5	"	225	467	239	932	1000	|	40	70
YEAR 6	"	229	465	238	932	1000	|	40	70
YEAR 7	"	231	463	237	931	1000	|	40	70
YEAR 8	"	232	460	236	928	1000	|	40	70
YEAR 9	"	233	457	234	923	1000	|	40	70
YEAR 10	"	232	453	232	917	1000	|	40	70

		BULL RATIO	CALF RATIO
START		41	40
POST HUNT YR	1	35	65
POST HUNT YR	2	40	59
POST HUNT YR	3	43	60
POST HUNT YR	4	45	60
POST HUNT YR	5	47	60
POST HUNT YR	6	48	60
POST HUNT YR	7	49	60
POST HUNT YR	8	49	60
POST HUNT YR	9	50	60
POST HUNT YR	10	50	61

FORT HUNTER LIGGETT CENTRAL COAST - SIMULATION RUNS, GENERAL AND PLM, 2016
Ratio = 41/100/40 - Maximum Calf Survival = 60%
THIS PROGRAM CALCULATES CHANGES IN
HERD
CHARACTERISTICS BASED ON VARIOUS
HARVEST
RATES.

INCREASED HARVEST: BULL, ANTLERLESS, EITHER-SEX (INCLUDING COOPERATIVE)
TO HARVEST UP TO 60 BULL AND 105 ANTLERLESS
Various combination of tags to achieve harvest,
Assuming success rate of 70% bull and 50% antlerless

HERD SIZE	825	ELK
% BULLS LOST TO NON HUNTING CAUSES	25	%
% COWS LOST TO NON HUNTING CAUSES	10	%
% OF BULLS KILLED BY HUNTERS	33	%
% OF COWS KILLED BY HUNTERS	22.5	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	187	456	182	825	825	|	37	27
YEAR 1	"	181	468	257	906	1000	|	60	105
YEAR 2	"	187	442	218	847	1000	|	62	99
YEAR 3	"	176	406	206	788	1000	|	58	91
YEAR 4	"	165	376	189	730	1000	|	55	85
YEAR 5	"	154	347	175	676	1000	|	51	78
YEAR 6	"	143	321	161	625	1000	|	47	72
YEAR 7	"	132	296	149	578	1000	|	44	67
YEAR 8	"	122	274	138	534	1000	|	40	62
YEAR 9	"	113	253	127	494	1000	|	37	57
YEAR 10	"	105	234	118	456	1000	|	35	53

		BULL RATIO	CALF RATIO
START		41	40
POST HUNT YR	1	33	71
POST HUNT YR	2	37	63
POST HUNT YR	3	37	65
POST HUNT YR	4	38	65
POST HUNT YR	5	38	65
POST HUNT YR	6	39	65
POST HUNT YR	7	39	65
POST HUNT YR	8	39	65
POST HUNT YR	9	39	65
POST HUNT YR	10	39	65

FORT HUNTER LIGGETT CENTRAL COAST - SIMULATION RUNS, GENERAL AND PLM, 2016
Ratio = 41/100/40 - Maximum Calf Survival = 60%
THIS PROGRAM CALCULATES CHANGES IN
HERD
CHARACTERISTICS BASED ON VARIOUS
HARVEST
RATES.

HERD GROWTH: BULL, ANTLERLESS, EITHER-SEX (INCLUDING COOPERATIVE)
TO HARVEST UP TO 50 BULL AND 86 ANTLERLESS
Various combination of tags to achieve harvest,
Assuming success rate of 70% bull and 50% antlerless

HERD SIZE	1000	ELK
% BULLS LOST TO NON HUNTING CAUSES	25	%
% COWS LOST TO NON HUNTING CAUSES	10	%
% OF BULLS KILLED BY HUNTERS	22	%
% OF COWS KILLED BY HUNTERS	15	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	227	552	221	1000	1000	|	37	27
YEAR 1	"	225	572	203	1000	1000	|	50	86
YEAR 2	"	208	529	263	1000	1000	|	46	79
YEAR 3	"	220	523	257	1000	1000	|	48	78
YEAR 4	"	225	516	259	1000	1000	|	50	77
YEAR 5	"	229	511	260	1000	1000	|	50	77
YEAR 6	"	231	508	261	1000	1000	|	51	76
YEAR 7	"	233	506	259	998	1000	|	51	76
YEAR 8	"	234	504	258	995	1000	|	51	76
YEAR 9	"	233	501	257	992	1000	|	51	75
YEAR 10	"	233	499	256	988	1000	|	51	75

		BULL RATIO	CALF RATIO
START		41	40
POST HUNT YR	1	36	42
POST HUNT YR	2	36	59
POST HUNT YR	3	39	58
POST HUNT YR	4	40	59
POST HUNT YR	5	41	60
POST HUNT YR	6	42	60
POST HUNT YR	7	42	60
POST HUNT YR	8	43	60
POST HUNT YR	9	43	60
POST HUNT YR	10	43	60

FORT HUNTER LIGGETT CENTRAL COAST - SIMULATION RUNS, GENERAL AND PLM, 2016
Ratio = 41/100/40 - Maximum Calf Survival = 60%
THIS PROGRAM CALCULATES CHANGES IN
HERD
CHARACTERISTICS BASED ON VARIOUS
HARVEST
RATES.

REDUCED HARVEST: BULL, ANTLERLESS, EITHER-SEX (INCLUDING COOPERATIVE)
TO HARVEST UP TO 20 BULL AND 35 ANTLERLESS
Various combination of tags to achieve harvest,
Assuming success rate of 70% bull and 50% antlerless

HERD SIZE	825	ELK
% BULLS LOST TO NON HUNTING CAUSES	25	%
% COWS LOST TO NON HUNTING CAUSES	10	%
% OF BULLS KILLED BY HUNTERS	11	%
% OF COWS KILLED BY HUNTERS	7.5	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	187	456	182	825	825	|	37	27
YEAR 1	"	181	468	257	906	1000	|	20	35
YEAR 2	"	217	505	260	982	1000	|	20	35
YEAR 3	"	245	540	215	1000	1000	|	20	35
YEAR 4	"	250	551	199	1000	1000	|	20	35
YEAR 5	"	247	554	199	1000	1000	|	20	35
YEAR 6	"	245	557	198	1000	1000	|	20	35
YEAR 7	"	243	559	198	1000	1000	|	20	35
YEAR 8	"	242	560	198	1000	1000	|	20	35
YEAR 9	"	241	562	198	1000	1000	|	20	35
YEAR 10	"	240	563	197	1000	1000	|	20	35

		BULL RATIO	CALF RATIO
START		41	40
POST HUNT YR	1	37	59
POST HUNT YR	2	42	55
POST HUNT YR	3	45	42
POST HUNT YR	4	45	39
POST HUNT YR	5	44	38
POST HUNT YR	6	43	38
POST HUNT YR	7	43	38
POST HUNT YR	8	42	38
POST HUNT YR	9	42	38
POST HUNT YR	10	42	37

EAST PARK RESERVOIR TULE ELK HERD - SIMULATION RUNS,
GENERAL, SHARE, & PLM 2016

Ratio = 25/100/36 - Maximum Calf Survival = 67%
THIS PROGRAM CALCULATES CHANGES IN
HERD
CHARACTERISTICS BASED ON VARIOUS HARVEST RATES.

CURRENT CONDITION: BULL, COW,
TO HARVEST UP TO 2 BULLS & 4 COWS
Various combination of tags to achieved harvest, includes cooperative tags
Assuming success rate of 90% bull and 75% antlerless

HERD SIZE	120	ELK
% BULLS LOST TO NON HUNTING CAUSES	30	%
% COWS LOST TO NON HUNTING CAUSES	15	%
% OF BULLS KILLED BY HUNTERS	10	%
% OF COWS KILLED BY HUNTERS	4.8	%

		BULLS	COWS	SURV. CALVES	TOTAL	K	BULLS HARVEST	COWS HARVEST
START	AUG	19	75	27	120	120	2	2
YEAR 1	"	21	73	49	143	200	2	4
YEAR 2	"	30	80	47	157	200	2	4
YEAR 3	"	36	85	51	172	200	2	4
YEAR 4	"	42	91	54	187	200	2	4
YEAR 5	"	47	97	56	200	200	2	4
YEAR 6	"	51	103	46	200	200	2	4
YEAR 7	"	50	104	46	200	200	2	4
YEAR 8	"	50	105	45	200	200	2	4
YEAR 9	"	49	106	45	200	200	2	4
YEAR 10	"	49	106	45	200	200	2	4

		BULL RATIO	CALF RATIO
START		25	36
POST HUNT YR	1	27	70
POST HUNT YR	2	37	61
POST HUNT YR	3	42	63
POST HUNT YR	4	45	62
POST HUNT YR	5	48	60
POST HUNT YR	6	49	46
POST HUNT YR	7	48	45
POST HUNT YR	8	47	45
POST HUNT YR	9	46	44
POST HUNT YR	10	45	44

EAST PARK RESERVOIR TULE ELK HERD - SIMULATION RUNS,
GENERAL, SHARE, & PLM 2016

Ratio = 25/100/36 - Maximum Calf Survival = 67%
THIS PROGRAM CALCULATES CHANGES IN
HERD
CHARACTERISTICS BASED ON VARIOUS HARVEST RATES.

PROPOSED: BULL, COW,
TO HARVEST UP TO 4 BULLS & 10 COWS
Various combination of tags to achieved harvest, includes cooperative tags
Assuming success rate of 90% bull and 75% antlerless

HERD SIZE	120	ELK
% BULLS LOST TO NON HUNTING CAUSES	30	%
% COWS LOST TO NON HUNTING CAUSES	15	%
% OF BULLS KILLED BY HUNTERS	20	%
% OF COWS KILLED BY HUNTERS	13.5	%

		BULLS	COWS	SURV. CALVES	TOTAL	K	BULLS HARVEST	COWS HARVEST
START	AUG	19	75	27	120	120	2	2
YEAR 1	"	21	73	49	143	200	4	10
YEAR 2	"	29	74	42	145	200	4	10
YEAR 3	"	32	73	43	148	200	4	10
YEAR 4	"	35	72	42	149	200	4	10
YEAR 5	"	36	71	42	148	200	4	10
YEAR 6	"	37	69	41	147	200	4	10
YEAR 7	"	37	68	40	145	200	4	10
YEAR 8	"	37	66	39	142	200	4	10
YEAR 9	"	37	64	38	139	200	4	10
YEAR 10	"	36	62	37	135	200	4	10

		BULL RATIO	CALF RATIO
START		25	36
POST HUNT YR	1	27	77
POST HUNT YR	2	38	66
POST HUNT YR	3	44	69
POST HUNT YR	4	49	68
POST HUNT YR	5	52	68
POST HUNT YR	6	55	68
POST HUNT YR	7	57	69
POST HUNT YR	8	58	69
POST HUNT YR	9	59	69
POST HUNT YR	10	60	70

EAST PARK RESERVOIR TULE ELK HERD - SIMULATION RUNS,
GENERAL, SHARE, & PLM 2016

Ratio = 25/100/36 - Maximum Calf Survival = 67%

THIS PROGRAM CALCULATES CHANGES IN
HERD
CHARACTERISTICS BASED ON VARIOUS HARVEST RATES.

INCREASED HARVEST: BULL, COW, INCLUDES COOPERATIVE TAGS
TO HARVEST UP TO 6 BULLS & 15 COWS
Various combination of tags to achieved harvest, includes cooperative tags
Assuming success rate of 90% bull and 75% antlerless

HERD SIZE	120	ELK
% BULLS LOST TO NON HUNTING CAUSES	30	%
% COWS LOST TO NON HUNTING CAUSES	15	%
% OF BULLS KILLED BY HUNTERS	27	%
% OF COWS KILLED BY HUNTERS	20	%

		BULLS	COWS	SURV. CALVES	TOTAL	K	BULLS HARVEST	COWS HARVEST
START	AUG	19	75	27	120	120	2	2
YEAR 1	"	21	73	49	143	200	6	15
YEAR 2	"	28	70	39	137	200	6	15
YEAR 3	"	29	64	37	131	200	6	15
YEAR 4	"	30	58	33	120	200	6	15
YEAR 5	"	28	51	29	108	200	6	15
YEAR 6	"	26	43	24	93	200	6	15
YEAR 7	"	23	35	19	76	200	6	15
YEAR 8	"	19	25	13	57	200	6	15
YEAR 9	"	14	15	7	35	200	6	15
YEAR 10	"	8	3	0	11	200	6	15

		BULL RATIO	CALF RATIO
START		25	36
POST HUNT YR	1	26	83
POST HUNT YR	2	40	70
POST HUNT YR	3	48	76
POST HUNT YR	4	55	77
POST HUNT YR	5	62	80
POST HUNT YR	6	71	85
POST HUNT YR	7	85	96
POST HUNT YR	8	124	128
POST HUNT YR	9	-8983	-7821
POST HUNT YR	10	-20	1

EAST PARK RESERVOIR TULE ELK HERD - SIMULATION RUNS,
GENERAL, SHARE, & PLM 2016

Ratio = 25/100/36 - Maximum Calf Survival = 67%

THIS PROGRAM CALCULATES CHANGES IN
HERD
CHARACTERISTICS BASED ON VARIOUS HARVEST RATES.

HERD GROWTH: BULL, COW TAGS
TO HARVEST UP TO 8 BULLS & 15 COWS
Various combination of tags to achieved harvest,includes cooperative tags
Assuming success rate of 90% bull and 75% antlerless

HERD SIZE	200	ELK
% BULLS LOST TO NON HUNTING CAUSES	30	%
% COWS LOST TO NON HUNTING CAUSES	15	%
% OF BULLS KILLED BY HUNTERS	22	%
% OF COWS KILLED BY HUNTERS	11.9	%

		BULLS	COWS	SURV. CALVES	TOTAL	K	BULLS HARVEST	COWS HARVEST
START	AUG	31	124	45	200	200	2	2
YEAR 1	"	36	123	82	241	250	8	15
YEAR 2	"	48	127	73	248	250	8	15
YEAR 3	"	54	126	70	250	250	8	15
YEAR 4	"	57	125	69	250	250	8	15
YEAR 5	"	58	123	69	250	250	8	15
YEAR 6	"	59	121	69	250	250	8	15
YEAR 7	"	60	120	70	250	250	8	15
YEAR 8	"	61	119	70	250	250	8	15
YEAR 9	"	62	119	70	250	250	8	15
YEAR 10	"	62	118	70	250	250	8	15

		BULL RATIO	CALF RATIO
START		25	36
POST HUNT YR	1	26	76
POST HUNT YR	2	36	65
POST HUNT YR	3	41	63
POST HUNT YR	4	44	63
POST HUNT YR	5	46	64
POST HUNT YR	6	48	65
POST HUNT YR	7	50	66
POST HUNT YR	8	51	67
POST HUNT YR	9	52	67
POST HUNT YR	10	52	67

EAST PARK RESERVOIR TULE ELK HERD - SIMULATION RUNS,
GENERAL, SHARE, & PLM 2016

Ratio = 25/100/36 - Maximum Calf Survival = 67%
THIS PROGRAM CALCULATES CHANGES IN
HERD
CHARACTERISTICS BASED ON VARIOUS HARVEST RATES.

REDUCED HARVEST: BULL, COW,
TO HARVEST UP TO 2 BULLS & 5 COWS
Various combination of tags to achieved harvest, includes cooperative tags
Assuming success rate of 90% bull and 75% antlerless

HERD SIZE	120	ELK
% BULLS LOST TO NON HUNTING CAUSES	30	%
% COWS LOST TO NON HUNTING CAUSES	15	%
% OF BULLS KILLED BY HUNTERS	10	%
% OF COWS KILLED BY HUNTERS	7	%

		BULLS	COWS	SURV. CALVES	TOTAL	K	BULLS HARVEST	COWS HARVEST
START	AUG	19	75	27	120	120	2	2
YEAR 1	"	21	73	49	143	200	2	5
YEAR 2	"	30	78	46	154	200	2	5
YEAR 3	"	36	82	49	166	200	2	5
YEAR 4	"	41	86	51	178	200	2	5
YEAR 5	"	45	90	54	190	200	2	5
YEAR 6	"	49	96	55	200	200	2	5
YEAR 7	"	52	100	47	200	200	2	5
YEAR 8	"	52	101	47	200	200	2	5
YEAR 9	"	51	102	47	200	200	2	5
YEAR 10	"	51	102	47	200	200	2	5

		BULL RATIO	CALF RATIO
START		25	36
POST HUNT YR	1	28	72
POST HUNT YR	2	38	62
POST HUNT YR	3	44	64
POST HUNT YR	4	48	63
POST HUNT YR	5	50	63
POST HUNT YR	6	52	61
POST HUNT YR	7	53	50
POST HUNT YR	8	52	49
POST HUNT YR	9	51	49
POST HUNT YR	10	50	48

SAN LUIS RESERVOIR - SIMULATION RUNS, GENERAL,
SHARE, & PLM 2016

Ratio = 22/100/32 - Maximum Calf Survival = 50%

THIS PROGRAM CALCULATES CHANGES IN HERD
CHARACTERISTICS BASED ON VARIOUS
HARVEST
RATES.

CURRENT CONDITION: EITHER-SEX
TO HARVEST UP TO 5 BULL/ANTLERLESS
Various combination of tags to achieve harvest,
Assuming success rate of 70% bull and 50% antlerless

HERD SIZE	390	ELK
% BULLS LOST TO NON HUNTING CAUSES	25	%
% COWS LOST TO NON HUNTING CAUSES	10	%
% OF BULLS KILLED BY HUNTERS	6	%
% OF COWS KILLED BY HUNTERS	0.5	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	56	253	81	390	390	|	5	0
YEAR 1	"	68	264	127	459	800	|	4	1
YEAR 2	"	96	294	132	521	800	|	4	1
YEAR 3	"	118	322	146	587	800	|	4	1
YEAR 4	"	140	355	161	656	800	|	4	1
YEAR 5	"	162	390	177	729	800	|	4	1
YEAR 6	"	185	430	185	800	800	|	4	1
YEAR 7	"	205	469	126	800	800	|	4	1
YEAR 8	"	198	477	124	800	800	|	4	1
YEAR 9	"	192	485	123	800	800	|	4	1
YEAR 10	"	187	490	122	800	800	|	4	1

		BULL RATIO	CALF RATIO
START		22	32
POST HUNT YR	1	24	48
POST HUNT YR	2	31	45
POST HUNT YR	3	35	46
POST HUNT YR	4	39	45
POST HUNT YR	5	41	45
POST HUNT YR	6	42	43
POST HUNT YR	7	43	27
POST HUNT YR	8	41	26
POST HUNT YR	9	39	26
POST HUNT YR	10	37	25

SAN LUIS RESERVOIR - SIMULATION RUNS.
General, SHARE,& PLM 2016
Ratio = 22/100/32 - Maximum Calf Survival = 50%
THIS PROGRAM CALCULATES CHANGES IN HERD
CHARACTERISTICS BASED ON VARIOUS
HARVEST
RATES.

PROPOSED: BULL, ANTLERLESS, EITHER-SEX (INCLUDES COOPERATIVE TAGS)
TO HARVEST UP TO 15 BULL AND 30 ANTLERLESS
Various combination of tags to achieve harvest,
Assuming success rate of 70% bull and 50% antlerless

HERD SIZE	390	ELK
% BULLS LOST TO NON HUNTING CAUSES	25	%
% COWS LOST TO NON HUNTING CAUSES	10	%
% OF BULLS KILLED BY HUNTERS	22	%
% OF COWS KILLED BY HUNTERS	11.5	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	56	253	81	390	390	|	5	0
YEAR 1	"	68	264	127	459	800	|	15	30
YEAR 2	"	88	268	117	472	800	|	15	30
YEAR 3	"	98	266	119	483	800	|	15	30
YEAR 4	"	107	265	118	490	800	|	15	30
YEAR 5	"	113	265	118	495	800	|	15	30
YEAR 6	"	118	264	117	498	800	|	15	30
YEAR 7	"	121	263	117	500	800	|	15	30
YEAR 8	"	123	261	116	501	800	|	15	30
YEAR 9	"	125	260	116	500	800	|	15	30
YEAR 10	"	125	259	115	499	800	|	15	30

		BULL RATIO	CALF RATIO
START		22	32
POST HUNT YR	1	23	54
POST HUNT YR	2	31	49
POST HUNT YR	3	35	50
POST HUNT YR	4	39	50
POST HUNT YR	5	42	50
POST HUNT YR	6	44	50
POST HUNT YR	7	46	50
POST HUNT YR	8	47	50
POST HUNT YR	9	48	50
POST HUNT YR	10	48	50

SAN LUIS RESERVOIR - SIMULATION RUNS,
General, SHARE,& PLM 2016 2016
Ratio = 22/100/32 - Maximum Calf Survival = 50%
THIS PROGRAM CALCULATES CHANGES IN HERD
CHARACTERISTICS BASED ON VARIOUS
HARVEST
RATES.

INCREASED HAREST: BULL, ANTLERLESS, EITHER-SEX
TO HARVEST UP TO 22 BULL & 45 ANTLERLESS (INCLUDES COOPERATIVE)
Various combination of tags to achieve harvest,
Assuming success rate of 70% bull and 50% antlerless

HERD SIZE	390	ELK
% BULLS LOST TO NON HUNTING CAUSES	25	%
% COWS LOST TO NON HUNTING CAUSES	10	%
% OF BULLS KILLED BY HUNTERS	32	%
% OF COWS KILLED BY HUNTERS	17	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	56	253	81	390	390	|	5	0
YEAR 1	"	68	264	127	459	800	|	22	45
YEAR 2	"	82	254	110	447	800	|	22	43
YEAR 3	"	87	239	106	432	800	|	22	41
YEAR 4	"	88	226	99	414	800	|	22	38
YEAR 5	"	87	214	94	395	800	|	22	36
YEAR 6	"	84	202	89	375	800	|	22	34
YEAR 7	"	80	191	84	355	800	|	22	32
YEAR 8	"	75	180	79	334	800	|	22	31
YEAR 9	"	69	170	75	315	800	|	22	29
YEAR 10	"	63	161	71	295	800	|	20	27

		BULL RATIO	CALF RATIO
START		22	32
POST HUNT YR	1	21	58
POST HUNT YR	2	29	52
POST HUNT YR	3	33	53
POST HUNT YR	4	35	53
POST HUNT YR	5	37	53
POST HUNT YR	6	37	53
POST HUNT YR	7	37	53
POST HUNT YR	8	35	53
POST HUNT YR	9	33	53
POST HUNT YR	10	32	53

SAN LUIS RESERVOIR - SIMULATION RUNS, GENERAL, SHARE, & PLM 2016
Ratio = 22/100/32 - Maximum Calf Survival = 50%
THIS PROGRAM CALCULATES CHANGES IN
HERD
CHARACTERISTICS BASED ON VARIOUS
HARVEST
RATES.

HERD GROWTH: BULL, ANTLERLESS, EITHER-SEX
TO HARVEST UP TO 24 BULL & 45 ANTLERLESS (INCLUDES COOPERATIVE)
Various combination of tags to achieve harvest,
Assuming success rate of 70% bull and 50% antlerless

HERD SIZE	600	ELK
% BULLS LOST TO NON HUNTING CAUSES	25	%
% COWS LOST TO NON HUNTING CAUSES	10	%
% OF BULLS KILLED BY HUNTERS	22	%
% OF COWS KILLED BY HUNTERS	11	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	86	390	125	600	600	|	5	0
YEAR 1	"	107	407	195	709	800	|	24	45
YEAR 2	"	136	413	181	730	800	|	24	45
YEAR 3	"	152	413	184	749	800	|	24	45
YEAR 4	"	165	413	184	762	800	|	24	45
YEAR 5	"	175	414	184	773	800	|	24	45
YEAR 6	"	183	414	184	781	800	|	24	45
YEAR 7	"	188	415	184	787	800	|	24	45
YEAR 8	"	193	415	185	793	800	|	24	45
YEAR 9	"	196	416	185	797	800	|	24	45
YEAR 10	"	199	417	185	800	800	|	24	45

		BULL RATIO	CALF RATIO
START		22	32
POST HUNT YR	1	23	54
POST HUNT YR	2	30	49
POST HUNT YR	3	35	50
POST HUNT YR	4	39	50
POST HUNT YR	5	41	50
POST HUNT YR	6	43	50
POST HUNT YR	7	45	50
POST HUNT YR	8	46	50
POST HUNT YR	9	47	50
POST HUNT YR	10	47	50

SAN LUIS RESERVOIR - SIMULATION RUNS, GENERAL, SHARE, & PLM 2016
Ratio = 22/100/32 - Maximum Calf Survival = 50%
THIS PROGRAM CALCULATES CHANGES IN
HERD
CHARACTERISTICS BASED ON VARIOUS
HARVEST
RATES.

REDUCED HARVEST: BULL, ANTLERLESS, EITHER-SEX (INCLUDES COOPERATIVE TAGS)
TO HARVEST UP TO 7 BULL AND 15 ANTLERLESS
Various combination of tags to achieve harvest,
Assuming success rate of 70% bull and 50% antlerless

HERD SIZE	390	ELK
% BULLS LOST TO NON HUNTING CAUSES	25	%
% COWS LOST TO NON HUNTING CAUSES	10	%
% OF BULLS KILLED BY HUNTERS	10.5	%
% OF COWS KILLED BY HUNTERS	5.6	%

		BULLS	COWS	SURV. CALVES	TOTAL	K	BULLS HARVEST	COWS HARVEST
START	AUG	56	253	81	390	390	5	0
YEAR 1	"	68	264	127	459	800	7	15
YEAR 2	"	93	282	125	500	800	7	15
YEAR 3	"	111	296	133	541	800	7	15
YEAR 4	"	128	313	141	582	800	7	15
YEAR 5	"	144	332	149	625	800	7	15
YEAR 6	"	158	353	159	670	800	7	15
YEAR 7	"	173	375	169	717	800	7	15
YEAR 8	"	188	401	180	768	800	7	15
YEAR 9	"	203	428	169	800	800	7	15
YEAR 10	"	210	448	142	800	800	7	15

		BULL RATIO	CALF RATIO
START		22	32
POST HUNT YR	1	25	51
POST HUNT YR	2	32	47
POST HUNT YR	3	37	47
POST HUNT YR	4	41	47
POST HUNT YR	5	43	47
POST HUNT YR	6	45	47
POST HUNT YR	7	46	47
POST HUNT YR	8	47	47
POST HUNT YR	9	47	41
POST HUNT YR	10	47	33

Bear Valley TULE ELK HERD - SIMULATION RUNS, GENERAL, SHARE, & PLM 2016
Ratio = 25/100/51 - Maximum Calf Survival = 67%
THIS PROGRAM CALCULATES CHANGES IN
HERD
CHARACTERISTICS BASED ON VARIOUS
HARVEST
RATES.

CURRENT CONDITION: BULL, COW,
TO HARVEST UP TO 3 BULLS & 2 COWS
Various combination of tags to achieved harvest,
Assuming success rate of 80% bull and 60% antlerless

HERD SIZE	225	ELK
% BULLS LOST TO NON HUNTING CAUSES	30	%
% COWS LOST TO NON HUNTING CAUSES	20	%
% OF BULLS KILLED BY HUNTERS	8	%
% OF COWS KILLED BY HUNTERS	1.5	%

		BULLS	COWS	SURV. CALVES	TOTAL	K	BULLS HARVEST	COWS HARVEST
START	AUG	32	128	65	225	225	3	2
YEAR 1	"	43	127	84	254	350	3	2
YEAR 2	"	57	134	84	275	350	3	2
YEAR 3	"	67	139	88	294	350	3	2
YEAR 4	"	75	145	92	312	350	3	2
YEAR 5	"	82	151	96	329	350	3	2
YEAR 6	"	89	158	100	346	350	3	2
YEAR 7	"	95	165	91	350	350	3	2
YEAR 8	"	96	166	88	350	350	3	2
YEAR 9	"	95	167	88	350	350	3	2
YEAR 10	"	95	167	88	350	350	3	2

		BULL RATIO	CALF RATIO
START		25	51
POST HUNT YR	1	32	68
POST HUNT YR	2	41	64
POST HUNT YR	3	46	64
POST HUNT YR	4	50	64
POST HUNT YR	5	53	64
POST HUNT YR	6	55	64
POST HUNT YR	7	56	56
POST HUNT YR	8	56	53
POST HUNT YR	9	56	53
POST HUNT YR	10	55	53

Bear Valley TULE ELK HERD - SIMULATION RUNS, GENERAL, SHARE, & PLM 2016
Ratio = 25/100/51 - Maximum Calf Survival = 67%
THIS PROGRAM CALCULATES CHANGES IN
HERD
CHARACTERISTICS BASED ON VARIOUS
HARVEST
RATES.

PROPOSED PROJECT: BULL, COW,
TO HARVEST UP TO 8 BULLS & 11 COWS, INCLUDES COOPERATIVE TAGS
Various combination of tags to achieved harvest,
Assuming success rate of 80% bull and 60% antlerless

HERD SIZE	225	ELK
% BULLS LOST TO NON HUNTING CAUSES	30	%
% COWS LOST TO NON HUNTING CAUSES	20	%
% OF BULLS KILLED BY HUNTERS	18	%
% OF COWS KILLED BY HUNTERS	8.5	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	32	128	65	225	225	|	3	2
YEAR 1	"	43	127	84	254	350	|	8	11
YEAR 2	"	54	127	78	258	350	|	8	11
YEAR 3	"	60	124	78	261	350	|	8	11
YEAR 4	"	64	121	76	261	350	|	8	11
YEAR 5	"	66	119	74	258	350	|	8	11
YEAR 6	"	66	116	72	255	350	|	8	11
YEAR 7	"	66	113	70	250	350	|	8	11
YEAR 8	"	66	110	69	244	350	|	8	11
YEAR 9	"	65	107	67	238	350	|	8	11
YEAR 10	"	63	103	64	231	350	|	8	11

		BULL RATIO	CALF RATIO
START		25	51
POST HUNT YR	1	30	73
POST HUNT YR	2	40	67
POST HUNT YR	3	46	69
POST HUNT YR	4	50	68
POST HUNT YR	5	54	69
POST HUNT YR	6	56	69
POST HUNT YR	7	57	69
POST HUNT YR	8	58	69
POST HUNT YR	9	59	69
POST HUNT YR	10	60	69

Bear Valley TULE ELK HERD - SIMULATION RUNS, GENERAL, SHARE, & PLM 2016
Ratio = 25/100/51 - Maximum Calf Survival = 67%
THIS PROGRAM CALCULATES CHANGES IN
HERD
CHARACTERISTICS BASED ON VARIOUS
HARVEST
RATES.

INCREASED HARVEST: BULL, COW,
TO HARVEST UP TO 12 BULLS & 16 COWS. INCLUDES COOPERATIVE TAGS
Various combination of tags to achieved harvest,
Assuming success rate of 80% bull and 60% antlerless

HERD SIZE	225	ELK
% BULLS LOST TO NON HUNTING CAUSES	30	%
% COWS LOST TO NON HUNTING CAUSES	20	%
% OF BULLS KILLED BY HUNTERS	27	%
% OF COWS KILLED BY HUNTERS	13	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	32	128	65	225	225	|	3	2
YEAR 1	"	43	127	84	254	350	|	12	16
YEAR 2	"	52	122	74	247	350	|	12	16
YEAR 3	"	54	114	71	238	350	|	12	16
YEAR 4	"	54	106	65	226	350	|	12	16
YEAR 5	"	53	98	60	211	350	|	12	16
YEAR 6	"	50	89	55	194	350	|	12	16
YEAR 7	"	46	80	49	175	350	|	12	16
YEAR 8	"	41	70	43	154	350	|	12	16
YEAR 9	"	35	60	36	132	350	|	12	16
YEAR 10	"	29	49	29	108	350	|	12	16

		BULL RATIO	CALF RATIO
START		25	51
POST HUNT YR	1	29	76
POST HUNT YR	2	38	70
POST HUNT YR	3	43	73
POST HUNT YR	4	47	73
POST HUNT YR	5	50	74
POST HUNT YR	6	52	75
POST HUNT YR	7	54	77
POST HUNT YR	8	54	79
POST HUNT YR	9	55	83
POST HUNT YR	10	54	89

Bear Valley TULE ELK HERD - SIMULATION RUNS, GENERAL, SHARE, & PLM 2016
Ratio = 25/100/51 - Maximum Calf Survival = 67%
THIS PROGRAM CALCULATES CHANGES IN
HERD
CHARACTERISTICS BASED ON VARIOUS
HARVEST
RATES.

HERD GROWTH: BULL, COW,
TO HARVEST UP TO 9 BULLS & 14 COWS. INCLUDES COOPERATIVE TAGS
Various combination of tags to achieved harvest,
Assuming success rate of 80% bull and 60% antlerless

HERD SIZE	300	ELK
% BULLS LOST TO NON HUNTING CAUSES	30	%
% COWS LOST TO NON HUNTING CAUSES	20	%
% OF BULLS KILLED BY HUNTERS	15	%
% OF COWS KILLED BY HUNTERS	8.5	%

		BULLS	COWS	SURV. CALVES	TOTAL	K	BULLS HARVEST	COWS HARVEST
START	AUG	43	170	87	300	300	3	2
YEAR 1	"	58	170	113	341	350	9	14
YEAR 2	"	74	169	104	347	350	9	14
YEAR 3	"	82	165	102	350	350	9	14
YEAR 4	"	87	162	101	350	350	9	14
YEAR 5	"	90	158	99	347	350	9	14
YEAR 6	"	92	155	96	343	350	9	14
YEAR 7	"	92	151	94	336	350	9	14
YEAR 8	"	91	147	91	329	350	9	14
YEAR 9	"	90	142	89	320	350	9	14
YEAR 10	"	88	138	86	311	350	9	14

		BULL RATIO	CALF RATIO
START		25	51
POST HUNT YR	1	32	73
POST HUNT YR	2	42	67
POST HUNT YR	3	49	68
POST HUNT YR	4	53	69
POST HUNT YR	5	57	69
POST HUNT YR	6	59	69
POST HUNT YR	7	61	69
POST HUNT YR	8	62	69
POST HUNT YR	9	63	69
POST HUNT YR	10	64	69

Bear Valley TULE ELK HERD - SIMULATION RUNS, GENERAL, SHARE, & PLM 2016
Ratio = 25/100/51 - Maximum Calf Survival = 67%
THIS PROGRAM CALCULATES CHANGES IN
HERD
CHARACTERISTICS BASED ON VARIOUS
HARVEST
RATES.

REDUCED HARVEST: BULL, COW,
TO HARVEST UP TO 4 BULLS & 5 COWS, INCLUDES COOPERATIVE TAGS
Various combination of tags to achieved harvest,
Assuming success rate of 80% bull and 60% antlerless

HERD SIZE	225	ELK
% BULLS LOST TO NON HUNTING CAUSES	30	%
% COWS LOST TO NON HUNTING CAUSES	20	%
% OF BULLS KILLED BY HUNTERS	9	%
% OF COWS KILLED BY HUNTERS	4	%

		BULLS	COWS	SURV. CALVES	TOTAL	K	BULLS HARVEST	COWS HARVEST
START	AUG	32	128	65	225	225	3	2
YEAR 1	"	43	127	84	254	350	4	5
YEAR 2	"	57	131	82	270	350	4	5
YEAR 3	"	66	133	84	284	350	4	5
YEAR 4	"	73	136	86	295	350	4	5
YEAR 5	"	78	139	88	306	350	4	5
YEAR 6	"	83	143	90	316	350	4	5
YEAR 7	"	87	146	92	325	350	4	5
YEAR 8	"	90	150	95	335	350	4	5
YEAR 9	"	94	154	97	344	350	4	5
YEAR 10	"	97	158	96	350	350	4	5

		BULL RATIO	CALF RATIO
START		25	51
POST HUNT YR	1	32	69
POST HUNT YR	2	42	65
POST HUNT YR	3	48	66
POST HUNT YR	4	52	65
POST HUNT YR	5	55	65
POST HUNT YR	6	57	65
POST HUNT YR	7	59	65
POST HUNT YR	8	60	65
POST HUNT YR	9	60	65
POST HUNT YR	10	61	63

LAKE PILLSBURY TULE ELK HERD - SIMULATION RUNS, GENERAL, SHARE, & PLM 2016
Ratio = 35/100/51 - Maximum Calf Survival = 53%
THIS PROGRAM CALCULATES CHANGES IN
HERD
CHARACTERISTICS BASED ON VARIOUS
HARVEST
RATES.

CURRENT CONDITION: HARVEST UP TO 2 BULL TAG 4 ANTLERLESS
NO CHANGE: HARVEST UP TO 2 BULL AND 4 ANTLERLESS
Various combination of tags to achieve harvest,
Assuming success rate of 80% bull and 60% antlerless

HERD SIZE	150	ELK
% BULLS LOST TO NON HUNTING CAUSES	20	%
% COWS LOST TO NON HUNTING CAUSES	15	%
% OF BULLS KILLED BY HUNTERS	4.1	%
% OF COWS KILLED BY HUNTERS	4.5	%

		BULLS	COWS	SURV. CALVES	TOTAL	K	BULLS HARVEST	COWS HARVEST
START	AUG	28	81	41	150	150	2	4
YEAR 1	"	37	83	41	161	200	2	4
YEAR 2	"	45	84	42	171	200	2	4
YEAR 3	"	51	86	43	180	200	2	4
YEAR 4	"	57	88	44	189	200	2	4
YEAR 5	"	62	90	45	197	200	2	4
YEAR 6	"	66	92	42	200	200	2	4
YEAR 7	"	68	93	39	200	200	2	4
YEAR 8	"	69	92	39	200	200	2	4
YEAR 9	"	70	91	39	200	200	2	4
YEAR 10	"	70	91	39	200	200	2	4

		BULL RATIO	CALF RATIO
START		35	51
POST HUNT YR	1	45	51
POST HUNT YR	2	54	52
POST HUNT YR	3	61	52
POST HUNT YR	4	66	52
POST HUNT YR	5	70	52
POST HUNT YR	6	73	48
POST HUNT YR	7	76	44
POST HUNT YR	8	77	45
POST HUNT YR	9	78	45
POST HUNT YR	10	79	45

LAKE PILLSBURY TULE ELK HERD - SIMULATION RUNS, GENERAL, SHARE, & PLM 2016
Ratio = 35/100/51 - Maximum Calf Survival = 53%
THIS PROGRAM CALCULATES CHANGES IN
HERD
CHARACTERISTICS BASED ON VARIOUS
HARVEST
RATES.

PROPOSED PROJECT: BULL & ANTLERLESS
TO HARVEST UP TO 6 BULL AND 7 ANTLERLESS
Various combination of tags to achieve harvest,
Assuming success rate of 90% bull and 90% antlerless

HERD SIZE	150	ELK
% BULLS LOST TO NON HUNTING CAUSES	20	%
% COWS LOST TO NON HUNTING CAUSES	15	%
% OF BULLS KILLED BY HUNTERS	15	%
% OF COWS KILLED BY HUNTERS	9	%

		BULLS	COWS	SURV. CALVES	TOTAL	K	BULLS HARVEST	COWS HARVEST
START	AUG	28	81	41	150	150	2	4
YEAR 1	"	37	83	41	161	200	6	7
YEAR 2	"	42	81	40	163	200	6	7
YEAR 3	"	45	80	39	164	200	6	7
YEAR 4	"	47	78	38	164	200	6	7
YEAR 5	"	49	77	38	163	200	6	7
YEAR 6	"	49	76	37	162	200	6	7
YEAR 7	"	50	74	36	161	200	6	7
YEAR 8	"	50	73	36	159	200	6	7
YEAR 9	"	50	72	35	157	200	6	6
YEAR 10	"	49	70	35	154	200	6	6

		BULL RATIO	CALF RATIO
START		35	51
POST HUNT YR	1	42	54
POST HUNT YR	2	49	54
POST HUNT YR	3	54	54
POST HUNT YR	4	58	54
POST HUNT YR	5	61	54
POST HUNT YR	6	64	54
POST HUNT YR	7	66	54
POST HUNT YR	8	67	54
POST HUNT YR	9	68	54
POST HUNT YR	10	68	54

LAKE PILLSBURY TULE ELK HERD - SIMULATION RUNS, GENERAL, SHARE, & PLM 2016
Ratio = 35/100/51 - Maximum Calf Survival = 53%
THIS PROGRAM CALCULATES CHANGES IN
HERD
CHARACTERISTICS BASED ON VARIOUS
HARVEST
RATES.

INCREASED HARVEST: BULL & ANTLERLESS
TO HARVEST UP TO 9 BULL AND 10 ANTLERLESS
Various combination of tags to achieve harvest,
Assuming success rate of 90% bull and 90% antlerless

HERD SIZE	150	ELK
% BULLS LOST TO NON HUNTING CAUSES	20	%
% COWS LOST TO NON HUNTING CAUSES	12	%
% OF BULLS KILLED BY HUNTERS	23	%
% OF COWS KILLED BY HUNTERS	12.2	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	28	81	41	150	150	|	2	4
YEAR 1	"	37	86	41	164	200	|	9	10
YEAR 2	"	39	84	40	163	200	|	9	10
YEAR 3	"	40	82	39	162	200	|	9	10
YEAR 4	"	40	81	38	160	200	|	9	10
YEAR 5	"	40	79	38	157	200	|	9	10
YEAR 6	"	40	78	37	155	200	|	9	9
YEAR 7	"	39	76	36	152	200	|	9	9
YEAR 8	"	39	75	36	149	200	|	9	9
YEAR 9	"	38	74	35	147	200	|	9	9
YEAR 10	"	37	72	34	144	200	|	9	9

		BULL RATIO	CALF RATIO
START		35	51
POST HUNT YR	1	38	54
POST HUNT YR	2	41	54
POST HUNT YR	3	43	54
POST HUNT YR	4	44	54
POST HUNT YR	5	44	54
POST HUNT YR	6	45	54
POST HUNT YR	7	45	54
POST HUNT YR	8	45	54
POST HUNT YR	9	45	54
POST HUNT YR	10	45	54

LAKE PILLSBURY TULE ELK HERD - SIMULATION RUNS, GENERAL, SHARE, & PLM 2016
Ratio = 35/100/51 - Maximum Calf Survival = 53%
THIS PROGRAM CALCULATES CHANGES IN
HERD
CHARACTERISTICS BASED ON VARIOUS
HARVEST
RATES.

HERD GROWTH: BULL & ANTLERLESS
TO HARVEST UP TO 8 BULL AND 10 ANTLERLESS
Various combination of tags to achieve harvest,
Assuming success rate of 90% bull and 90% antlerless

HERD SIZE	200	ELK
% BULLS LOST TO NON HUNTING CAUSES	20	%
% COWS LOST TO NON HUNTING CAUSES	15	%
% OF BULLS KILLED BY HUNTERS	15	%
% OF COWS KILLED BY HUNTERS	9	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	38	108	55	200	200	|	2	4
YEAR 1	"	50	111	38	200	200	|	8	10
YEAR 2	"	50	102	48	200	200	|	8	9
YEAR 3	"	53	100	48	200	200	|	8	9
YEAR 4	"	55	97	48	200	200	|	8	9
YEAR 5	"	57	95	47	199	200	|	8	9
YEAR 6	"	58	94	46	198	200	|	8	8
YEAR 7	"	59	92	45	196	200	|	8	8
YEAR 8	"	59	90	44	194	200	|	8	8
YEAR 9	"	59	89	44	192	200	|	8	8
YEAR 10	"	59	87	43	189	200	|	8	8

		BULL RATIO	CALF RATIO
START		35	51
POST HUNT YR	1	42	38
POST HUNT YR	2	45	52
POST HUNT YR	3	50	52
POST HUNT YR	4	54	54
POST HUNT YR	5	57	54
POST HUNT YR	6	60	54
POST HUNT YR	7	62	54
POST HUNT YR	8	63	54
POST HUNT YR	9	64	54
POST HUNT YR	10	64	54

LAKE PILLSBURY TULE ELK HERD - SIMULATION RUNS, GENERAL, SHARE, & PLM 2016
Ratio = 35/100/51 - Maximum Calf Survival = 53%
THIS PROGRAM CALCULATES CHANGES IN
HERD
CHARACTERISTICS BASED ON VARIOUS
HARVEST
RATES.

REDUCED HARVEST: BULL & ANTLERLESS
TO HARVEST UP TO 3 BULL AND 3 ANTLERLESS
Various combination of tags to achieve harvest,
Assuming success rate of 90% bull and 90% antlerless

HERD SIZE	150	ELK
% BULLS LOST TO NON HUNTING CAUSES	20	%
% COWS LOST TO NON HUNTING CAUSES	15	%
% OF BULLS KILLED BY HUNTERS	7.5	%
% OF COWS KILLED BY HUNTERS	3.5	%

		BULLS	COWS	SURV. CALVES	TOTAL	K	BULLS HARVEST	COWS HARVEST
START	AUG	28	81	41	150	150	2	4
YEAR 1	"	37	83	41	161	200	3	3
YEAR 2	"	44	85	42	171	200	3	3
YEAR 3	"	50	88	43	181	200	3	3
YEAR 4	"	55	90	45	190	200	3	3
YEAR 5	"	60	93	46	199	200	3	3
YEAR 6	"	64	96	40	200	200	3	3
YEAR 7	"	65	96	39	200	200	3	3
YEAR 8	"	65	95	39	200	200	3	3
YEAR 9	"	66	95	39	200	200	3	3
YEAR 10	"	66	95	39	200	200	3	3

		BULL RATIO	CALF RATIO
START		35	51
POST HUNT YR	1	43	51
POST HUNT YR	2	50	51
POST HUNT YR	3	56	51
POST HUNT YR	4	60	51
POST HUNT YR	5	63	51
POST HUNT YR	6	66	43
POST HUNT YR	7	67	43
POST HUNT YR	8	68	43
POST HUNT YR	9	69	43
POST HUNT YR	10	69	43

Santa Clara (PLM, SHARE, & GENERAL) - SIMULATION RUNS, 2016
Ratio = 43/100/40 - Maximum Calf Survival = 65%
THIS PROGRAM CALCULATES CHANGES IN
HERD
CHARACTERISTICS BASED ON VARIOUS
HARVEST
RATES.

CURRENT CONDITION: UP TO 10 BULL AND 8 ANTLERLESS
NO CHANGE: HARVEST UP TO 10 BULL AND 8 ANTLERLESS
Various combination of tags to achieve harvest,
Assuming success rate of 80% bull and 60% antlerless

HERD SIZE	160	ELK
% BULLS LOST TO NON HUNTING CAUSES	30	%
% COWS LOST TO NON HUNTING CAUSES	15	%
% OF BULLS KILLED BY HUNTERS	25	%
% OF COWS KILLED BY HUNTERS	8.5	%

		BULLS	COWS	SURV. CALVES	TOTAL	K	BULLS HARVEST	COWS HARVEST
START	AUG	37	85	38	160	160	0	0
YEAR 1	"	39	89	55	183	200	10	8
YEAR 2	"	40	92	53	185	200	10	8
YEAR 3	"	39	94	55	189	200	10	8
YEAR 4	"	40	97	56	193	200	10	8
YEAR 5	"	41	99	58	197	200	10	8
YEAR 6	"	42	101	57	200	200	10	8
YEAR 7	"	42	103	55	200	200	10	8
YEAR 8	"	42	104	55	200	200	10	8
YEAR 9	"	41	104	54	200	200	10	8
YEAR 10	"	41	105	54	200	200	10	8

		BULL RATIO	CALF RATIO
START		43	45
POST HUNT YR	1	36	68
POST HUNT YR	2	35	62
POST HUNT YR	3	34	64
POST HUNT YR	4	34	63
POST HUNT YR	5	34	63
POST HUNT YR	6	34	61
POST HUNT YR	7	34	58
POST HUNT YR	8	33	57
POST HUNT YR	9	33	57
POST HUNT YR	10	32	57

Santa Clara (PLM, SHARE & GENERAL) - SIMULATION RUNS, 2016
Ratio = 43/100/40 - Maximum Calf Survival = 65%
THIS PROGRAM CALCULATES CHANGES IN
HERD
CHARACTERISTICS BASED ON VARIOUS
HARVEST
RATES.

PROPOSED: BULL AND ANTLERLESS (INCLUDES COOPERATIVE)
HARVEST UP TO: 10 BULL AND 10 ANTLERLESS
Various combination of tags to achieve harvest,
Assuming success rate of 80% bull and 60% antlerless

HERD SIZE	160	ELK
% BULLS LOST TO NON HUNTING CAUSES	30	%
% COWS LOST TO NON HUNTING CAUSES	15	%
% OF BULLS KILLED BY HUNTERS	25	%
% OF COWS KILLED BY HUNTERS	11	%

		BULLS	COWS	SURV. CALVES	TOTAL	K	BULLS HARVEST	COWS HARVEST
START	AUG	37	85	38	160	160	0	0
YEAR 1	"	39	89	55	183	200	10	10
YEAR 2	"	40	91	51	182	200	10	10
YEAR 3	"	39	90	52	182	200	10	10
YEAR 4	"	39	91	52	182	200	10	10
YEAR 5	"	39	91	52	182	200	10	10
YEAR 6	"	39	91	52	182	200	10	10
YEAR 7	"	39	91	53	182	200	10	10
YEAR 8	"	39	91	53	183	200	10	10
YEAR 9	"	39	91	53	183	200	10	10
YEAR 10	"	39	92	53	183	200	10	10

		BULL RATIO	CALF RATIO
START		43	45
POST HUNT YR	1	37	70
POST HUNT YR	2	37	64
POST HUNT YR	3	36	65
POST HUNT YR	4	36	65
POST HUNT YR	5	36	65
POST HUNT YR	6	36	65
POST HUNT YR	7	36	65
POST HUNT YR	8	36	65
POST HUNT YR	9	36	65
POST HUNT YR	10	36	65

Santa Clara PLM, SHARE, & GENERAL) - SIMULATION RUNS,
2016

Ratio = 43/100/40 - Maximum Calf Survival = 65%
THIS PROGRAM CALCULATES CHANGES IN
HERD
CHARACTERISTICS BASED ON VARIOUS
HARVEST
RATES.

INCREASED HARVEST: BULL AND ANTLERLESS (INCLUDES COOPERATIVE)
HARVEST UP TO: 15 BULL AND 15 ANTLERLESS
Various combination of tags to achieve harvest,
Assuming success rate of 80% bull and 60% antlerless

HERD SIZE	160	ELK
% BULLS LOST TO NON HUNTING CAUSES	30	%
% COWS LOST TO NON HUNTING CAUSES	13	%
% OF BULLS KILLED BY HUNTERS	38	%
% OF COWS KILLED BY HUNTERS	16	%

		BULLS	COWS	SURV. CALVES	TOTAL	K	BULLS HARVEST	COWS HARVEST
START	AUG	37	85	38	160	160	0	0
YEAR 1	"	39	91	55	185	200	15	15
YEAR 2	"	36	90	50	176	200	14	14
YEAR 3	"	33	88	49	170	200	13	14
YEAR 4	"	32	85	48	165	200	12	14
YEAR 5	"	30	83	47	160	200	12	13
YEAR 6	"	30	81	45	156	200	11	13
YEAR 7	"	29	79	44	152	200	11	13
YEAR 8	"	28	77	43	148	200	11	12
YEAR 9	"	27	75	42	144	200	10	12
YEAR 10	"	27	73	41	141	200	10	12

		BULL RATIO	CALF RATIO
START		43	45
POST HUNT YR	1	32	73
POST HUNT YR	2	30	65
POST HUNT YR	3	28	67
POST HUNT YR	4	27	67
POST HUNT YR	5	27	67
POST HUNT YR	6	27	67
POST HUNT YR	7	27	67
POST HUNT YR	8	27	67
POST HUNT YR	9	27	67
POST HUNT YR	10	27	67

Santa Clara (PLM, SHARE & GENERAL) - SIMULATION RUNS, 2016
Ratio = 43/100/40 - Maximum Calf Survival = 65%
THIS PROGRAM CALCULATES CHANGES IN
HERD
CHARACTERISTICS BASED ON VARIOUS
HARVEST
RATES.

HERD GROWTH: BULL AND ANTLERLESS (INCLUDES COOPERATIVE)
HARVEST UP TO: 11 BULL AND 13 ANTLERLESS
Various combination of tags to achieve harvest,
Assuming success rate of 80% bull and 60% antlerless

HERD SIZE	200	ELK
% BULLS LOST TO NON HUNTING CAUSES	30	%
% COWS LOST TO NON HUNTING CAUSES	15	%
% OF BULLS KILLED BY HUNTERS	23	%
% OF COWS KILLED BY HUNTERS	12	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	46	106	48	200	200	|	0	0
YEAR 1	"	49	111	65	225	225	|	11	13
YEAR 2	"	49	111	63	223	225	|	11	13
YEAR 3	"	49	110	63	222	225	|	11	13
YEAR 4	"	48	109	63	220	225	|	11	13
YEAR 5	"	48	108	62	219	225	|	11	13
YEAR 6	"	48	107	62	217	225	|	11	13
YEAR 7	"	47	107	61	215	225	|	11	13
YEAR 8	"	47	106	61	214	225	|	11	13
YEAR 9	"	47	105	61	212	225	|	11	13
YEAR 10	"	46	104	60	211	225	|	11	13

		BULL RATIO	CALF RATIO
START		43	45
POST HUNT YR	1	39	67
POST HUNT YR	2	39	65
POST HUNT YR	3	39	66
POST HUNT YR	4	39	65
POST HUNT YR	5	39	65
POST HUNT YR	6	39	65
POST HUNT YR	7	39	65
POST HUNT YR	8	39	65
POST HUNT YR	9	39	65
POST HUNT YR	10	39	65

Santa Clara (PLM, SHARE, & GENERAL) - SIMULATION RUNS, 2016
Ratio = 43/100/40 - Maximum Calf Survival = 65%
THIS PROGRAM CALCULATES CHANGES IN
HERD
CHARACTERISTICS BASED ON VARIOUS
HARVEST
RATES.

REDUCED HARVEST: BULL AND ANTLERLESS (INCLUDES COOPERATIVE)
HARVEST UP TO: 5 BULL AND 5 ANTLERLESS
Various combination of tags to achieve harvest,
Assuming success rate of 80% bull and 60% antlerless

HERD SIZE	160	ELK
% BULLS LOST TO NON HUNTING CAUSES	30	%
% COWS LOST TO NON HUNTING CAUSES	15	%
% OF BULLS KILLED BY HUNTERS	12	%
% OF COWS KILLED BY HUNTERS	5.1	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	37	85	38	160	160	|	0	0
YEAR 1	"	39	89	55	183	200	|	5	5
YEAR 2	"	43	95	55	193	200	|	5	5
YEAR 3	"	46	100	54	200	200	|	5	5
YEAR 4	"	47	104	49	200	200	|	5	5
YEAR 5	"	47	104	49	200	200	|	5	5
YEAR 6	"	46	105	49	200	200	|	5	5
YEAR 7	"	46	105	49	200	200	|	5	5
YEAR 8	"	45	106	49	200	200	|	5	5
YEAR 9	"	45	106	49	200	200	|	5	5
YEAR 10	"	45	106	49	200	200	|	5	5

		BULL RATIO	CALF RATIO
START		43	45
POST HUNT YR	1	41	66
POST HUNT YR	2	42	61
POST HUNT YR	3	43	57
POST HUNT YR	4	43	50
POST HUNT YR	5	42	49
POST HUNT YR	6	41	49
POST HUNT YR	7	40	49
POST HUNT YR	8	40	49
POST HUNT YR	9	39	48
POST HUNT YR	10	39	48

ALAMEDA TULE ELK HERD , GENERAL, SHARE, & PLM - SIMULATION RUNS, 2016

Ratio = 43/100/40 - Maximum Calf Survival = 55%

THIS PROGRAM CALCULATES CHANGES IN
HERD
CHARACTERISTICS BASED ON VARIOUS
HARVEST
RATES.

CURRENT CONDITION: UP TO 3 BULL AND 2 ANTLERLESS
NO CHANGE: HARVEST UP TO 3 BULL AND 2 ANTLERLESS
Various combination of tags to achieve harvest,
Assuming success rate of 80% bull and 60% antlerless

HERD SIZE	100	ELK
% BULLS LOST TO NON HUNTING CAUSES	32	%
% COWS LOST TO NON HUNTING CAUSES	16.6	%
% OF BULLS KILLED BY HUNTERS	11	%
% OF COWS KILLED BY HUNTERS	2.9	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	23	55	22	100	100	|	0	0
YEAR 1	"	23	55	30	108	150	|	3	2
YEAR 2	"	24	57	29	110	150	|	3	2
YEAR 3	"	25	58	30	113	150	|	3	2
YEAR 4	"	25	60	31	116	150	|	3	2
YEAR 5	"	26	61	32	119	150	|	3	2
YEAR 6	"	27	63	33	122	150	|	3	2
YEAR 7	"	27	65	34	126	150	|	3	2
YEAR 8	"	28	66	35	129	150	|	3	2
YEAR 9	"	29	68	35	132	150	|	3	2
YEAR 10	"	29	70	36	136	150	|	3	2

		BULL RATIO	CALF RATIO
START		43	40
POST HUNT YR	1	39	57
POST HUNT YR	2	39	53
POST HUNT YR	3	39	54
POST HUNT YR	4	39	54
POST HUNT YR	5	39	54
POST HUNT YR	6	39	54
POST HUNT YR	7	39	54
POST HUNT YR	8	38	54
POST HUNT YR	9	38	54
POST HUNT YR	10	38	54

ALAMEDA TULE ELK HERD GENERAL, SHARE, & PLM - SIMULATION RUNS, 2016
Ratio = 43/100/40 - Maximum Calf Survival = 55%
THIS PROGRAM CALCULATES CHANGES IN
HERD
CHARACTERISTICS BASED ON VARIOUS
HARVEST
RATES.

PROPOSED: BULL AND ANTLERLESS
HARVEST UP TO 3 BULL AND 2 ANTLERLESS
Various combination of tags to achieve harvest,
Assuming success rate of 80% bull and 60% antlerless

HERD SIZE	100	ELK
% BULLS LOST TO NON HUNTING CAUSES	32	%
% COWS LOST TO NON HUNTING CAUSES	16.6	%
% OF BULLS KILLED BY HUNTERS	11	%
% OF COWS KILLED BY HUNTERS	2.9	%

		BULLS	COWS	SURV. CALVES	TOTAL	K	BULLS HARVEST	COWS HARVEST
START	AUG	23	55	22	100	100	0	0
YEAR 1	"	23	55	30	108	150	3	2
YEAR 2	"	24	57	29	110	150	3	2
YEAR 3	"	25	58	30	113	150	3	2
YEAR 4	"	25	60	31	116	150	3	2
YEAR 5	"	26	61	32	119	150	3	2
YEAR 6	"	27	63	33	122	150	3	2
YEAR 7	"	27	65	34	126	150	3	2
YEAR 8	"	28	66	35	129	150	3	2
YEAR 9	"	29	68	35	132	150	3	2
YEAR 10	"	29	70	36	136	150	3	2

		BULL RATIO	CALF RATIO
START		43	40
POST HUNT YR	1	39	57
POST HUNT YR	2	39	53
POST HUNT YR	3	39	54
POST HUNT YR	4	39	54
POST HUNT YR	5	39	54
POST HUNT YR	6	39	54
POST HUNT YR	7	39	54
POST HUNT YR	8	38	54
POST HUNT YR	9	38	54
POST HUNT YR	10	38	54

ALAMEDA TULE ELK HERD GENERAL, SHARE, & PLM - SIMULATION RUNS, 2016
Ratio = 43/100/40 - Maximum Calf Survival = 55%
THIS PROGRAM CALCULATES CHANGES IN
HERD
CHARACTERISTICS BASED ON VARIOUS
HARVEST
RATES.

INCREASED HARVEST: BULL AND ANTLERLESS
HARVEST UP TO 6 BULL AND 4 ANTLERLESS
Various combination of tags to achieve harvest,
Assuming success rate of 80% bull and 60% antlerless

HERD SIZE	100	ELK
% BULLS LOST TO NON HUNTING CAUSES	32	%
% COWS LOST TO NON HUNTING CAUSES	12	%
% OF BULLS KILLED BY HUNTERS	24	%
% OF COWS KILLED BY HUNTERS	6.5	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	23	55	22	100	100	|	0	0
YEAR 1	"	23	58	30	111	150	|	6	4
YEAR 2	"	22	61	30	113	150	|	5	4
YEAR 3	"	22	63	31	116	150	|	5	4
YEAR 4	"	22	66	32	120	150	|	5	4
YEAR 5	"	22	68	34	124	150	|	5	4
YEAR 6	"	23	71	35	129	150	|	6	4
YEAR 7	"	24	74	37	134	150	|	6	4
YEAR 8	"	25	77	38	140	150	|	6	4
YEAR 9	"	26	81	40	147	150	|	6	4
YEAR 10	"	27	85	38	150	150	|	6	4

		BULL RATIO	CALF RATIO
START		43	40
POST HUNT YR	1	33	56
POST HUNT YR	2	30	52
POST HUNT YR	3	28	53
POST HUNT YR	4	27	53
POST HUNT YR	5	27	53
POST HUNT YR	6	26	53
POST HUNT YR	7	26	53
POST HUNT YR	8	26	52
POST HUNT YR	9	26	52
POST HUNT YR	10	25	47

ALAMEDA TULE ELK HERD GENERAL, SHARE, & PLM - SIMULATION RUNS, 2016
Ratio = 43/100/40 - Maximum Calf Survival = 55%
THIS PROGRAM CALCULATES CHANGES IN
HERD
CHARACTERISTICS BASED ON VARIOUS
HARVEST
RATES.

HERD GROWTH: BULL AND ANTLERLESS
HARVEST UP TO 4 BULL AND 6 ANTLERLESS
Various combination of tags to achieve harvest,
Assuming success rate of 80% bull and 60% antlerless

HERD SIZE	150	ELK
% BULLS LOST TO NON HUNTING CAUSES	32	%
% COWS LOST TO NON HUNTING CAUSES	16.6	%
% OF BULLS KILLED BY HUNTERS	11	%
% OF COWS KILLED BY HUNTERS	7	%
	7	

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	35	82	33	150	150	|	0	0
YEAR 1	"	35	82	33	150	150	|	4	6
YEAR 2	"	32	77	40	150	150	|	4	5
YEAR 3	"	33	77	40	150	150	|	4	5
YEAR 4	"	34	76	39	149	150	|	4	5
YEAR 5	"	34	75	39	148	150	|	4	5
YEAR 6	"	34	75	39	147	150	|	4	5
YEAR 7	"	33	74	38	146	150	|	4	5
YEAR 8	"	33	73	38	144	150	|	4	5
YEAR 9	"	33	73	37	143	150	|	4	5
YEAR 10	"	33	72	37	142	150	|	4	5

		BULL RATIO	CALF RATIO
START		43	40
POST HUNT YR	1	41	43
POST HUNT YR	2	40	56
POST HUNT YR	3	42	55
POST HUNT YR	4	42	56
POST HUNT YR	5	43	56
POST HUNT YR	6	43	56
POST HUNT YR	7	43	56
POST HUNT YR	8	43	56
POST HUNT YR	9	43	56
POST HUNT YR	10	43	56

ALAMEDA TULE ELK HERD GENERAL, SHARE, & PLM - SIMULATION RUNS, 2016
Ratio = 43/100/40 - Maximum Calf Survival = 55%
THIS PROGRAM CALCULATES CHANGES IN
HERD
CHARACTERISTICS BASED ON VARIOUS
HARVEST
RATES.

REDUCED HARVEST: BULL AND ANTLERLESS
HARVEST UP TO 2 BULL AND 1 ANTLERLESS
Various combination of tags to achieve harvest,
Assuming success rate of 80% bull and 60% antlerless

HERD SIZE	100	ELK
% BULLS LOST TO NON HUNTING CAUSES	32	%
% COWS LOST TO NON HUNTING CAUSES	16.6	%
% OF BULLS KILLED BY HUNTERS	6	%
% OF COWS KILLED BY HUNTERS	1.5	%

		BULLS	COWS	SURV. CALVES	TOTAL	K	BULLS HARVEST	COWS HARVEST
START	AUG	23	55	22	100	100	0	0
YEAR 1	"	23	55	30	108	150	1	1
YEAR 2	"	25	57	30	112	150	2	1
YEAR 3	"	26	60	31	117	150	2	1
YEAR 4	"	27	62	32	121	150	2	1
YEAR 5	"	28	64	34	126	150	2	1
YEAR 6	"	30	67	35	131	150	2	1
YEAR 7	"	31	69	36	136	150	2	1
YEAR 8	"	32	72	38	142	150	2	1
YEAR 9	"	33	75	39	147	150	2	1
YEAR 10	"	35	78	38	150	150	2	1

		BULL RATIO	CALF RATIO
START		43	40
POST HUNT YR	1	41	56
POST HUNT YR	2	42	52
POST HUNT YR	3	42	53
POST HUNT YR	4	42	53
POST HUNT YR	5	42	53
POST HUNT YR	6	42	53
POST HUNT YR	7	42	53
POST HUNT YR	8	42	53
POST HUNT YR	9	42	53
POST HUNT YR	10	42	49

SAN EMIGDIO ELK HERD - SIMULATION RUNS, 2016
Ratio = 52/100/20 - Maximum Calf Survival = 67%
THIS PROGRAM CALCULATES CHANGES IN HERD
CHARACTERISTICS BASED ON VARIOUS HARVEST RATES.

CURRENT CONDITION: NO HUNTING

HERD SIZE	360	ELK
% BULLS LOST TO NON HUNTING CAUSES	25	%
% COWS LOST TO NON HUNTING CAUSES	12	%
% OF BULLS KILLED BY HUNTERS	0	%
% OF COWS KILLED BY HUNTERS	0	%

		BULLS	COWS	SURV. CALVES	TOTAL	K	BULLS HARVEST	COWS HARVEST
START	AUG	109	209	42	360	360	0	0
YEAR 1	"	97	203	140	440	600	0	0
YEAR 2	"	126	240	136	501	600	0	0
YEAR 3	"	145	271	161	577	600	0	0
YEAR 4	"	169	309	122	600	600	0	0
YEAR 5	"	172	326	102	600	600	0	0
YEAR 6	"	168	331	101	600	600	0	0
YEAR 7	"	164	336	100	600	600	0	0
YEAR 8	"	160	340	100	600	600	0	0
YEAR 9	"	158	343	99	600	600	0	0
YEAR 10	"	155	346	99	600	600	0	0

		BULL RATIO	CALF RATIO
START		52	20
POST HUNT YR	1	48	69
POST HUNT YR	2	52	57
POST HUNT YR	3	54	59
POST HUNT YR	4	55	39
POST HUNT YR	5	53	31
POST HUNT YR	6	51	30
POST HUNT YR	7	49	30
POST HUNT YR	8	47	29
POST HUNT YR	9	46	29
POST HUNT YR	10	45	29

SAN EMIGDIO ELK HERD - SIMULATION RUNS, GENERAL, SHARE, & PLM 2016
Ratio = 52/100/20 - Maximum Calf Survival = 67%
THIS PROGRAM CALCULATES CHANGES IN
HERD
CHARACTERISTICS BASED ON VARIOUS HARVEST RATES.

PROPOSED PROJECT: BULL, COW, INCLUDING COOPERATIVE
TAGS
TO HARVEST UP TO 10 BULLS & 24 ANTLERLESS
Various combination of tags to achieved harvest, includes cooperative tags
Assuming success rate of 80% bull and 75% antlerless

HERD SIZE	360	ELK
% BULLS LOST TO NON HUNTING CAUSES	25	%
% COWS LOST TO NON HUNTING CAUSES	12	%
% OF BULLS KILLED BY HUNTERS	10	%
% OF COWS KILLED BY HUNTERS	12	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	109	209	42	360	360	|	0	0
YEAR 1	"	97	203	140	440	600	|	10	24
YEAR 2	"	118	219	119	456	600	|	10	24
YEAR 3	"	126	224	130	480	600	|	10	24
YEAR 4	"	136	233	133	502	600	|	10	24
YEAR 5	"	145	242	140	526	600	|	10	24
YEAR 6	"	154	253	146	553	600	|	10	24
YEAR 7	"	163	265	153	581	600	|	10	24
YEAR 8	"	172	280	148	600	600	|	10	24
YEAR 9	"	177	290	133	600	600	|	10	24
YEAR 10	"	176	292	132	600	600	|	10	24

		BULL RATIO	CALF RATIO
START		52	20
POST HUNT YR	1	49	79
POST HUNT YR	2	56	61
POST HUNT YR	3	58	65
POST HUNT YR	4	61	64
POST HUNT YR	5	62	64
POST HUNT YR	6	63	64
POST HUNT YR	7	63	64
POST HUNT YR	8	64	58
POST HUNT YR	9	63	50
POST HUNT YR	10	62	49

SAN EMIGDIO ELK HERD - SIMULATION RUNS, GENERAL, SHARE, & PLM 2016
Ratio = 52/100/20 - Maximum Calf Survival = 67%
THIS PROGRAM CALCULATES CHANGES IN
HERD
CHARACTERISTICS BASED ON VARIOUS HARVEST RATES.

INCREASED HARVEST: BULL, COW, EITHER SEX TAGS; INCLUDING COOPERATIVE TAGS
TO HARVEST UP TO 15 BULLS & 36 COWS
Various combination of tags to achieved harvest, includes cooperative tags
Assuming success rate of 80% bull and 75% antlerless

HERD SIZE	360	ELK
% BULLS LOST TO NON HUNTING CAUSES	25	%
% COWS LOST TO NON HUNTING CAUSES	12	%
% OF BULLS KILLED BY HUNTERS	15	%
% OF COWS KILLED BY HUNTERS	17.7	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	109	209	42	360	360	|	0	0
YEAR 1	"	97	203	140	440	600	|	15	36
YEAR 2	"	115	208	112	435	600	|	15	36
YEAR 3	"	117	201	116	434	600	|	15	36
YEAR 4	"	120	196	111	427	600	|	15	36
YEAR 5	"	121	190	107	418	600	|	15	36
YEAR 6	"	120	183	103	406	600	|	15	36
YEAR 7	"	118	175	98	391	600	|	15	36
YEAR 8	"	114	165	93	373	600	|	15	36
YEAR 9	"	110	155	87	351	600	|	15	36
YEAR 10	"	104	143	80	326	600	|	15	36

		BULL RATIO	CALF RATIO
START		52	20
POST HUNT YR	1	50	84
POST HUNT YR	2	58	65
POST HUNT YR	3	62	70
POST HUNT YR	4	66	69
POST HUNT YR	5	69	70
POST HUNT YR	6	72	70
POST HUNT YR	7	74	71
POST HUNT YR	8	77	72
POST HUNT YR	9	80	73
POST HUNT YR	10	83	74

SAN EMIGDIO ELK HERD - SIMULATION RUNS, GENERAL, SHARE, & PLM 2016
Ratio = 52/100/20 - Maximum Calf Survival = 67%
THIS PROGRAM CALCULATES CHANGES IN
HERD
CHARACTERISTICS BASED ON VARIOUS HARVEST RATES.

HERD GROWTH: BULL, COW, EITHER SEX TAGS; INCLUDING COOPERATIVE TAGS
TO HARVEST UP TO 25 BULLS & 42 COWS
Various combination of tags to achieved harvest, includes cooperative tags
Assuming success rate of 80% bull and 75% antlerless

HERD SIZE	600	ELK
% BULLS LOST TO NON HUNTING CAUSES	25	%
% COWS LOST TO NON HUNTING CAUSES	12	%
% OF BULLS KILLED BY HUNTERS	15.5	%
% OF COWS KILLED BY HUNTERS	12.5	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	181	349	70	600	600	|	0	0
YEAR 1	"	162	338	100	600	600	|	25	42
YEAR 2	"	140	304	156	600	600	|	25	42
YEAR 3	"	145	299	156	600	600	|	25	42
YEAR 4	"	148	295	157	600	600	|	25	42
YEAR 5	"	151	291	157	600	600	|	25	42
YEAR 6	"	154	288	158	600	600	|	25	42
YEAR 7	"	156	286	158	600	600	|	25	42
YEAR 8	"	157	284	159	600	600	|	25	42
YEAR 9	"	158	283	159	600	600	|	25	42
YEAR 10	"	160	282	159	600	600	|	25	42

		BULL RATIO	CALF RATIO
START		52	20
POST HUNT YR	1	46	34
POST HUNT YR	2	44	59
POST HUNT YR	3	47	61
POST HUNT YR	4	49	62
POST HUNT YR	5	51	63
POST HUNT YR	6	52	64
POST HUNT YR	7	53	65
POST HUNT YR	8	55	65
POST HUNT YR	9	55	66
POST HUNT YR	10	56	66

SAN EMIGDIO ELK HERD - SIMULATION RUNS, GENERAL, SHARE, & PLM 2016
Ratio = 52/100/20 - Maximum Calf Survival = 67%
THIS PROGRAM CALCULATES CHANGES IN
HERD
CHARACTERISTICS BASED ON VARIOUS HARVEST RATES.

REDUCED HARVEST: BULL, COW, INCLUDING COOPERATIVE TAGS
TO HARVEST UP TO 5 BULLS & 12 ANTLERLESS
Various combination of tags to achieved harvest, includes cooperative tags
Assuming success rate of 80% bull and 75% antlerless

HERD SIZE	360	ELK
% BULLS LOST TO NON HUNTING CAUSES	25	%
% COWS LOST TO NON HUNTING CAUSES	12	%
% OF BULLS KILLED BY HUNTERS	5	%
% OF COWS KILLED BY HUNTERS	6	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	109	209	42	360	360	|	0	0
YEAR 1	"	97	203	140	440	600	|	5	12
YEAR 2	"	122	229	128	479	600	|	5	12
YEAR 3	"	136	247	145	528	600	|	5	12
YEAR 4	"	153	271	157	581	600	|	5	12
YEAR 5	"	170	297	133	600	600	|	5	12
YEAR 6	"	174	309	117	600	600	|	5	12
YEAR 7	"	171	313	117	600	600	|	5	12
YEAR 8	"	168	316	116	600	600	|	5	12
YEAR 9	"	166	318	116	600	600	|	5	12
YEAR 10	"	164	320	115	600	600	|	5	12

		BULL RATIO	CALF RATIO
START		52	20
POST HUNT YR	1	49	74
POST HUNT YR	2	54	59
POST HUNT YR	3	56	62
POST HUNT YR	4	57	61
POST HUNT YR	5	58	47
POST HUNT YR	6	57	39
POST HUNT YR	7	55	39
POST HUNT YR	8	54	38
POST HUNT YR	9	53	38
POST HUNT YR	10	52	37

CAMP ROBERTS ELK HERD - SIMULATION RUNS, GENERAL AND MILITARY 2016
Ratio = 30/100/30 - Maximum Calf Survival = 67%
THIS PROGRAM CALCULATES CHANGES IN
HERD
CHARACTERISTICS BASED ON VARIOUS HARVEST RATES.

CURRENT CONDITION:
NO HARVEST

HERD SIZE	300	ELK
% BULLS LOST TO NON HUNTING CAUSES	20	%
% COWS LOST TO NON HUNTING CAUSES	12	%
% OF BULLS KILLED BY HUNTERS	0	%
% OF COWS KILLED BY HUNTERS	0	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	56	188	56	300	300	|	0	0
YEAR 1	"	68	190	126	383	1000	|	0	0
YEAR 2	"	104	222	127	454	1000	|	0	0
YEAR 3	"	134	252	149	535	1000	|	0	0
YEAR 4	"	167	287	169	622	1000	|	0	0
YEAR 5	"	201	327	192	720	1000	|	0	0
YEAR 6	"	238	372	219	828	1000	|	0	0
YEAR 7	"	278	424	249	950	1000	|	0	0
YEAR 8	"	322	482	196	1000	1000	|	0	0
YEAR 9	"	336	511	154	1000	1000	|	0	0
YEAR 10	"	330	517	153	1000	1000	|	0	0

		BULL RATIO	CALF RATIO
START		30	30
POST HUNT YR	1	36	66
POST HUNT YR	2	47	57
POST HUNT YR	3	53	59
POST HUNT YR	4	58	59
POST HUNT YR	5	62	59
POST HUNT YR	6	64	59
POST HUNT YR	7	66	59
POST HUNT YR	8	67	41
POST HUNT YR	9	66	30
POST HUNT YR	10	64	30

CAMP ROBERTS ELK HERD - SIMULATION RUNS, GENERAL, SHARE, AND MILITARY 2016
Ratio = 30/100/30 - Maximum Calf Survival = 67%
THIS PROGRAM CALCULATES CHANGES IN
HERD
CHARACTERISTICS BASED ON VARIOUS HARVEST RATES.

PROPOSED: BULL, COW, EITHER SEX TAGS; MILITARY AND
GENERAL
HARVEST UP TO 15 BULL & 30 ANTLERLESS
Various combination of tags to achieved harvest
Approximate success rate of 70% bull and 60% antlerless

HERD SIZE	300	ELK
% BULLS LOST TO NON HUNTING CAUSES	20	%
% COWS LOST TO NON HUNTING CAUSES	12	%
% OF BULLS KILLED BY HUNTERS	22	%
% OF COWS KILLED BY HUNTERS	16	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	56	188	56	300	300	|	0	0
YEAR 1	"	68	190	126	383	1000	|	15	30
YEAR 2	"	92	196	107	395	1000	|	15	30
YEAR 3	"	105	192	111	408	1000	|	15	30
YEAR 4	"	116	191	109	416	1000	|	15	30
YEAR 5	"	124	189	108	422	1000	|	15	30
YEAR 6	"	131	187	107	425	1000	|	15	30
YEAR 7	"	135	185	105	426	1000	|	15	30
YEAR 8	"	138	182	104	424	1000	|	15	30
YEAR 9	"	140	179	102	422	1000	|	15	30
YEAR 10	"	141	176	100	417	1000	|	15	30

		BULL RATIO	CALF RATIO
START		30	30
POST HUNT YR	1	33	79
POST HUNT YR	2	47	65
POST HUNT YR	3	55	68
POST HUNT YR	4	63	67
POST HUNT YR	5	69	68
POST HUNT YR	6	74	68
POST HUNT YR	7	78	68
POST HUNT YR	8	81	68
POST HUNT YR	9	84	68
POST HUNT YR	10	87	69

CAMP ROBERTS ELK HERD - SIMULATION RUNS, GENERAL, SHARE, AND MILITARY 2016
Ratio = 30/100/30 - Maximum Calf Survival = 67%
THIS PROGRAM CALCULATES CHANGES IN
HERD
CHARACTERISTICS BASED ON VARIOUS HARVEST RATES.

INCREASED HARVEST: BULL, COW, EITHER SEX TAGS; MILITARY AND GENERAL
HARVEST UP TO 22 BULL & 45 ANTLERLESS
Various combination of tags to achieved harvest,
Approximate success rate of 70% bull and 60% antlerless

HERD SIZE	300	ELK
% BULLS LOST TO NON HUNTING CAUSES	20	%
% COWS LOST TO NON HUNTING CAUSES	12	%
% OF BULLS KILLED BY HUNTERS	32	%
% OF COWS KILLED BY HUNTERS	23.5	%

		BULLS	COWS	SURV. CALVES	TOTAL	K	|	BULLS HARVEST	COWS HARVEST
START	AUG	56	188	56	300	300	|	0	0
YEAR 1	"	68	190	126	383	1000	|	22	45
YEAR 2	"	87	183	97	367	1000	|	22	45
YEAR 3	"	91	165	93	349	1000	|	22	45
YEAR 4	"	93	146	80	320	1000	|	22	45
YEAR 5	"	89	125	68	282	1000	|	22	45
YEAR 6	"	81	101	54	236	1000	|	22	45
YEAR 7	"	69	73	38	180	1000	|	22	45
YEAR 8	"	53	42	19	114	1000	|	22	45
YEAR 9	"	33	6	-2	37	1000	|	22	45
YEAR 10	"	8	-35	-26	-53	1000	|	22	45

		BULL RATIO	CALF RATIO
START		30	30
POST HUNT YR	1	32	87
POST HUNT YR	2	47	70
POST HUNT YR	3	58	77
POST HUNT YR	4	70	79
POST HUNT YR	5	84	85
POST HUNT YR	6	106	96
POST HUNT YR	7	167	132
POST HUNT YR	8	-1087	-658
POST HUNT YR	9	-29	5
POST HUNT YR	10	17	33

CAMP ROBERTS ELK HERD - SIMULATION RUNS, GENERAL, SHARE, AND MILITARY 2016
Ratio = 30/100/30 - Maximum Calf Survival = 67%
THIS PROGRAM CALCULATES CHANGES IN
HERD
CHARACTERISTICS BASED ON VARIOUS HARVEST RATES.

HERD GROWTH: BULL, COW, EITHER SEX TAGS; MILITARY AND GENERAL
HARVEST UP TO 28 BULL & 47 ANTLERLESS
Various combination of tags to achieved harvest,
Approximate success rate of 70% bull and 60% antlerless

HERD SIZE	500	ELK
% BULLS LOST TO NON HUNTING CAUSES	20	%
% COWS LOST TO NON HUNTING CAUSES	12	%
% OF BULLS KILLED BY HUNTERS	25	%
% OF COWS KILLED BY HUNTERS	15	%

		BULLS	COWS	SURV. CALVES	TOTAL	K		BULLS HARVEST	COWS HARVEST
START	AUG	94	313	94	500	500	|	0	0
YEAR 1	"	113	316	209	638	1000	|	28	47
YEAR 2	"	151	329	180	660	1000	|	28	47
YEAR 3	"	171	327	188	686	1000	|	28	47
YEAR 4	"	189	329	187	705	1000	|	28	47
YEAR 5	"	204	330	188	722	1000	|	28	47
YEAR 6	"	216	331	189	737	1000	|	28	47
YEAR 7	"	226	333	190	749	1000	|	28	47
YEAR 8	"	234	335	191	761	1000	|	28	47
YEAR 9	"	242	337	193	772	1000	|	28	47
YEAR 10	"	248	340	194	782	1000	|	28	47

		BULL RATIO	CALF RATIO
START		30	30
POST HUNT YR	1	31	78
POST HUNT YR	2	44	64
POST HUNT YR	3	51	67
POST HUNT YR	4	57	67
POST HUNT YR	5	62	67
POST HUNT YR	6	66	67
POST HUNT YR	7	69	67
POST HUNT YR	8	72	67
POST HUNT YR	9	74	66
POST HUNT YR	10	75	66

CAMP ROBERTS ELK HERD - SIMULATION RUNS, GENERAL, SHARE, AND MILITARY 2016
Ratio = 30/100/30 - Maximum Calf Survival = 67%
THIS PROGRAM CALCULATES CHANGES IN
HERD
CHARACTERISTICS BASED ON VARIOUS HARVEST RATES.

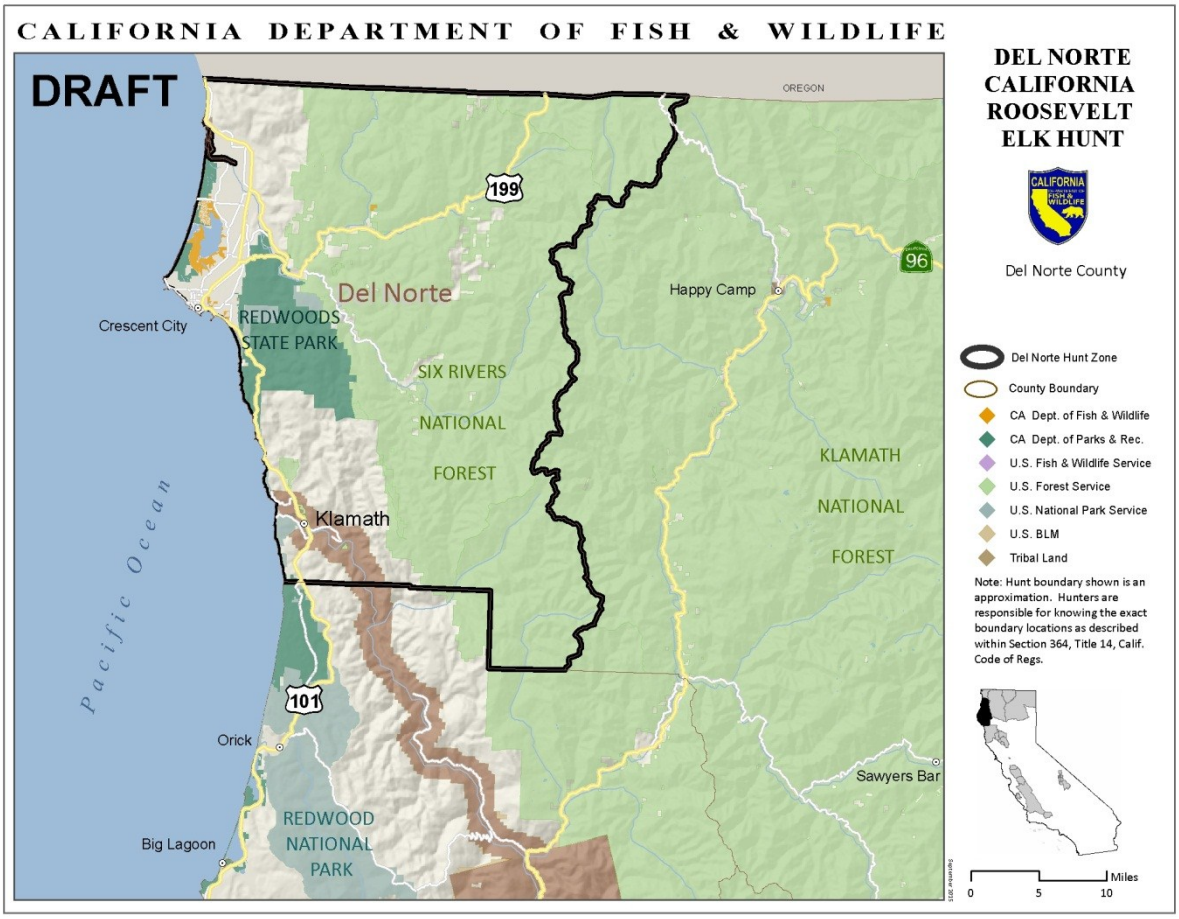
REDUCED HARVEST: BULL, COW, EITHER SEX TAGS; MILITARY AND GENERAL
HARVEST UP TO 7 BULL & 15 ANTLERLESS
Various combination of tags to achieved harvest
Approximate success rate of 70% bull and 60% antlerless

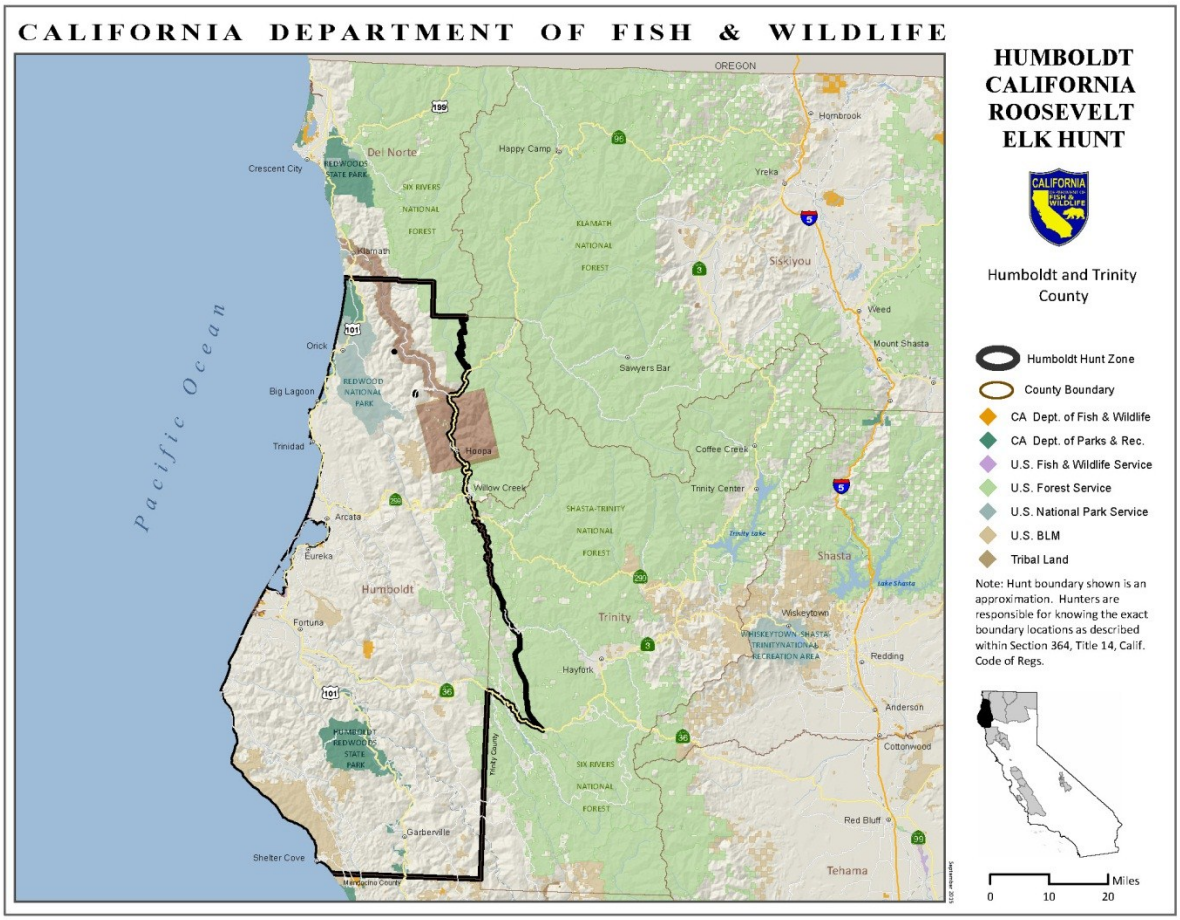
HERD SIZE	300	ELK
% BULLS LOST TO NON HUNTING CAUSES	20	%
% COWS LOST TO NON HUNTING CAUSES	12	%
% OF BULLS KILLED BY HUNTERS	11	%
% OF COWS KILLED BY HUNTERS	8	%

		BULLS	COWS	SURV. CALVES	TOTAL	K	BULLS HARVEST	COWS HARVEST
START	AUG	56	188	56	300	300	0	0
YEAR 1	"	68	190	126	383	1000	7	15
YEAR 2	"	98	209	117	424	1000	7	15
YEAR 3	"	119	222	130	471	1000	7	15
YEAR 4	"	142	239	139	519	1000	7	15
YEAR 5	"	163	258	150	571	1000	7	15
YEAR 6	"	184	280	163	627	1000	7	15
YEAR 7	"	207	304	177	688	1000	7	15
YEAR 8	"	230	332	194	756	1000	7	15
YEAR 9	"	256	364	213	833	1000	7	15
YEAR 10	"	284	401	234	918	1000	7	15

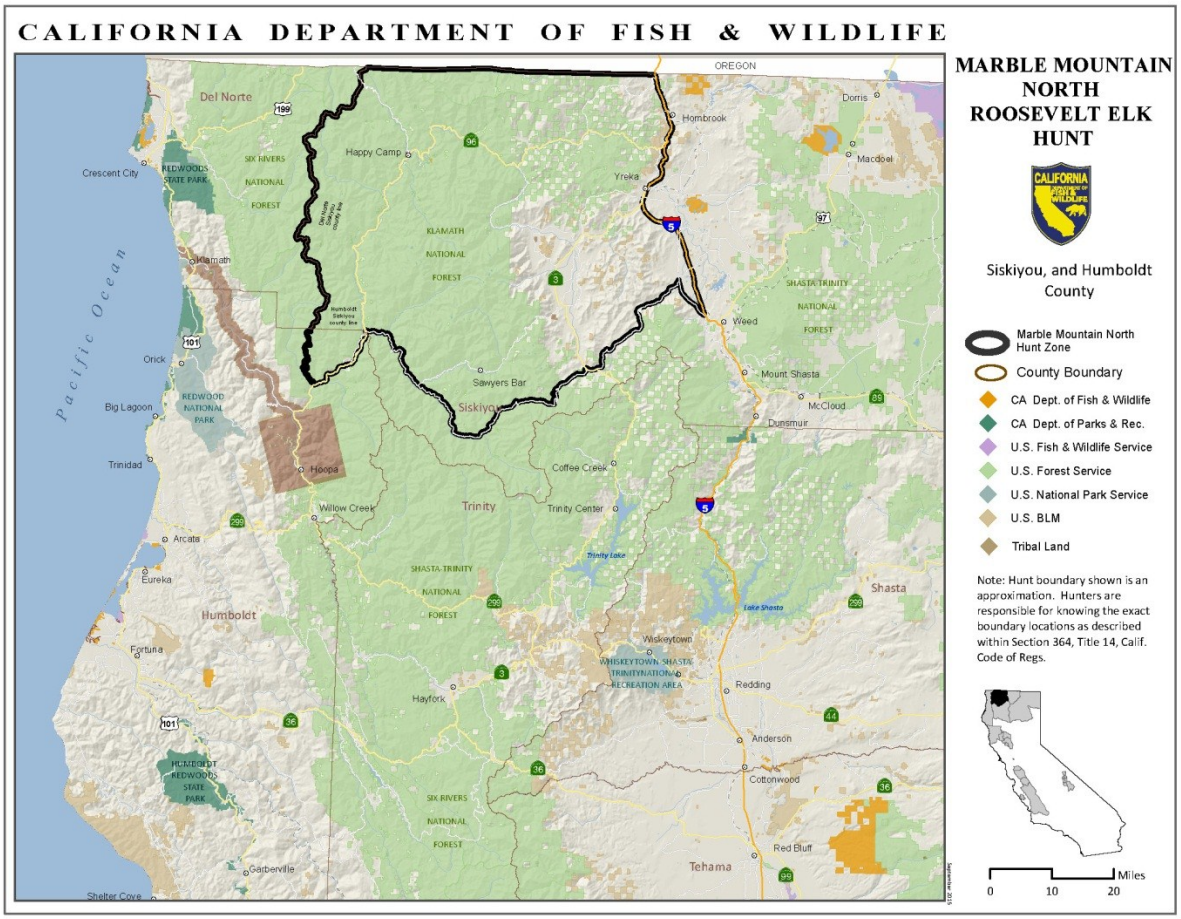
		BULL RATIO	CALF RATIO
START		30	30
POST HUNT YR	1	34	72
POST HUNT YR	2	47	60
POST HUNT YR	3	54	63
POST HUNT YR	4	60	62
POST HUNT YR	5	64	62
POST HUNT YR	6	67	62
POST HUNT YR	7	69	61
POST HUNT YR	8	70	61
POST HUNT YR	9	71	61
POST HUNT YR	10	72	61

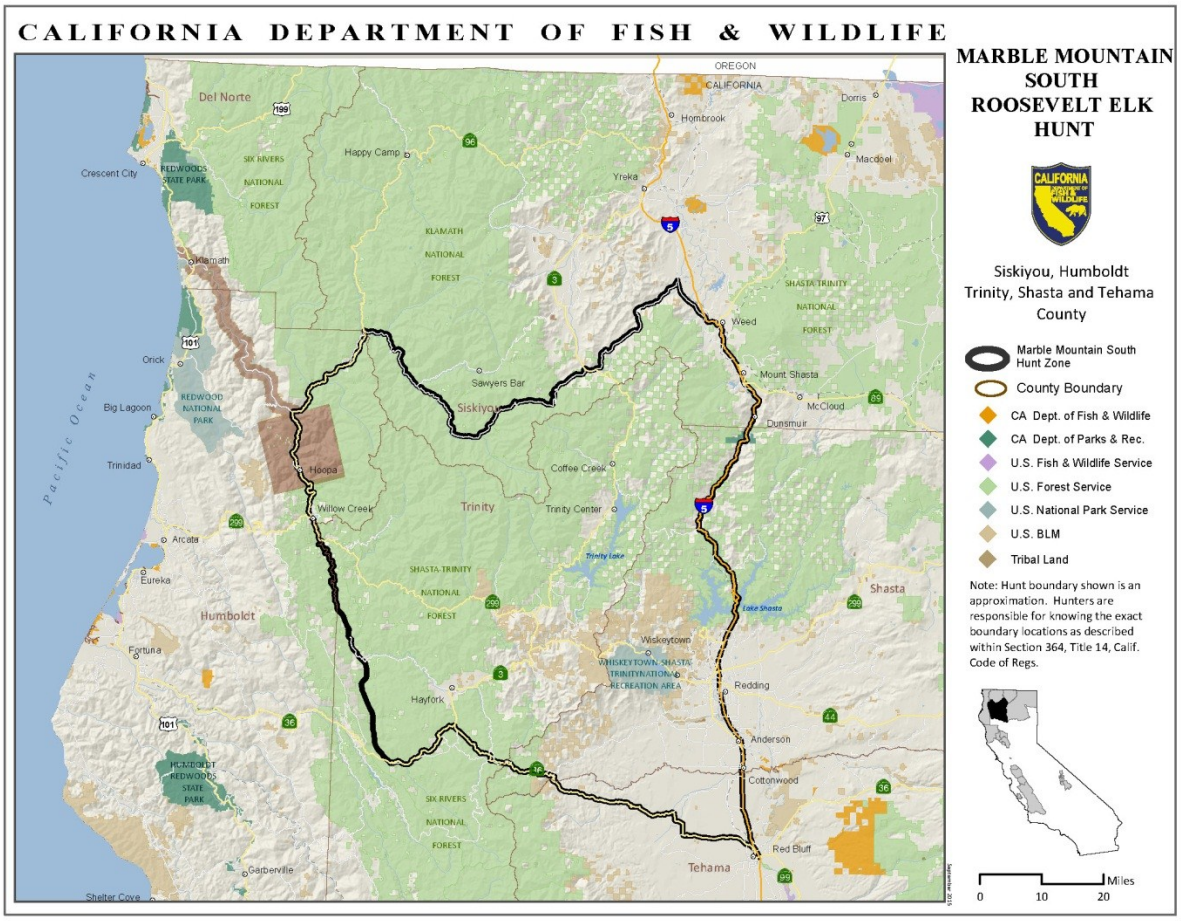
Appendix 5. Hunt Boundary Maps for Del Norte and Humboldt Roosevelt Elk Zones



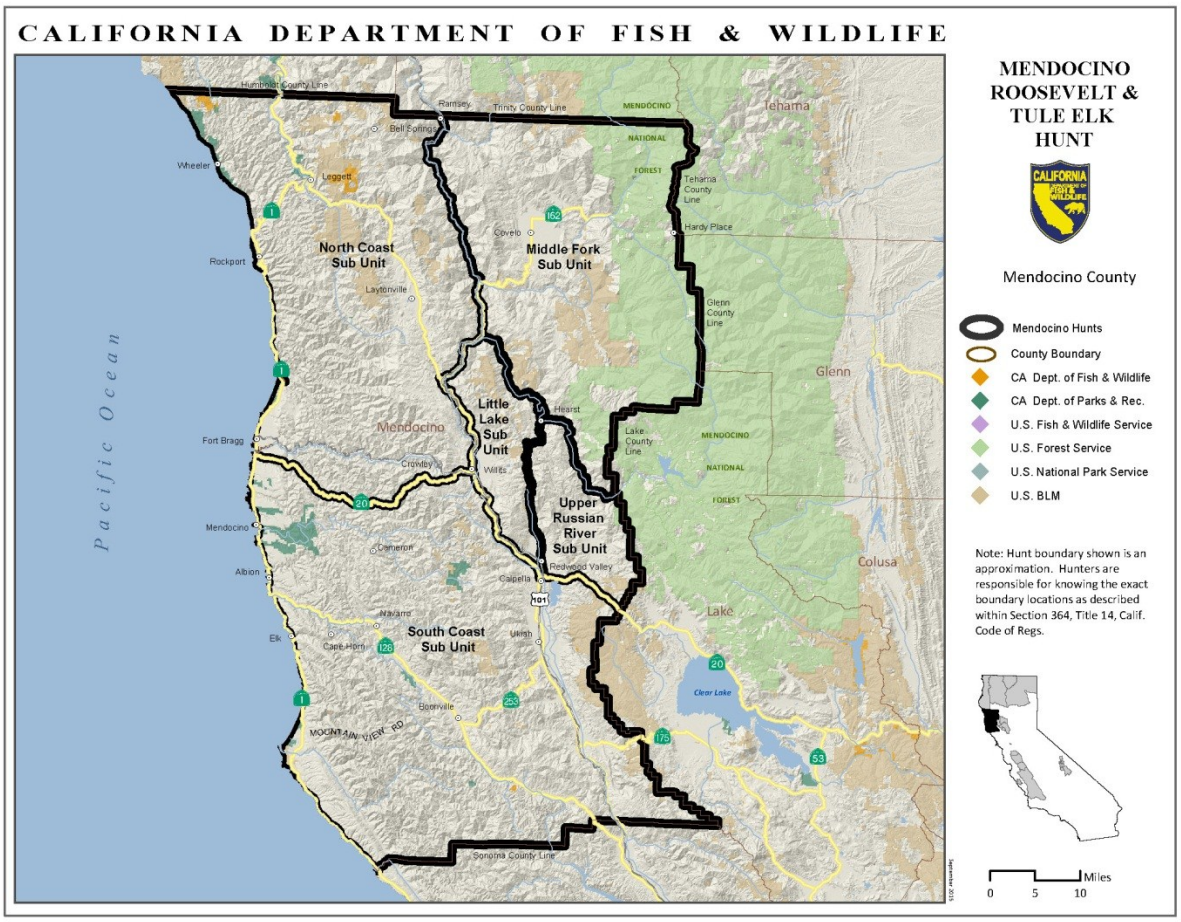

CALIFORNIA DEPARTMENT OF FISH & WILDLIFE
HUMBOLDT
CALIFORNIA
ROOSEVELT
ELK HUNT
Humboldt and Trinity County
Humboldt Hunt Zone
County Boundary
CA Dept. of Fish & Wildlife
CA Dept. of Parks & Rec.
U.S. Fish & Wildlife Service
U.S. Forest Service
U.S. National Park Service
U.S. BLM
Tribal Land
Note: Hunt boundary shown is an approximation. Hunters are responsible for knowing the exact boundary locations as described within Section 364, Title 14, Calif. Code of Regs.
Miles
0
10
20
Pacific Ocean
OREGON
Hombrook
Yreka
Happy Camp
Crescent City
Del Norte
REDWOODS STATE PARK
SIX RIVERS NATIONAL FOREST
KLAMATH NATIONAL FOREST
Siskiyou
Weed
Mount Shasta
Orick
Sawyers Bar
Big Lagoon
REDWOOD NATIONAL PARK
Trinidad
Hoopa
Coffee Creek
Willow Creek
Trinity Center
Arcata
SHASTA-TRINITY NATIONAL FOREST
Trinity Lake
Shasta
Eureka
Humboldt
Lake Shasta
Trinity
Wiskeytown
WISKEYTOWN-SHASTA-TRINITY NATIONAL RECREATION AREA
Fortuna
Redding
Hayfork
Anderson
HUMBOLDT REDWOODS STATE PARK
Cottonwood
Trinity County
SIX RIVERS NATIONAL FOREST
Red Bluff
Garberville
Shelter Cove
Mendocino County
Tehama

Appendix 6. New Hunt Boundary Maps for Marble Mountain North and South

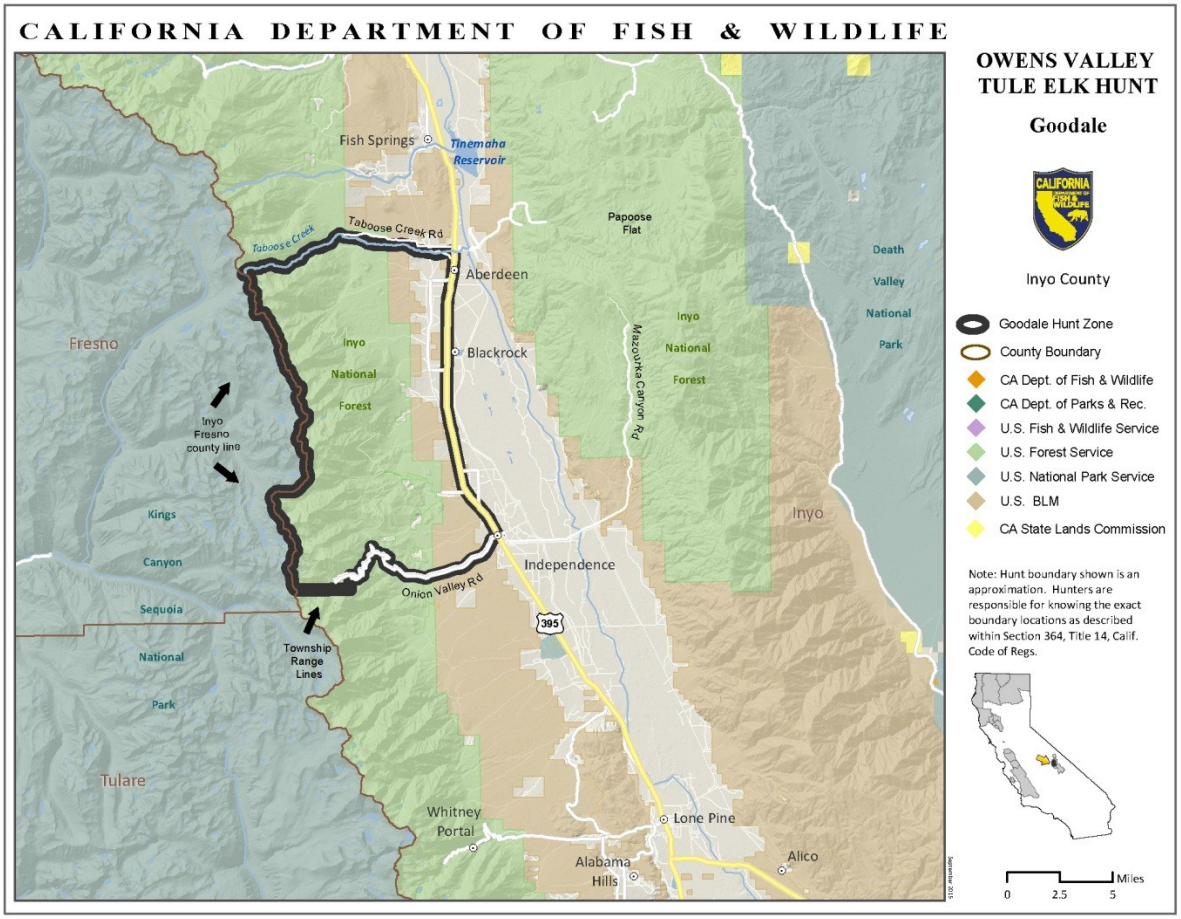


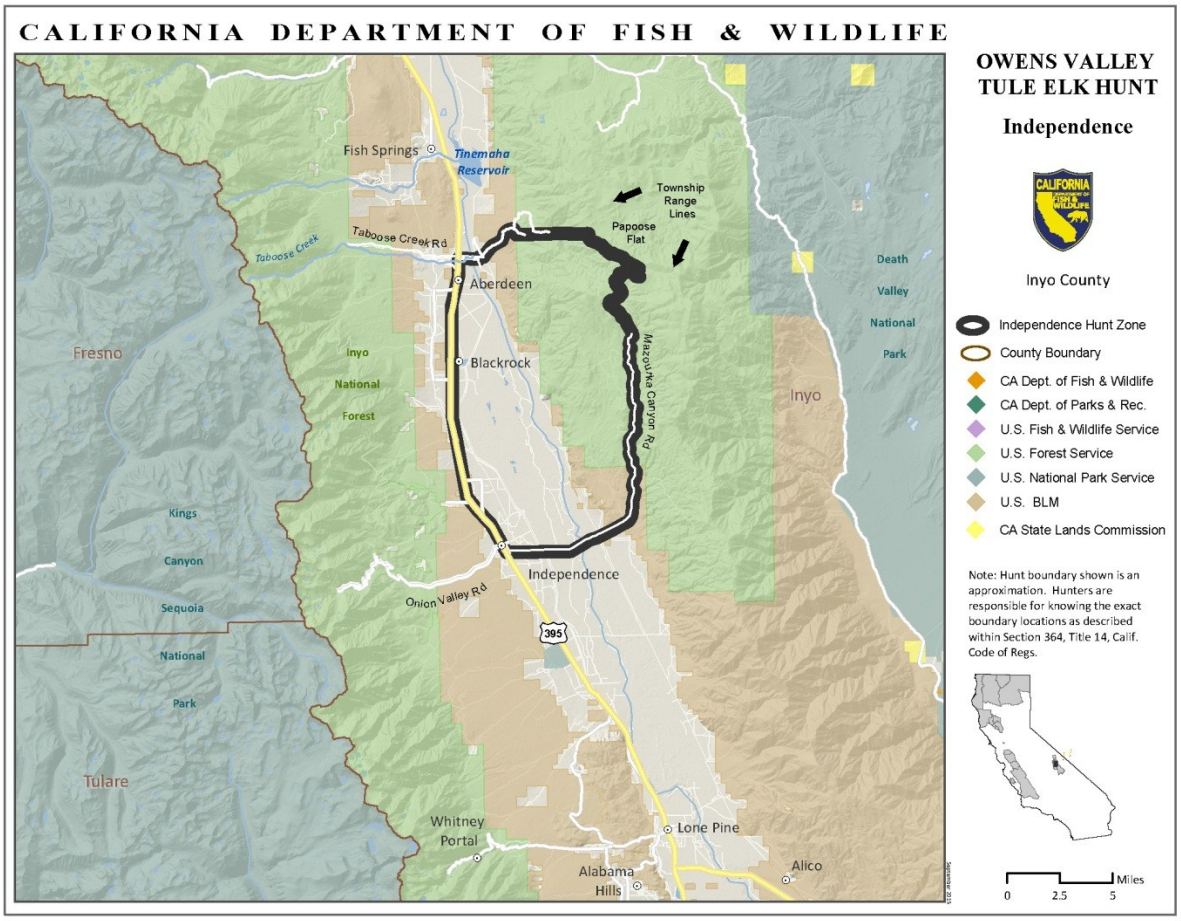

CALIFORNIA DEPARTMENT OF FISH & WILDLIFE
MARBLE MOUNTAIN SOUTH ROOSEVELT ELK HUNT
Siskiyou, Humboldt Trinity, Shasta and Tehama County
Marble Mountain South Hunt Zone
County Boundary
CA Dept. of Fish & Wildlife
CA Dept. of Parks & Rec.
U.S. Fish & Wildlife Service
U.S. Forest Service
U.S. National Park Service
U.S. BLM
Tribal Land
Note: Hunt boundary shown is an approximation. Hunters are responsible for knowing the exact boundary locations as described within Section 364, Title 14, Calif. Code of Regs.
Miles
0
10
20
OREGON
CALIFORNIA
Del Norte
Siskiyou
Trinity
Humboldt
Shasta
Tehama
Pacific Ocean
Crescent City
Orick
Big Lagoon
Trinidad
Arcata
Eureka
Fortuna
Hoopa
Willow Creek
Happy Camp
Yreka
Hornbrook
Dorris
Macdoel
Weed
Mount Shasta
McCloud
Dunsmuir
Sawyers Bar
Coffee Creek
Trinity Center
Trinity Lake
Lake Shasta
Whiskeytown
Hayfork
Redding
Anderson
Cottonwood
Red Bluff
Garberville
Shelter Cove
REDWOODS STATE PARK
SIX RIVERS NATIONAL FOREST
KLAMATH NATIONAL FOREST
SHASTA-TRINITY NATIONAL FOREST
REDWOOD NATIONAL PARK
HUMBOLDT REDWOODS STATE PARK
WHISKEYTOWN-SHASTA-TRINITY NATIONAL RECREATION AREA

Appendix 7. New Hunt Boundary Maps for Mendocino (Mendocino North Coast, Mendocino Middle Fork, Mendocino Upper Russian River, Mendocino Little Lake, and Mendocino South Coast elk hunts)

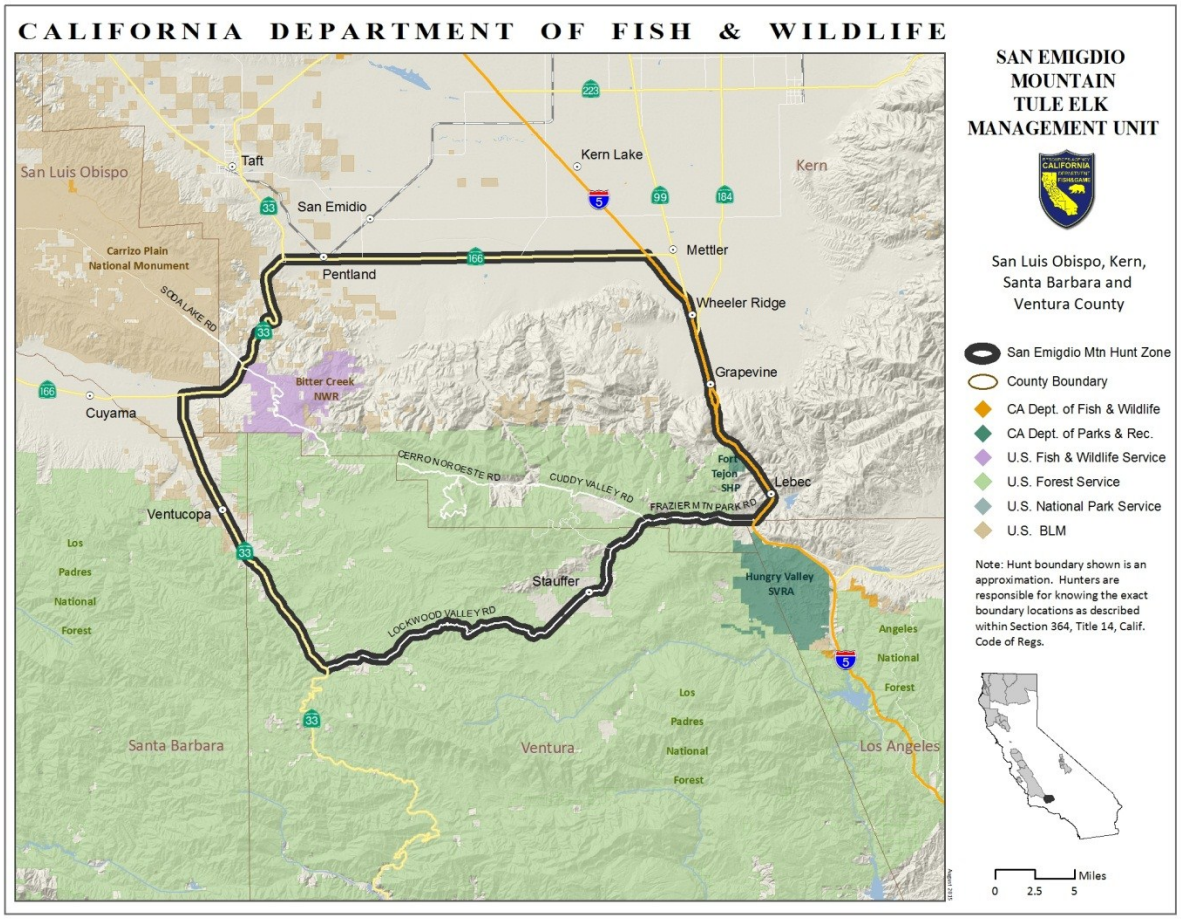


Appendix 8. New Hunt Boundary Maps for Independence and Goodale

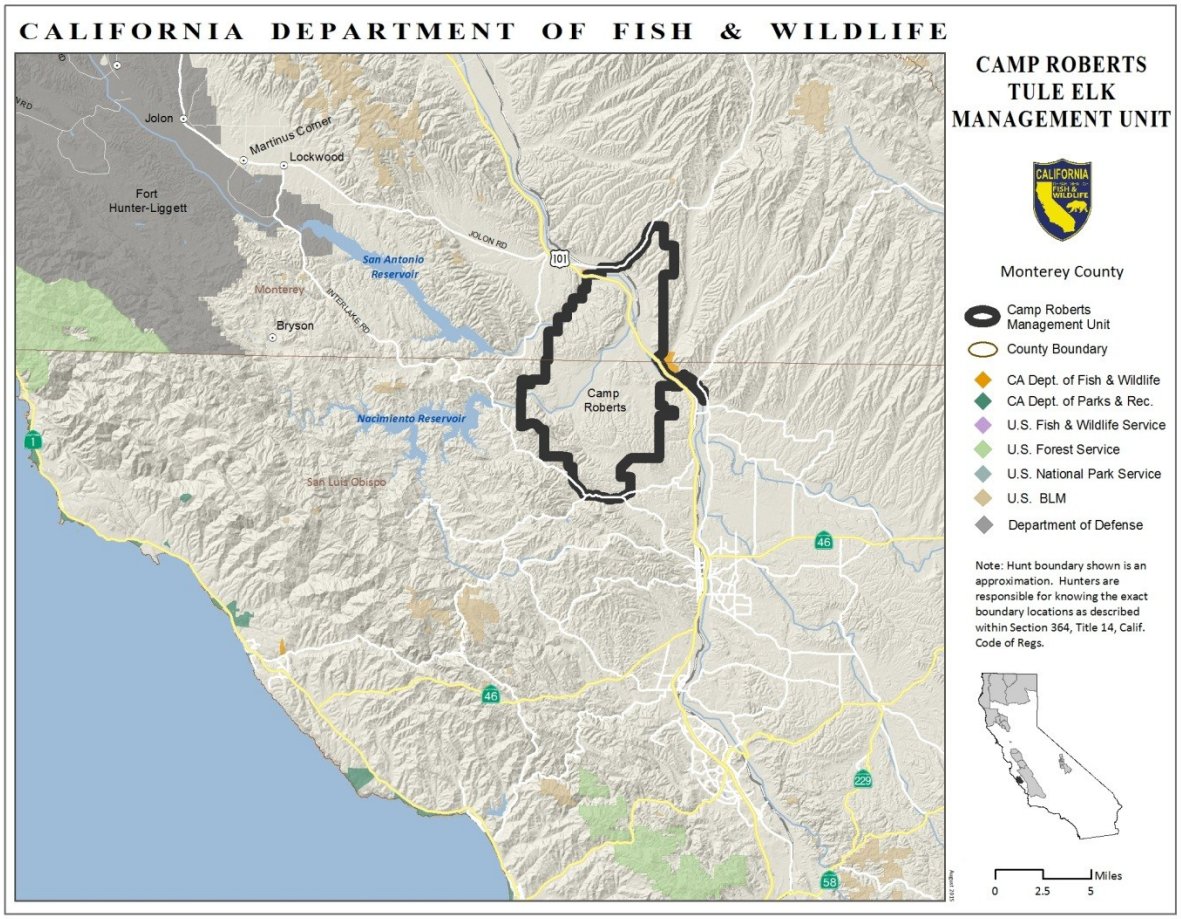



CALIFORNIA DEPARTMENT OF FISH & WILDLIFE
OWENS VALLEY
TULE ELK HUNT
Independence
Inyo County
Independence Hunt Zone
County Boundary
CA Dept. of Fish & Wildlife
CA Dept. of Parks & Rec.
U.S. Fish & Wildlife Service
U.S. Forest Service
U.S. National Park Service
U.S. BLM
CA State Lands Commission
Note: Hunt boundary shown is an approximation. Hunters are responsible for knowing the exact boundary locations as described within Section 364, Title 14, Calif. Code of Regs.
Miles
0
2.5
5
Fish Springs
Tinemaha Reservoir
Township Range Lines
Papoose Flat
Taboose Creek Rd
Taboose Creek
Aberdeen
Blackrock
Mazourka Canyon Rd
Fresno
Inyo National Forest
Death Valley National Park
Inyo
Kings Canyon Sequoia National Park
Tulare
Independence
Onion Valley Rd
395
Whitney Portal
Lone Pine
Alabama Hills
Alico

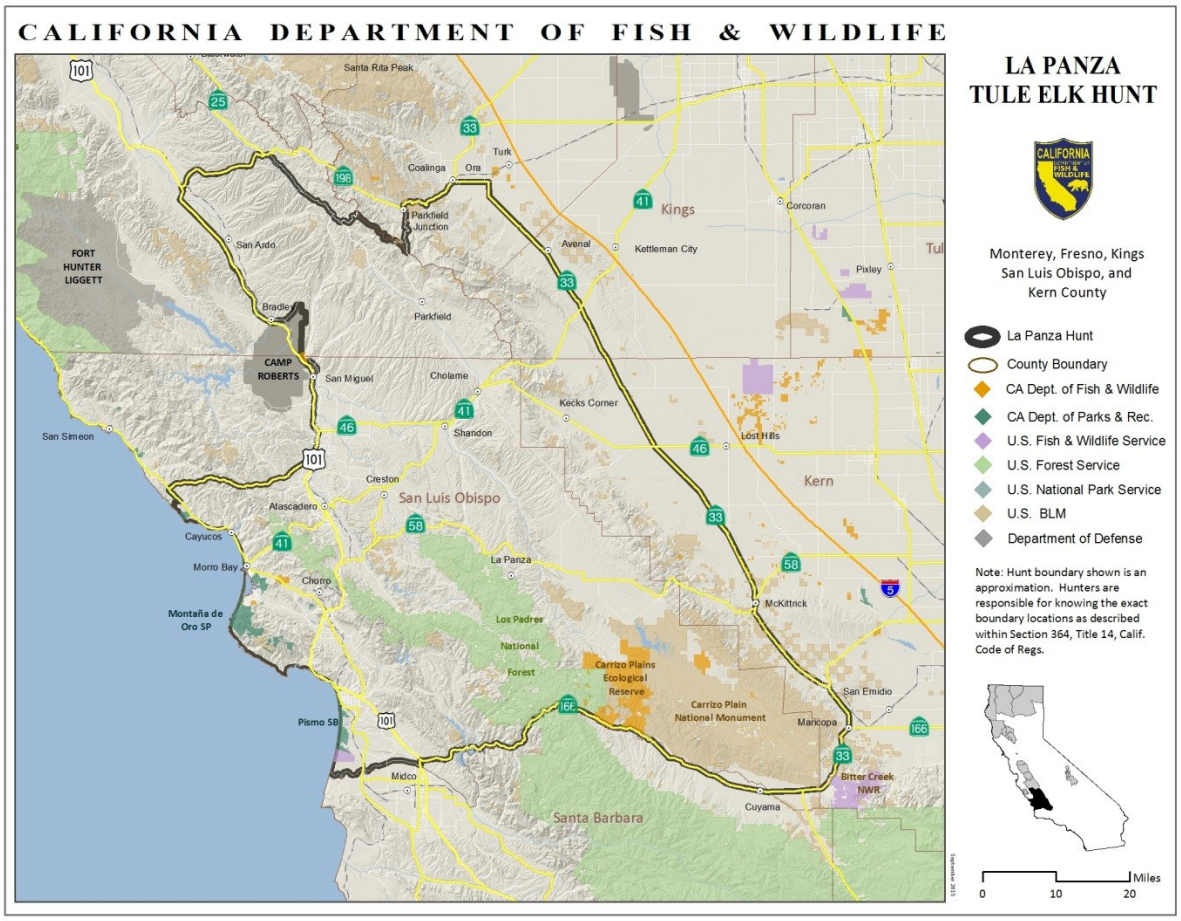
Appendix 9. Hunt Boundary Map for San Emigdio Mountain



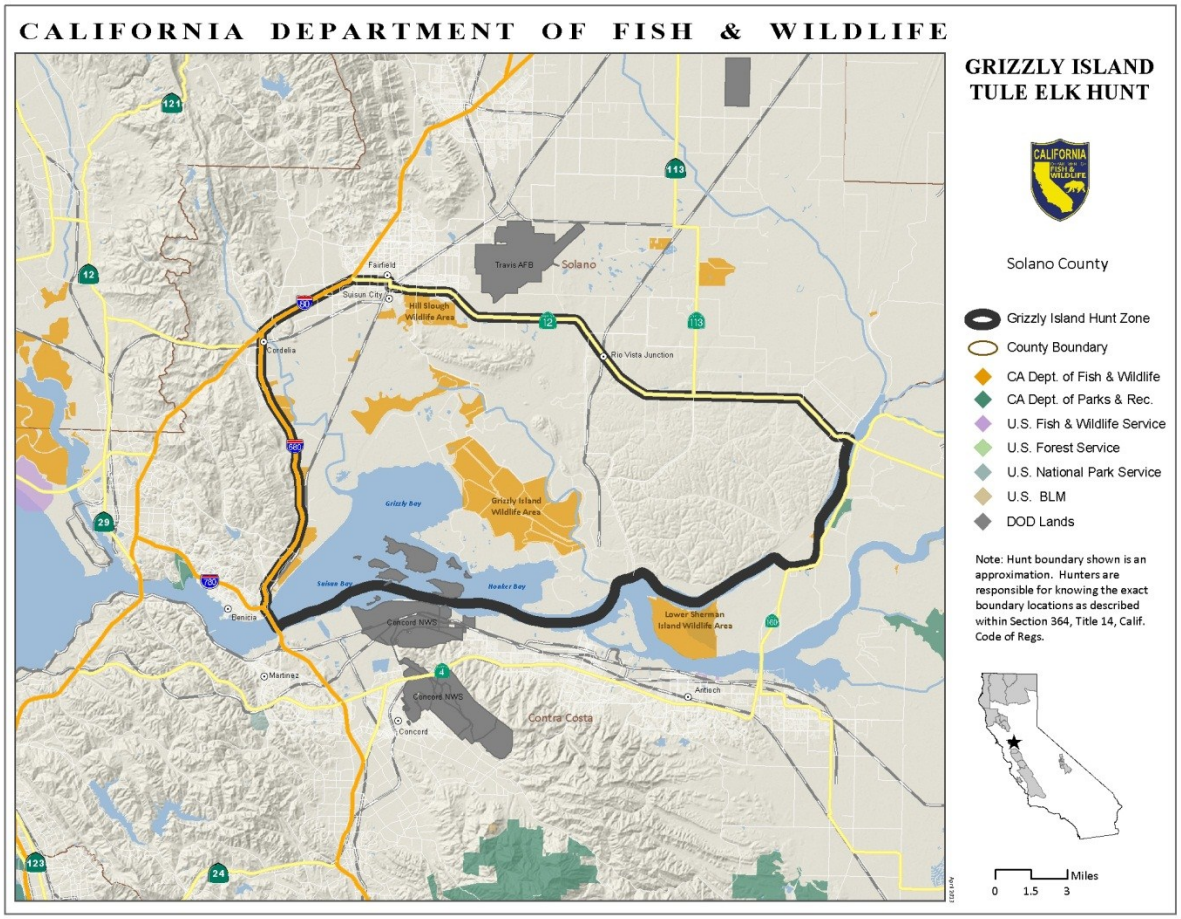
Appendix 10. Hunt Boundary Map for Camp Roberts



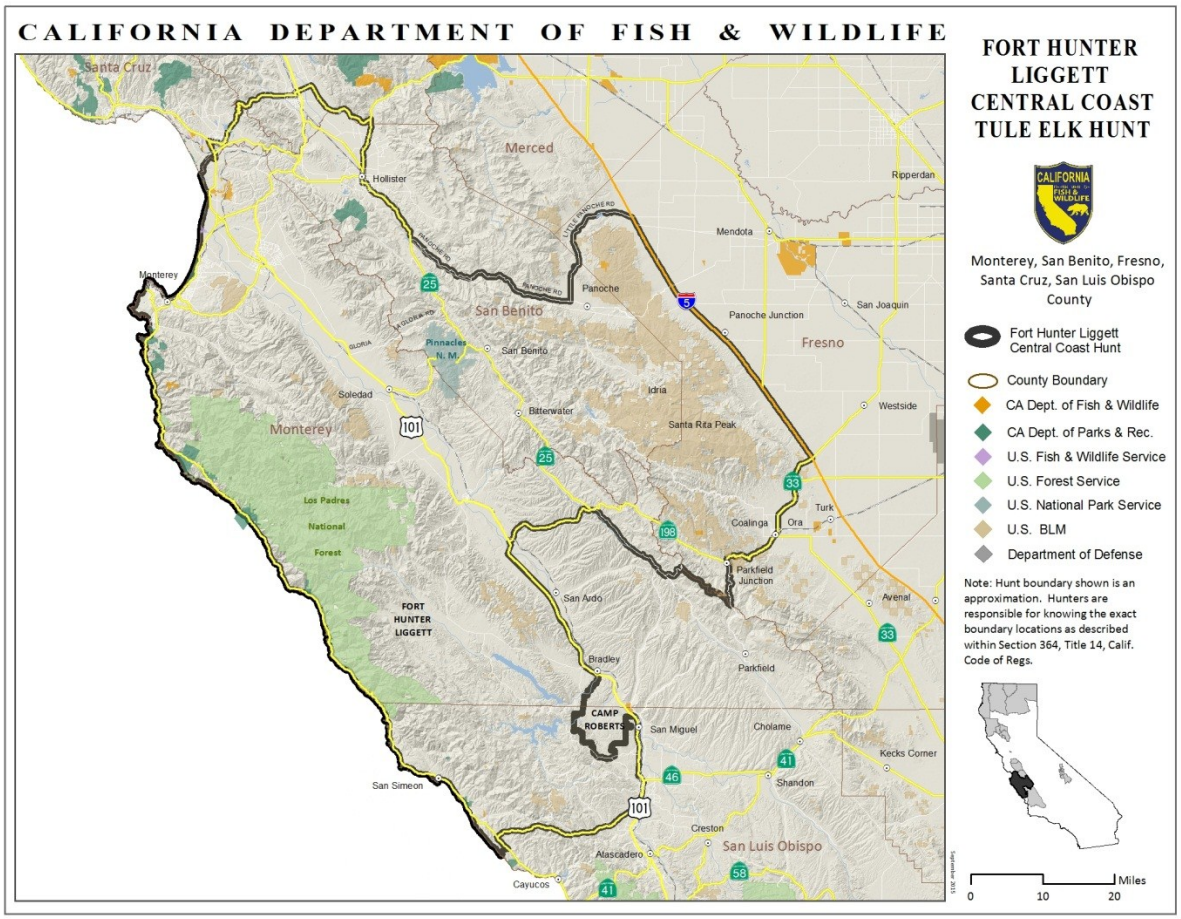
Appendix 11. New Hunt Boundary Map for La Panza



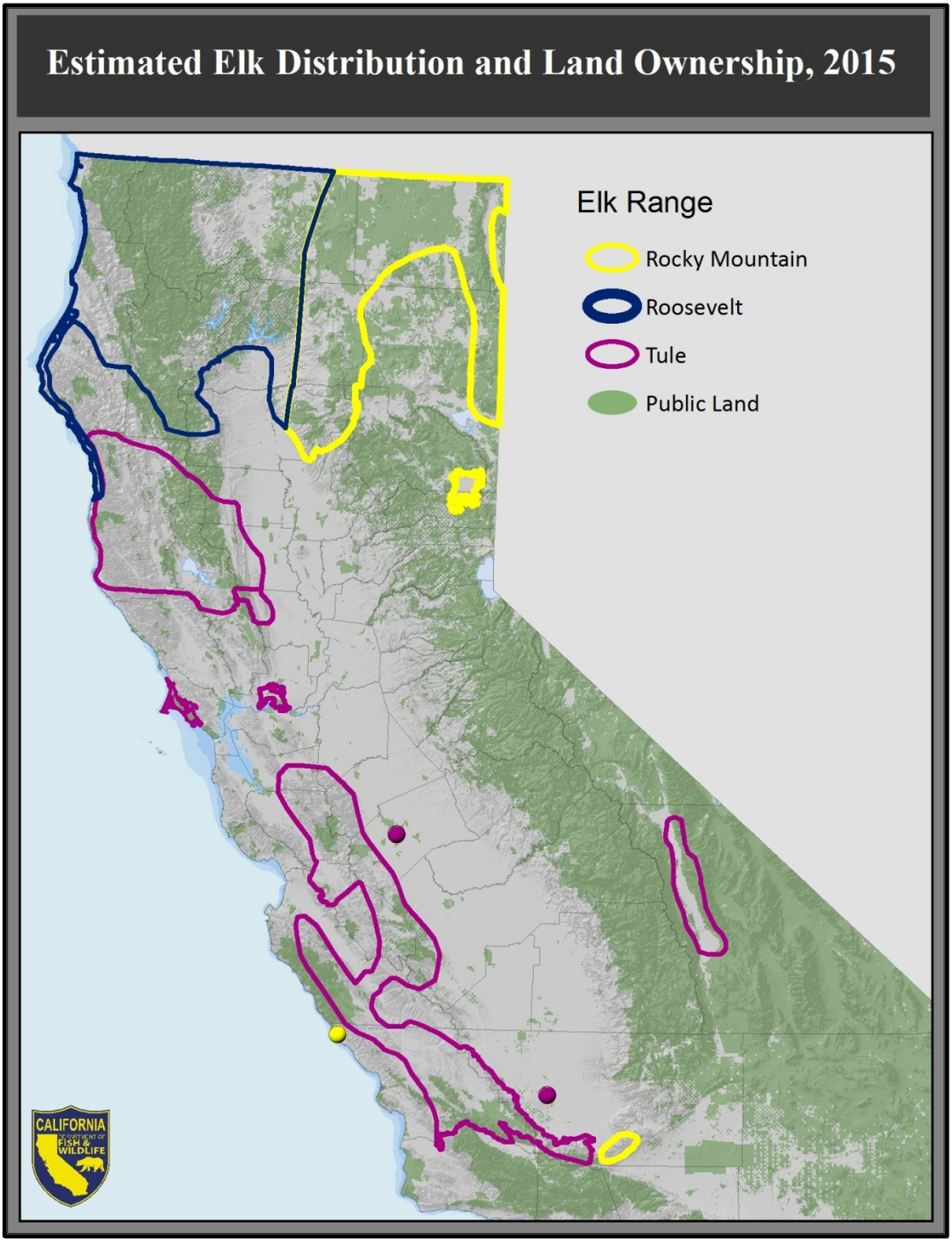
Appendix 12. New Hunt Boundary Map for Grizzly Island



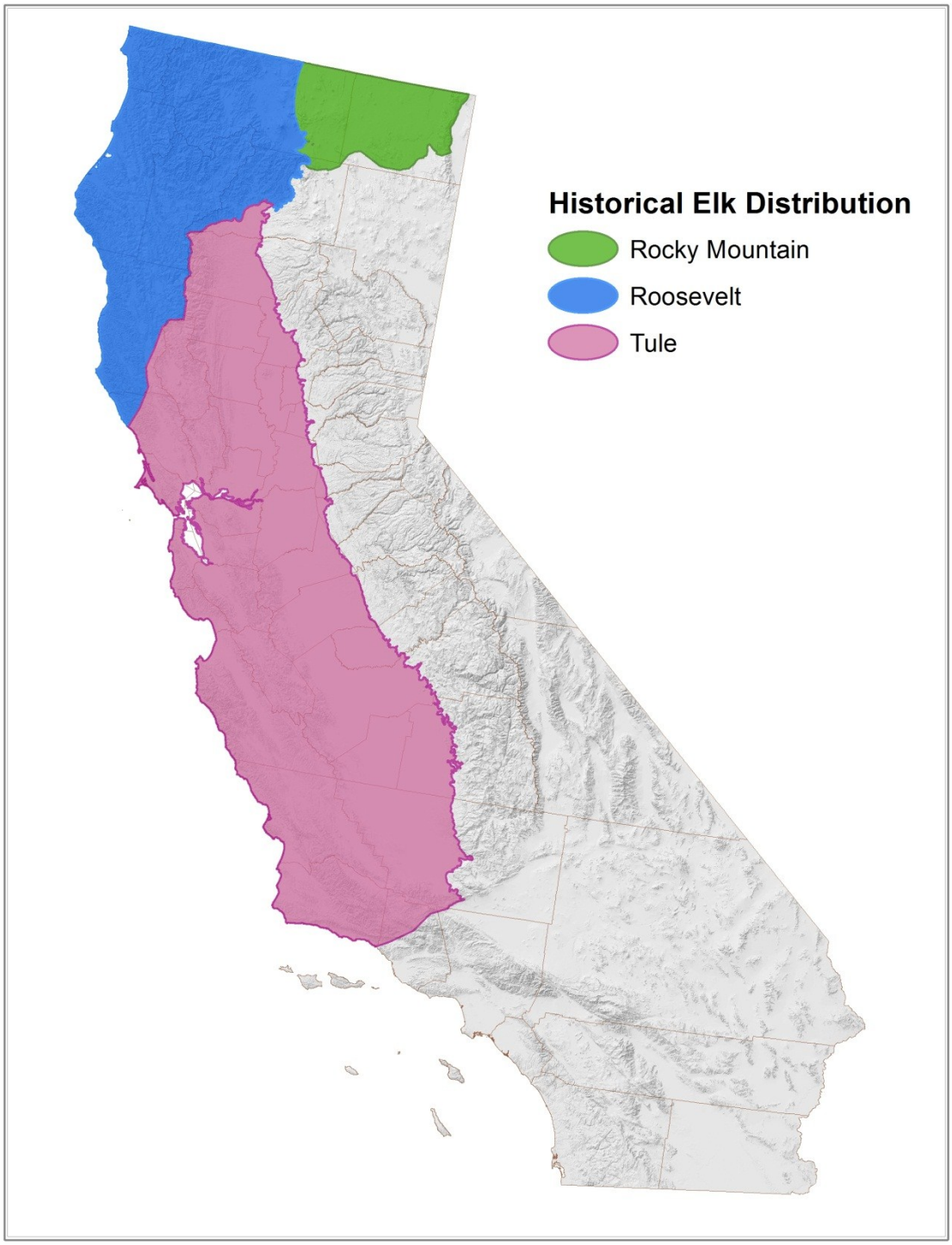
Appendix 13. New Hunt Boundary Map for Fort Hunter Liggett Central Coast



Appendix 14. Estimated Elk Distribution and Land Ownership, 2015



Appendix 15. Historic Elk Distribution within California



Appendix 16. Tule Elk Relocation Criteria

1. Free-roaming - Herds will be free-roaming and managed as part of the ecosystem.
2. Historical Range - Translocations are limited to historic range.
3. Habitat Quality - The site must contain suitable conditions for providing year-long elk habitat. This includes natural vegetation capable of providing forage and cover, adequate perennial water and relatively moderate climatic conditions receiving only moderate snow.
4. Hybridization with Other Elk - The site should provide no chance of contact with other subspecies of elk.
5. Potential for Public Use - Preference shall be given to sites which increase opportunities for public use of tule elk, including hunting. Preferred sites will be on or adjacent to accessible public lands.
6. Conflicts with Humans - Tule elk will not be translocated to areas with a potential for significant conflicts with humans (agriculture, highways, and subdivisions); the rights of private landowners must be respected. A site should have low potential for elk damage to private property. This includes livestock competition and damage to agricultural and silvicultural crops as well as other property such as fences and irrigation systems. Adjacent landowners should understand and support the proposed relocation of tule elk. Private landownership is dynamic, and acceptable conditions may become depredation problems with a change in land use or the sale of neighboring parcel. Written agreements with neighboring landowners are recommended.
7. Population Management - Practical means of regulating population size should be available for translocated tule elk herds.
8. Competition with Other Wildlife - The status of other native ungulates and threatened and endangered species in the area of a proposed tule elk translocation should be considered as well as the potential for adverse impacts from competition.
9. Disease - Elk should not be relocated from or to areas with a chronic disease history where disease may affect elk or other ungulates.
10. Existing Populations - Tule elk will not be relocated to sites with or immediately adjacent to existing populations, unless additional elk are needed to improve the status of a population.

Appendix 17. Existing Regulations

§364. Elk

(a) Department Administered General Methods Roosevelt Elk Hunts:

(1) Siskiyou Roosevelt Elk Hunt:

(A) Area: In that portion of Siskiyou County beginning at the junction of Interstate Highway 5 with the California-Oregon state line; east along the state line to Hill Road at Ainsworth Corner; south along Hill Road to Lava Beds National Monument Road; south along Lava Beds National Monument Road to USDA Forest Service Road 49; south along USDA Forest Service Road 49 to USDA Forest Service Road 77; west along USDA Forest Service Road 77 to USDA Forest Service Road 15 (Harris Spring Road); south along USDA Forest Service Road 15 to USDA Forest Service Road 13 (Pilgrim Creek Road); southwest along USDA Forest Service Road 13 to Highway 89; northwest along Highway 89 to Interstate Highway 5; north along Interstate Highway 5 to the point of beginning.

(B) Season: The season shall open on the Wednesday preceding the second Saturday in September and continue for 12 consecutive days.

(C) Number of License Tags: 20 bull tags and 20 antlerless tags.

(2) Big Lagoon Roosevelt Elk Hunt:

(A) Area: In that portion of Humboldt County owned or leased by the California Redwood Company and the Green Diamond Resource Company within a line beginning at the intersection of Highway 101 and Hiltons Road; south on Hiltons Road to the western boundary of Redwood National Park; south and east along the western to its southern tip; north and east along the eastern boundary of Redwood National Park to Redwood Creek; south along Redwood Creek to Highway 299; east along Highway 299 to Forest Service Road 1; south along Forest Service Road 1 to Roddiscraft Road; west along Roddiscraft Road to the intersection of Snow Camp Road and the power line road within the right-of-way of Humboldt-Trinity 115 Line and Trinity-Maple Creek 60 Line power line; west along the power line road within the right-of-way of the Humboldt-Trinity 115 Line and Trinity-Maple Creek 60 Line to Maple Creek Road; south along Maple Creek Road to Butler Valley Road; west along Butler Valley Road to Fickle Hill Road; north along Fickle Hill Road to Bayside Road; west along Bayside Road and 7th Street to Highway 101; north along Highway 101 to point of beginning.

(B) Season: The season shall open the last Wednesday in August and continue for 10 consecutive days.

(C) Number of License Tags: 0 bull tags and 0 antlerless tags.

(D) Special Conditions: All tagholders will be required to attend a mandatory orientation. Tagholders will be notified of the time and location of the orientation meeting after receipt of their elk license tags.

(3) Northwestern California Roosevelt Elk Hunt:

(A) Area: In those portions of Humboldt and Del Norte counties within a line beginning at the intersection of Highway 299 and Highway 96, north along Highway 96 to the Del Norte-Siskiyou county line, north along the Del Norte-Siskiyou county line to the California-Oregon state line, west along the state line to the Pacific Coastline, south along the Pacific coastline to the Humboldt-Mendocino county line, east along the Humboldt-Mendocino county line to the Humboldt-Trinity county line, north along the

Humboldt-Trinity county line to Highway 299, west along Highway 299 to the point of beginning, excluding those areas owned or leased by the California Redwood Company and the Green Diamond Resource Company within existing elk hunt boundaries as described in subsections 364(a)(2)(A), (a)(4)(A), and (a)(5)(A).
(B) Season: The season shall open on the first Wednesday in September and continue for 23 consecutive days.
(C) Number of License Tags: 0 bull tags, 0 antlerless tags, and 45 either-sex tags.
(4) Klamath Roosevelt Elk Hunt:
(A) Area: Those portions of Humboldt and Del Norte counties owned or leased by the Green Diamond Resource Company within a line beginning at the intersection of Highway 101 and the Klamath River; south on Highway 101 to South Klamath Beach Road; west on South Klamath Beach Road to the Redwood National Park boundary; southwest and south along the Redwood National Park boundary to Highway 101; south on Highway 101 to the Redwood National Park boundary; southeast along the Redwood National Park boundary to the Bald Hills Road; southeast along the Bald Hills Road to the Klamath River; northwest along the Klamath River to the point of beginning.
(B) Season: The season shall open on the first Wednesday in September and continue for 10 consecutive days.
(C) Number of License Tags: 0 bull tags and 0 antlerless tags.
(D) Special Conditions: All tagholders will be required to attend a mandatory orientation. Tagholders will be notified of the time and location of the orientation meeting after receipt of their elk license tags.
(5) Del Norte Roosevelt Elk Hunt:
(A) Area: Those portions of Del Norte County owned or leased by the Green Diamond Resource Company within a line beginning at the intersection of Highway 101 and the California-Oregon state line; south along Highway 101 to North Bank Road; southeast along North Bank Road to High Divide Road; northeast along High Divide Road to North Fork Smith River/Wimer Road; north along North Fork Smith River/Wimer Road to the California Oregon state line; west along the California-Oregon state line to the point of beginning.
(B) Season: The season shall open on the last Wednesday in August and continue for 10 consecutive days.
(C) Number of License Tags: 0 bull tags and 0 antlerless tags.
(D) Special Conditions: All tagholders will be required to attend a mandatory orientation. Tagholders will be notified of the time and location of the orientation meeting upon receipt of their elk license tags.
(6) Marble Mountains Roosevelt Elk Hunt
(A) Area: In those portions of Humboldt, Tehama, Trinity, Shasta and Siskiyou counties beginning at the intersection of Interstate Highway 5 and the California-Oregon state line; west along the state line to the Del Norte County line; south along the Del Norte County line to the intersection of the Siskiyou-Humboldt county lines; east along the Siskiyou-Humboldt county lines to Highway 96; south along Highway 96 to Highway 299; south along Highway 299 to the Intersection of the Humboldt/Trinity County line; south along the Humboldt Trinity County Line to the intersection of Highway 36; east along Highway 36 to the intersection of Interstate 5;north on Interstate Highway 5 to the point of beginning.

(B) Season: The season shall open on the Wednesday preceding the second Saturday in September and continue for 12 consecutive days.
(C) Number of License Tags: General Season: 35 bull tags and 10 antlerless tags.
(b) Department Administered General Methods Rocky Mountain Elk Hunts:
(1) Northeastern California Rocky Mountain Elk Hunt:
(A) Area: Those portions of Siskiyou, Modoc, Lassen, and Shasta counties within a line beginning in Siskiyou County at the junction of the California-Oregon state line and Hill Road at Ainsworth Corner; east along the California-Oregon state line to the California-Nevada state line; south along the California-Nevada state line to the Tuledad-Red Rock-Clarks Valley Road (Lassen County Roads 506, 512 and 510); west along the Tuledad-Red Rock-Clarks Valley Road to Highway 395 at Madeline; west on USDA Forest Service Road 39N08 to the intersection of Highway 139/299 in Adin; south on Highway 139 to the intersection of Highway 36 in Susanville; west on Highway 36 to the intersection of Interstate 5 in Red Bluff; north on Interstate 5 to Highway 89; southeast along Highway 89 to USDA Forest Service Road 13 (Pilgrim Creek Road); northeast along USDA Forest Service Road 13 to USDA Forest Service Road 15 (Harris Spring Road); north along USDA Forest Service Road to USDA Forest Service Road 77; east along USDA Forest Service Road 77 to USDA Forest Service Road 49; north along USDA Forest Service Road 49 to Lava Beds National Monument Road; north along Lava Beds National Monument Road to Hill Road; north along Hill Road to the point of beginning.
(B) Season: The season shall open on the Wednesday preceding the third Saturday in September and continue for 12 consecutive days.
(C) Number of License Tags: 15 bull tags and 10 antlerless tags.
(c) Department Administered General Methods Roosevelt/Tule Elk Hunts:
(1) Mendocino Elk Hunt:
(A) Area: Those portions in Mendocino County within a line beginning at the Pacific Coastline and the Mendocino/Humboldt County line south of Shelter Cove; east along the Mendocino/Humboldt County line to the intersection of the Humboldt, Mendocino, and Trinity County lines; south and east along the Mendocino/Trinity County line to the intersection of the Mendocino, Trinity, and Tehama County lines; south along the Mendocino County line to the intersection of Highway 20; north and west along Highway 20 to the intersection of Highway 101 near Calpella; south along Highway 101 to the intersection of Highway 253; southwest along Highway 253 to the intersection of Highway 128; north along Highway 128 to the intersection of Mountain View Road near the town of Boonville; west along Mountain View Road to the intersection of Highway 1; south along Highway 1 to the intersection of the Garcia River; west along the Garcia River to the Pacific Coastline; north along the Pacific Coastline to the point of beginning.
(B) Season: The season shall open on the Wednesday preceding the fourth Saturday in September and continue for 12 consecutive days.
(C) Number of License Tags: 2 bull tags and 2 antlerless tags.
(d) Department Administered General Methods Tule Elk Hunts:
(1) Cache Creek Tule Elk Hunt:
(A) Area: Those portions of Lake, Colusa and Yolo counties within the following line: beginning at the junction of Highway 20 and Highway 16; south on Highway 16 to Reiff-Rayhouse Road; west on Reiff-Rayhouse Road to Morgan Valley Road; west on

Morgan Valley Road to Highway 53; north on Highway 53 to Highway 20; east on Highway 20 to the fork of Cache Creek; north on the north fork of Cache Creek to Indian Valley Reservoir; east on the south shore of Indian Valley Reservoir to Walker Ridge-Indian Valley Reservoir Access Road; east on Walker Ridge-Indian Valley Reservoir Access Road to Walker Ridge Road; south on Walker Ridge Road to Highway 20; east on Highway 20 to the point of beginning.
(B) Season:
1. The Bull season shall open on the second Saturday in October and continue for 16 consecutive days.
2. The Antlerless season shall open on the third Saturday in October and continue for 16 consecutive days.
(C) Number of License Tags: 3 bull tags and 3 antlerless tags.
(D) Special Conditions: All tagholders will be required to attend a mandatory orientation. Tagholders will be notified of the time and location of the orientation meeting after receipt of their elk license tags.
(2) La Panza Tule Elk Hunt:
(A) Area: In those portions of San Luis Obispo, Kern, Monterey, Kings, Fresno, San Benito, and Santa Barbara counties within a line beginning in San Benito County at the junction of Highway 25 and County Highway J1 near the town Pacines, south along Highway 25 to La Gloria road, west along La Gloria road, La Gloria road becomes Gloria road, west along Gloria road to Highway 101 near Gonzales, south along Highway 101 to Highway 166 in San Luis Obispo County; east along Highway 166 to Highway 33 at Maricopa in Kern County; north and west along Highway 33 to Highway 198 at Coalinga in Fresno County, north along Highway 33 to Interstate 5 in Fresno County, north along Interstate 5 to Little Panoche road/County Highway J1, southwest along Little Panoche road/County Highway J1 to the intersection of Little Panoche road/County Highway J1 and Panoche road/County Highway J1 in San Benito County, northwest along Panoche road/County Highway J1 to the point of beginning.
(B) Season:
1. Period One: The season shall open on the second Saturday in October and extend for 23 consecutive days.
2. For Period Two: the season shall open on the second Saturday in November and extend for 23 consecutive days.
(C) Number of License Tags:
1. Period One: 6 bull tags and 5 antlerless tags.
2. Period Two: 6 bull tags and 6 antlerless tags.
(D) Special Conditions: All tagholders will be required to attend a mandatory orientation. Tagholders will be notified of the time and location of the orientation meeting upon receipt of their elk license tags.
(3) Bishop Tule Elk Hunt:
(A) Area: In that portion of Inyo County beginning at the junction of Highway 395 and Highway 6 in the town of Bishop; north and east along Highway 6 to the junction of Silver Canyon Road; east along Silver Canyon Road to the White Mountain Road (Forest Service Road 4S01); south along the White Mountain Road to Highway 168 at Westgard Pass; south and west along Highway 168 to the junction of Highway 395; north on Highway 395 to the point of beginning.

(B) Season:
1. Period Three: The season shall open on the third Saturday in October and extend for 9 consecutive days.
2. Period Four: The season shall open on the first Saturday in November and extend for 9 consecutive days.
3. Period Five: The season shall open on the first Saturday in December and continue for 9 consecutive days.
(C) Number of License Tags:
1. Period Three: 2 bull tags and 0 antlerless tags.
2. Period Four: 0 bull tags and 0 antlerless tags.
3. Period Five: 0 bull tags and 0 antlerless tags.
(4) Independence Tule Elk Hunt:
(A) Area: In that portion of Inyo County beginning at the junction of Highway 395 and Aberdeen Station Road; east on Aberdeen Station Road to its terminus at the southern boundary of Section 5, Township 11S, Range 35E; east along the southern boundary of sections 5, 4, 3, and 2, Township 11S, Range 35E to the Papoose Flat Road at Papoose Flat; south and east on Papoose Flat Road to Mazourka Canyon Road; south and then west on Mazourka Canyon Road to Highway 395; west along Onion Valley Road to the intersection of the Section 25 Township 13S, Range 33E; south along the eastern boundary of Section 25 Township 13S, Range 33E to the southern boundary of Section 25 Township 13S, Range 33E; west along the southern boundary of sections 27, 26, 25 Township 13S, Range 33E to the Inyo County line; North along the Inyo County Line to Taboose Creek; east along Taboose Creek to the intersection of Highway 395; south along Highway 395 to the point of beginning.
(B) Season:
1. Period Two: The season shall open on the first Saturday in October and extend for 9 consecutive days.
2. Period Three: The season shall open on the third Saturday in October and extend for 9 consecutive days.
3. Period Four: The season shall open on the first Saturday in November and extend for 9 consecutive days.
4. Period Five: The season shall open on the first Saturday in December and continue for 9 consecutive days.
(C) Number of License Tags:
1. Period Two: 2 bull tags and 0 antlerless tags.
2. Period Three: 0 bull tags and 0 antlerless tags.
3. Period Four: 0 bull tags and 0 antlerless tags.
4. Period Five: 0 bull tags and 0 antlerless tags.
(5) Lone Pine Tule Elk Hunt:
(A) Area: In that portion of Inyo County beginning at the junction of Highway 395 and Mazourka Canyon Road; east and then north on Mazourka Canyon Road to the Inyo National Forest Boundary at the junction of the southern boundary of Township 12S and the northern boundary of Township 13S; east along the southern boundary of Township 12S to Saline Valley Road; south on Saline Valley Road to Highway 190; north and then southwest on Highway 190 to the junction of Highway 395 at Olancha; north on Highway 395 to the point of beginning.

(B) Season:
1. Period Two: The season shall open on the first Saturday in October and extend for 9 consecutive days.
2. Period Three: The season shall open on the third Saturday in October and extend for 9 consecutive days.
3. Period Four: The season shall open on the first Saturday in November and extend for 9 consecutive days.
4. Period Five: The season shall open on the first Saturday in December and continue for 9 consecutive days.
(C) Number of License Tags:
1. Period Two: 0 bull tags and 0 antlerless tags.
2. Period Three: 2 bull tags and 0 antlerless tags.
3. Period Four: 2 bull tags and 0 antlerless tags.
4. Period Five: 0 bull tags and 0 antlerless tags.
(6) Tinemaha Tule Elk Hunt:
(A) Area: In that portion of Inyo County beginning at the junction of Highway 395 and Highway 168 in the town of Big Pine; north and east along Highway 168 to the junction of the Death Valley Road; south and east along the Death Valley Road to the junction of the Papoose Flat Road; south along the Papoose Flat Road to the southern boundary of Section 2, Township 11S, Range 35E; west along the southern boundaries of sections 2, 3, 4 and 5 to the terminus of the Aberdeen Station Road in Section 5, Township 11S, Range 35E; south and west along the Aberdeen Station Road to Highway 395; north along Highway 395 to the point of beginning.
(B) Season:
1. Period Two: The season shall open on the first Saturday in October and extend for 9 consecutive days.
2. Period Three: The season shall open on the third Saturday in October and extend for 9 consecutive days.
3. Period Four: The season shall open on the first Saturday in November and extend for 9 consecutive days.
4. Period Five: The season shall open on the first Saturday in December and continue for 9 consecutive days.
(C) Number of License Tags:
1. Period Two: 1 bull tag and 0 antlerless tags.
2. Period Three: 0 bull tags and 0 antlerless tags.
3. Period Four: 0 bull tags and 0 antlerless tags.
4. Period Five: 0 bull tags and 0 antlerless tags.
(7) West Tinemaha Tule Elk Hunt:
(A) Area: In that portion of Inyo County beginning at the junction of Highway 395 and Highway 168 in the town of Big Pine; south along Highway 395 to the north junction of Fish Springs Road; south along Fish Springs Road to the junction of Highway 395; south along Highway 395 to Taboose Creek in Section 14, Township 11S, Range 34E; west along Taboose Creek to the Inyo County line; north and west along the Inyo County line to the intersection of Tinemaha Creek; east along Tinemaha Creek to the intersection of McMurray Meadow Road; north on McMurray Meadow Road to the intersection of Glacier Lodge Road; north and east on Glacier Lodge Road to Crocker

Avenue; east along Crocker Avenue to Highway 395; north along Highway 395 to the point of beginning.
(B) Season:
1. Period One: The season shall open on the second Saturday in September and extend for 16 consecutive days.
2. Period Two: The season shall open on the first Saturday in October and extend for 9 consecutive days.
3. Period Three: The season shall open on the third Saturday in October and extend for 9 consecutive days.
4. Period Four: The season shall open on the first Saturday in November and extend for 9 consecutive days.
5. Period Five: The season shall open on the first Saturday in December and continue for 9 consecutive days.
(C) Number of License Tags:
1. Period One: 0 bull tags and 0 antlerless tags.
2. Period Two: 0 bull tags and 0 antlerless tags.
3. Period Three: 0 bull tags and 0 antlerless tags.
4. Period Four: 0 bull tags and 0 antlerless tags.
5. Period Five: 0 bull tags and 0 antlerless tags.
(8) Tinemaha Mountain Tule Elk Hunt:
(A) Area: In that portion of Inyo County with a line beginning at the intersection of Glacier Lodge Road (9S21) and McMurray Meadow Road (9S03); south on McMurray Meadow Road to Tinemaha Creek; west along Tinemaha Creek to the Inyo County line; north and west along the Inyo County line to the southeast corner of Section 23, Township 10S, Range 32E; north along the eastern boundaries of sections 23, 14, 11, 2, Township 10S, Range 32E, and the eastern boundary of Section 36, Township 9S, Range 32E to Glacier Lodge Road; east along Glacier Lodge Road to the beginning.
(B) Season:
1. Period One: The season shall open on the second Saturday in September and extend for 16 consecutive days.
2. Period Two: The season shall open on the first Saturday in October and extend for 9 consecutive days.
3. Period Three: The season shall open on the third Saturday in October and extend for 9 consecutive days.
4. Period Four: The season shall open on the first Saturday in November and extend for 9 consecutive days.
5. Period Five: The season shall open on the first Saturday in December and continue for 9 consecutive days.
(C) Number of License Tags:
1. Period One: 0 bull tags.
2. Period Two: 0 bull tags.
3. Period Three: 1 bull tag.
4. Period Four: 1 bull tag.
5. Period Five: 0 bull tags.
(9) Whitney Tule Elk Hunt:

(A) Area: In that portion of Inyo County with a line beginning at the intersection of Highway 395 and Onion Valley Road; south on Highway 395 to the intersection of Whitney Portal Road; west along Whitney Portal Road to the northern boundary of Section 36, Township 15S, Range 34E; west along the northern boundary of sections 36, 35, 34 and 33 Township 15S, Range 34 E to the Inyo County Line; north along the Inyo County Line to the intersection of Section 27 Township 13S, range 33E; east along the southern boundary of sections 27, 26 and 25 Township 13S, Range 33E; north along the eastern boundary of Section 25 Township 13S, Range 33E to the intersection of Onion Valley Road; east along Onion Valley Road to the point of beginning.
(B) Season:
1. Period Two: The season shall open on the first Saturday in October and extend for 9 consecutive days.
2. Period Three: The season shall open on the third Saturday in October and extend for 9 consecutive days.
3. Period Four: The season shall open on the first Saturday in November and extend for 9 consecutive days.
4. Period Five: The season shall open on the first Saturday in December and continue for 9 consecutive days.
(C) Number of License Tags:
1. Period Two: 1 bull tag and 0 antlerless tags.
2. Period Three: 1 bull tag and 0 antlerless tags.
3. Period Four: 0 bull tags and 0 antlerless tags.
4. Period Five: 0 bull tags and 0 antlerless tags.
(10) Grizzly Island Tule Elk Hunt:
(A) Area: Those lands owned and managed by the Department of Fish and Game as the Grizzly Island Wildlife Area.
(B) Season:
1. Period One: The season for antlerless elk shall open on the Tuesday after the second Saturday in August and continue for 4 consecutive days, whereas the season for bulls and spike bulls shall open on the Thursday after the second Saturday in August and continue for 4 consecutive days.
2. Period Two: The season for antlerless elk shall open on the Tuesday after the third Saturday in August and continue for 4 consecutive days, whereas the season for bulls and spike bulls shall open on the Thursday after the third Saturday in August and continue for 4 consecutive days.
3. Period Three: The season for antlerless elk shall open on the Tuesday after the fourth Saturday in August and continue for 4 consecutive days, whereas the season for bulls and spike bulls shall open on the Thursday after the first Monday in September and continue for 4 consecutive days.
4. Period Four: The season for antlerless elk shall open on the second Tuesday in September and continue for 4 consecutive days, whereas the season for bulls and spike bulls shall open on Thursday following the second Tuesday in September and continue for 4 consecutive days.
5. Period Five: The season for antlerless elk shall open on the third Tuesday in September and continue for 4 consecutive days, whereas the season for bulls and spike

bulls shall open on the Thursday following the third Tuesday in September and continue for 4 consecutive days.
(C) Number of License Tags:
1. Period One: 0 bull tags, 4 spike bull tags, and 5 antlerless tags.
2. Period Two: 0 bull tags, 3 spike bull tags, and 8 antlerless tags.
3. Period Three: 0 bull tags, 2 spike bull tags, and 8 antlerless tags.
4. Period Four: 2 bull tags, 0 spike bull tags, and 8 antlerless tags.
5. Period Five: 2 bull tags, 2 spike bull tags, and 8 antlerless tags.
(D) Special Conditions: All tagholders will be required to attend a mandatory orientation. Tagholders will be notified of the time and location of the orientation meeting after receipt of their elk license tags.
(11) Fort Hunter Liggett General Public Tule Elk Hunt:
(A) Area: That portion of Monterey County lying within the exterior boundaries of Fort Hunter Liggett, except as restricted by the Commanding Officer.
(B) Season:
1. Period One: The season shall open on the first Tuesday in November and continue for 9 consecutive days.
2. Period Two: The season shall open on the Tuesday preceding the fourth Thursday in November and continue for 9 consecutive days.
3. Period Three: The season shall open on the Saturday preceding December 25 and continue for 14 consecutive days.
(C) Due to military operations, season dates are subject to further restriction, or may be rescheduled between August 1 and January 31 by the Commanding Officer.
(D) Number of License Tags:
1. Period One: 4 antlerless tags.
2. Period Two: 4 antlerless tags.
3. Period Three: 4 bull tags.
(E) Special Conditions:
1. All tagholders will be required to attend a mandatory hunter orientation. Tagholders will be notified of the time and location of the orientation meeting after receipt of their elk license tags.
2. Tagholders shall be required to purchase an annual hunting pass available from Fort Hunter Liggett.
3. All successful tagholders will be required to have their tags validated on Fort Hunter Liggett prior to leaving. All unsuccessful tag holders will be required to turn in their unfilled tags to Fort Hunter Liggett immediately upon completion of their hunt.
4. Season dates and hunt areas are subject to restriction by the Commanding Officer of Fort Hunter Liggett based on military training.
(12) East Park Reservoir Tule Elk Hunt:
(A) Area: In those portions of Glenn and Colusa counties within a line beginning in Glenn County at the junction of Interstate Highway 5 and Highway 162 at Willows; west along Highway 162 (Highway 162 becomes Alder Springs Road) to the Glenn-Mendocino County line; south along the Glenn-Mendocino County line to the Glenn-Lake County line; east and then south along the Glenn-Lake County line to the Colusa-Lake County line; west, and then southeast along the Colusa-Lake County line to Goat Mountain Road; north and east along Goat Mountain Road to the Lodoga-Stonyford

Road; east along the Lodoga-Stonyford Road to the Sites-Lodoga Road at Lodoga; east along the Sites-Lodoga Road to the Maxwell-Sites Road at Sites; east along the Maxwell-Sites Road to Interstate Highway 5 at Maxwell; north along Interstate Highway 5 to the point of beginning.
(B) Season: The season shall open the first Saturday in September and continue for 27 consecutive days.
(C) Number of License Tags: 2 bull tags and 2 antlerless tags.
(D) Special Conditions:
1. All tagholders will be required to attend a mandatory orientation. Tagholders will be notified of the time and location of the orientation meeting after receipt of their elk license tags.
2. Access to private land may be restricted or require payment of an access fee.
3. A Colusa County ordinance prohibits firearms on land administered by the USDI Bureau of Reclamation in the vicinity of East Park Reservoir. A variance has been requested to allow use of muzzleloaders (as defined in Section 353) on Bureau of Reclamation land within the hunt zone.
(13) San Luis Reservoir Tule Elk Hunt:
(A) Area: In those portions of Merced, Fresno, San Benito, and Santa Clara counties within a line beginning in Merced County at the junction of Highway 152 and Interstate 5 near the town of Santa Nella, west along Highway 152 to Highway 156 in Santa Clara County, southwest along Highway 156 to Highway 25 near the town of Hollister in San Benito County, south along Highway 25 to the town of Paicine, south and east along J1 to Little Panoche Road, North and east along Little Panoche Road to Interstate 5 in Fresno County, north along Interstate 5 to the point of beginning.
(B) Season: The season shall open on the first Saturday in October and continue for 23 consecutive days.
(C) Number of License Tags: 0 bull tags, 0 antlerless tags, and 5 either-sex tags.
(14) Bear Valley Tule Elk Hunt:
(A) Area: in those portions of Colusa, Lake, and Yolo counties within a line beginning in Colusa County at the junction of Interstate Highway 5 and Maxwell Sites Road at Maxwell; west along Maxwell Sites Road to the Sites Lodoga Road; west along the Sites Lodoga Road to Lodoga Stonyford Road; west along Lodoga Stonyford Road to Goat Mountain Road; west and south along Goat Mountain Road to the Colusa-Lake County line; south and west along the Colusa-Lake County line to Forest Route M5; south along Forest Route M5 to Bartlett Springs Road; east along Bartlett Springs Road to Highway 20; east on Highway 20 to the fork of Cache Creek; north on the north fork of Cache Creek to Indian Valley Reservoir to Walker Ridge-Indian Valley Reservoir Access Road; east on Walker Ridge-Indian Valley Reservoir Access Road to Walker Ridge Road; south on Walker Ridge Road to Highway 20; east on Highway 20 to Highway 16; south on Highway 16 to Rayhouse Road; south and west on Rayhouse Road to the Yolo-Napa County line; east and south along the Yolo-Napa County line to Road 8053; east on Road 8053 to County Road 78A; east on County Road 78A to Highway 16; east on Highway 16 to Route E4 at Capay; north and east on Route E4 to Interstate Highway 5; north on Interstate Highway 5 to the point of beginning.
(B) Season: The season shall open on the second Saturday in October and continue for 9 consecutive days.

(C) Number of License Tags: 3 bull tags and 2 antlerless tags.
(15) Lake Pillsbury Tule Elk Hunt:
(A) Area: in those portions of Lake County within a line beginning at the junction of the Glenn-Lake County line and the Mendocino County line; south and west along the Mendocino-Lake County line to Highway 20; southeast on Highway 20 to the intersection of Bartlett Springs Road; north and east along Bartlett Springs Road to the intersection of Forest Route M5; northwest on Forest Route M5 to the Colusa-Lake County Line; northwest and east on the Colusa-Lake County Line to the junction of the Glenn-Colusa County Line and the Lake-Glenn County Line; north and west on the Lake-Glenn County Line to the point of beginning.
(B) Season:
1. Antlerless Season. The antlerless season shall open on the Wednesday preceding the second Saturday in September and continue for 10 consecutive days.
2. Bull Season. The bull season shall open Monday following the fourth Saturday in September and continue for 10 consecutive days.
(C) Number of License Tags: 2 bull tags and 4 antlerless tags.
(16) Santa Clara Tule Elk Hunt:
(A) Area: Those portions of Merced, Santa Clara, and Stanislaus Counties within the following line: beginning at the intersection of the Interstate 5 and the San Joaquin/Stanislaus County line; southeast along Interstate 5 to the intersection of Highway 152; west along Highway 152 to the intersection of Highway 101 near the town of Gilroy; north along Highway 101 to the intersection of Interstate 680 near San Jose; north along Interstate 680 to the intersection of the Alameda/Santa Clara County line; east along the Alameda/Santa Clara County line to the intersection of the San Joaquin, Stanislaus, Alameda, Santa Clara County lines; northeast along the San Joaquin/Stanislaus County line to the point of beginning.
(B) Season: The season shall open on the second Saturday in October and continue for 16 consecutive days.
(C) Number of License Tags: 0 bull tags.
(17) Alameda Tule Elk Hunt:
(A) Area: Those portions of Alameda and San Joaquin Counties within the following line: beginning at the intersection of the Interstate 5 and the San Joaquin/Stanislaus County line; southwest along the San Joaquin/Stanislaus County line to the intersection of the San Joaquin, Stanislaus, Alameda, Santa Clara County lines; west along the Alameda/Santa Clara County Line to the intersection of Interstate 680; north along Interstate 680 to the intersection of Interstate 580; east and south along Interstate 580 to the intersection of Interstate 5; south along Interstate 5 to the point of beginning.
(B) Season: The season shall open on the second Saturday in October and continue for 16 consecutive days.
(C) Number of License Tags: 0 bull tags.
(e) Department Administered General Methods Apprentice Elk Hunts:
(1) Marble Mountains Roosevelt Apprentice Elk Hunt:
(A) Area: The tag shall be valid in the area described in subsection 364(a)(6)(A).
(B) Season: The season shall open on the Wednesday preceding the second Saturday in September and continue for 12 consecutive days.
(C) Number of License Tags: 2 either-sex tags.

(D) Special Conditions: Only persons possessing valid junior hunting licenses may apply for Apprentice Hunt license tags. Apprentice Hunt tagholders shall be accompanied by a nonhunting, licensed adult chaperon 18 years of age or older while hunting.
(2) Northeastern California Rocky Mountain Apprentice Elk Hunt:
(A) Area: The tag shall be valid in the area described in subsection 364(b)(1)(A).
(B) Season: The season shall open on the Wednesday preceding the third Saturday in September and continue for 12 consecutive days.
(C) Number of License Tags: Apprentice Season: 2 either-sex tags.
(D) Special Conditions: Only persons possessing valid junior hunting licenses may apply for Apprentice Hunt License tags. Apprentice Hunt tagholders shall be accompanied by a nonhunting, licensed adult chaperon 18 years of age or older while hunting.
(3) Cache Creek Tule Elk Apprentice Hunt:
(A) Area: The tag shall be valid in the area described in subsection 364(d)(1)(A).
(B) Season: The season shall open on the second Saturday in October and continue for 16 consecutive days.
(C) Number of License Tags: Apprentice Season: 1 bull tag.
(D) Special Conditions:
1. All tagholders will be required to attend a mandatory orientation. Tagholders will be notified of the time and location of the orientation meeting upon receipt of their elk license tags.
2. Only persons possessing valid junior hunting licenses may apply for Apprentice Hunt license tags. Apprentice Hunt tagholders shall be accompanied by a nonhunting, licensed adult chaperon 18 years of age or older while hunting.
(4) La Panza Tule Elk Apprentice Hunt:
(A) Area: The tag shall be valid in the area described in subsection 364(d)(2)(A).
(B) Season: Period One shall open on the second Saturday in October and extend for 23 consecutive days.
(C) Number of License Tags: Period One: 1 antlerless tag and 0 bull tags.
(D) Special Conditions:
1. All tagholders will be required to attend a mandatory orientation. Tagholders will be notified of the time and location of the orientation meeting after receipt of their elk license tags.
2. Only persons possessing valid junior hunting licenses may apply for Apprentice Hunt license tags. Apprentice Hunter tagholders shall be accompanied by a nonhunting, licensed adult chaperon 18 years of age or older while hunting.
(5) Bishop Tule Elk Apprentice Hunt:
(A) Area: The tag shall be valid in the area described in subsection 364(d)(3)(A).
(B) Season: Period Two shall open on the first Saturday in October and extend for 9 consecutive days.
(C) Number of License Tags: Period Two: 0 bull tags and 0 antlerless tags.
(D) Special Conditions: Only persons possessing valid junior hunting licenses may apply for Apprentice Hunt license tags. Apprentice Hunt tagholders shall be accompanied by a nonhunting, licensed adult chaperon 18 years of age or older while hunting.

(6) Grizzly Island Tule Elk Apprentice Hunt:
(A) Area: The tag shall be valid in the area described in subsection 364(d)(10)(A).
(B) Season:
1. Period One Season for antlerless elk shall open on the Tuesday after the second Saturday in August and continue for 4 consecutive days, whereas the season for spike bulls shall open on the Thursday after the second Saturday in August and continue for 4 consecutive days.
2. Period Two Season for spike bulls shall open on the Thursday after the third Saturday in August and continue for 4 consecutive days.
(C) Number of License Tags:
1. Period One: 3 antlerless tags and 1 spike bull tag.
2. Period Two: 2 spike bull tags.
(D) Special Conditions:
1. All tagholders will be required to attend a mandatory orientation. Tagholders will be notified of the time and location of the orientation meeting after receipt of their elk license tags.
2. Only persons possessing valid junior hunting licenses may apply for Apprentice Hunt license tags. Apprentice Hunt tagholders shall be accompanied by a nonhunting, licensed adult chaperon 18 years of age or older while hunting.
(7) Fort Hunter Liggett General Public Tule Elk Apprentice Hunt:
(A) Area: The tag shall be valid in the area described in subsection 364(d)(11)(A).
(B) Season: The season shall open on the Saturday preceding December 25 and continue for 14 consecutive days.
(C) Due to military operations, season dates are subject to further restriction, or may be rescheduled between August 1 and January 31 by the Commanding Officer.
(D) Number of License Tags: 1 bull tag and 1 antlerless tags.
(E) Special Conditions:
1. All tagholders will be required to attend a mandatory hunter orientation. Tagholders will be notified of the time and location of the orientation meeting after receipt of their elk license tags.
2. Tagholders shall be required to purchase an annual hunting pass available from Fort Hunter Liggett.
3. Only persons possessing valid junior hunting licenses may apply for Apprentice Hunt license tags. Apprentice Hunt tagholders shall be accompanied by a nonhunting, licensed adult chaperon 18 years of age or older while hunting.
4. All successful tagholders will be required to have their tags validated on Fort Hunter Liggett prior to leaving. All unsuccessful tag holders will be required to turn in their unfilled tags to Fort Hunter Liggett immediately upon completion of their hunt.
5. Season dates and hunt areas are subject to restriction by the Commanding Officer of Fort Hunter Liggett based on military training.
(f) Department Administered Archery Only Elk Hunts:
(1) Northeastern California Rocky Mountain Archery Only Elk Hunt:
(A) Area: The tag shall be valid in the area described in subsection 364(b)(1)(A).
(B) Season: The season shall open on the Wednesday preceding the first Saturday in September and continue for 12 consecutive days
(C) Number of License Tags: 10 either-sex tags.

(E) Special Conditions: Elk may be taken with Archery Equipment only as specified in Section 354.
(2) Owens Valley Multiple Zone Tule Elk Archery Only Hunt:
(A) Area: The tag shall be valid in areas described in subsections 364(d)(3)(A), (d)(4)(A), (d)(5)(A), (d)(8)(A), and (d)(9)(A).
(B) Season: The season shall open on the second Saturday in August and extend for 9 consecutive days.
(C) Number of License Tags: 5 bull tags and 0 antlerless tags.
(D) Special Conditions: Elk may be taken with Archery Equipment only as specified in Section 354.
(3) Lone Pine Tule Elk Archery Only Hunt:
(A) Area: The tag shall be valid in the area described in subsection 364(d)(5)(A).
(B) Season: Period One Season shall open on the second Saturday in September and extend for 16 consecutive days.
(C) Number of License Tags: Period One: 0 bull tags and 0 antlerless tags.
(D) Special Conditions: Elk may be taken with Archery Equipment only as specified in Section 354.
(4) Tinemaha Tule Elk Archery Only Hunt:
(A) Area: The tag shall be valid in the area described in subsection 364(d)(6)(A).
(B) Season: Period One Season shall open on the second Saturday in September and extend for 16 consecutive days.
(C) Number of License Tags: Period One: 1 bull tag and 0 antlerless tags.
(D) Special Conditions: Elk may be taken with Archery Equipment only as specified in Section 354.
(5) Whitney Tule Elk Archery Only Hunt:
(A) Area: The tag shall be valid in the area described in subsection 364(d)(9)(A).
(B) Season: Period One Season shall open on the second Saturday in September and extend for 16 consecutive days.
(C) Bag and Possession Limit: 1 elk per season.
(D) Number of License Tags: Period One: 0 bull tags and 0 antlerless tags.
(E) Special Conditions: Elk may be taken with Archery Equipment only as specified in Section 354.
(6) Fort Hunter Liggett General Public Tule Elk Archery Only Hunt:
(A) Area: The tag shall be valid in the area described in subsection 364(d)(11)(A).
(B) Season:
1. Either-sex season shall open on the last Wednesday in July and continue for 9 consecutive days.
2. Antlerless Season shall open on the last Wednesday in September and continue for 9 consecutive days.
(C) Due to military operations, season dates are subject to further restriction, or may be rescheduled between August 1 and January 31 by the Commanding Officer.
(D) Number of License Tags: 2 either-sex tags and 4 antlerless tags.
(E) Special Conditions:
1. All tagholders will be required to attend a mandatory hunter orientation. Tagholders will be notified of the time and location of the orientation meeting after receipt of their elk license tags.

2. Tagholders shall be required to purchase an annual hunting pass available from Fort Hunter Liggett.
3. Elk may be taken with Archery Equipment only as specified in Section 354.
4. All successful tagholders will be required to have their tags validated on Fort Hunter Liggett prior to leaving. All unsuccessful tag holders will be required to turn in their unfilled tags to Fort Hunter Liggett immediately upon completion of their hunt.
5. Season dates and hunt areas are subject to restriction by the Commanding Officer of Fort Hunter Liggett based on military training.
(g) Department Administered Muzzleloader Only Elk Hunts:
(1) Bishop Tule Elk Hunt Muzzleloader Only Hunt:
(A) Area: The tag shall be valid in the area described in subsection 364(d)(3)(A).
(B) Season: Period One Season shall open on the second Saturday in September and extend for 16 consecutive days.
(C) Number of License Tags: Period One: 1 bull tag and 0 antlerless tags.
(D) Special Conditions: Elk may be taken with muzzleloader equipment only as specified in Section 353.
(2) Independence Tule Elk Muzzleloader Only Hunt:
(A) Area: The tag shall be valid in the area described in subsection 364(d)(4)(A).
(B) Season: Period One Season shall open on the second Saturday in September and extend for 16 consecutive days.
(C) Number of License Tags: Period One: 1 bull tag and 0 antlerless tags.
(D) Special Conditions: Elk may be taken with muzzleloader equipment only as specified in Section 353.
(3) Fort Hunter Liggett General Public Tule Elk Muzzleloader Only Hunt:
(A) Area: The tag shall be valid in the area described in subsection 364(d)(11)(A).
(B) Season: The season shall open on the Wednesday preceding the fourth Thursday in November and continue for 9 consecutive days.
(C) Due to military operations, season dates are subject to further restriction, or may be rescheduled between August 1 and January 31 by the Commanding Officer.
(D) Number of License Tags: 0 bull tags.
(E) Special Conditions:
1. All tagholders will be required to attend a mandatory hunter orientation. Tagholders will be notified of the time and location of the orientation meeting after receipt of their elk license tags.
2. Tagholders shall be required to purchase an annual hunting pass available from Fort Hunter Liggett.
3. Elk may be taken with Muzzleloader Equipment only as specified in Section 353.
4. All successful tagholders will be required to have their tags validated on Fort Hunter Liggett prior to leaving. All unsuccessful tag holders will be required to turn in their unfilled tags to Fort Hunter Liggett immediately upon completion of their hunt.
5. Season dates and hunt areas are subject to restriction by the Commanding Officer of Fort Hunter Liggett based on military training.
(h) Department Administered Muzzleloader/Archery Only Elk Hunts:
(1) Marble Mountains Roosevelt Elk Muzzleloader/Archery Only Elk Hunt.
(A) Area: The tag shall be valid in the area described in subsection 364(a)(6)(A).

(B) Season: The Season shall open on the last Saturday in October and extend for 9 consecutive days.
(C) Number of License Tags: 5 either-sex tags.
(D) Special Conditions: Elk may be taken with archery or muzzleloader equipment only as specified in Sections 353 and 354.
(i) Fund Raising Elk Tags:
(1) Multi-zone Fund Raising License Tag.
(A) Area: The tag shall be valid in the areas described in subsections 364(a)(1)(A), (a)(3)(A), (a)(6)(A), (b)(1)(A), and (d)(2)(A).
(B) Season: The tag shall be valid during the following seasons.
1. Siskiyou and Marble Mountains Roosevelt Elk Season shall open on the Wednesday preceding the first Saturday in September and continue for 19 consecutive days.
2. Northwestern Roosevelt Elk Season shall open on last Wednesday in August and continue for 30 consecutive days.
3. Northeastern Rocky Mountain Elk Season shall open on the Wednesday preceding the last Saturday in August and continue for 33 consecutive days.
4. La Panza Tule Elk Season shall open on the first Saturday in October and extend for 65 consecutive days.
(C) Number of License Tags: 1 bull tag.
(2) Grizzly Island Fund Raising License Tag.
(A) Area: The tag shall be valid in the area described in subsection 364(d)(10)(A).
(B) Season: The Season shall open on the first Saturday in August and continue for 30 consecutive days, with advance reservations required by contacting the Grizzly Island Wildlife Area by telephone at (707) 425-3828.
(C) Number of License Tags: 1 bull tag.
(3) Owens Valley Fund Raising License Tag.
(A) Area: The tag shall be valid in areas described in subsections 364(d)(3)(A), (d)(4)(A), (d)(5)(A), (d)(6)(A), (d)(7)(A), (d)(8)(A), and (d)(9)(A).
(B) Season: The Season shall open on the last Saturday in July and extend for 30 consecutive days.
(C) Number of License Tags: 1 bull tag.
(j) Military Only Elk Tags. These hunts are sponsored and tag quotas are set by the Department. The tags are assigned and the hunts are administered by the Department of Defense.
(1) Fort Hunter Liggett Military General Methods Tule Elk Hunt:
(A) Area: The tag shall be valid in the area described in subsection 364(d)(11)(A).
(B) Season:
1. The Early Season shall open on the third Monday in August and continue for 5 consecutive days and reopen on the fourth Monday in August and continue for 5 consecutive days.
2. Period One: The season shall open on the first Tuesday in November and continue for 9 consecutive days.
3. Period Two: The season shall open on the Tuesday preceding the fourth Thursday in November and continue for 9 consecutive days.
4. Period Three: The season shall open on the Saturday preceding December 25 and continue for 14 consecutive days.

(C) Due to military operations, season dates are subject to further restriction, or may be rescheduled between August 1 and January 31 by the Commanding Officer.
(D) Number of License Tags:
1. Early Season: 2 bull tags and 1 antlerless tag.
2. Period One: 4 antlerless tags.
3. Period Two: 4 antlerless tags.
4. Period Three: 4 bull tags.
(E) Special Conditions:
1. All tagholders will be required to attend a mandatory hunter orientation. Tagholders will be notified of the time and location of the orientation meeting after receipt of their elk license tags.
2. Tagholders shall be required to purchase an annual hunting pass available from Fort Hunter Liggett.
3. All successful tagholders will be required to have their tags validated on Fort Hunter Liggett prior to leaving. All unsuccessful tag holders will be required to turn in their unfilled tags to Fort Hunter Liggett immediately upon completion of their hunt.
4. Season dates and hunt areas are subject to restriction by the Commanding Officer of Fort Hunter Liggett based on military training.
(2) Fort Hunter Liggett Military Apprentice Tule Elk Hunt:
(A) Area: The tag shall be valid in the area described in subsection 364(d)(11)(A).
(B) Season: The season shall open on the Saturday preceding December 25 and continue for 14 consecutive days.
(C) Due to military operations, season dates are subject to further restriction, or may be rescheduled between August 1 and January 31 by the Commanding Officer.
(D) Number of License Tags: 1 bull tag and 1 antlerless tags.
(E) Special Conditions:
1. All tagholders will be required to attend a mandatory hunter orientation. Tagholders will be notified of the time and location of the orientation meeting after receipt of their elk license tags.
2. Tagholders shall be required to purchase an annual hunting pass available from Fort Hunter Liggett.
3. Season dates and hunt areas are subject to restriction by the Commanding Officer of Fort Hunter Liggett based on military training.
4. All successful tagholders will be required to have their tags validated on Fort Hunter Liggett prior to leaving. All unsuccessful tag holders will be required to turn in their unfilled tags to Fort Hunter Liggett immediately upon completion of their hunt.
5. Only persons possessing valid junior hunting licenses may apply for Apprentice Hunt license tags. Apprentice Hunt tagholders shall be accompanied by a nonhunting, licensed adult chaperon 18 years of age or older while hunting.
(3) Fort Hunter Liggett Military Archery Only Tule Elk Hunt:
(A) Area: The tag shall be valid in the area described in subsection 364(d)(11)(A).
(B) Season:
1. Either-sex season shall open on the last Wednesday in July and continue for 9 consecutive days.
2. Antlerless Season shall open on the last Wednesday in September and continue for 9 consecutive days.

(C) Due to military operations, season dates are subject to further restriction, or may be rescheduled between August 1 and January 31 by the Commanding Officer.
(D) Number of License Tags: 2 either-sex tags and 4 antlerless tags.
(E) Special Conditions:
1. Elk may be taken with Archery Equipment only as specified in Section 354.
2. All tagholders will be required to attend a mandatory hunter orientation. Tagholders will be notified of the time and location of the orientation meeting upon receipt of their elk license tags.
3. Tagholders shall be required to purchase an annual hunting pass available from Fort Hunter Liggett.
4. All successful tagholders will be required to have their tags validated on Fort Hunter Liggett prior to leaving. All unsuccessful tag holders will be required to turn in their unfilled tags to Fort Hunter Liggett immediately upon completion of their hunt.
5. Season dates and hunt areas are subject to restriction by the Commanding Officer of Fort Hunter Liggett based on military training.
(4) Fort Hunter Liggett Military Muzzleloader Only Tule Elk Hunt:
(A) Area: The tag shall be valid in the area described in subsection 364(d)(11)(A).
(B) Season: The season shall open on the Wednesday preceding the fourth Thursday in November and continue for 9 consecutive days.
(C) Due to military operations, season dates are subject to further restriction, or may be rescheduled between August 1 and January 31 by the Commanding Officer.
(D) Number of License Tags: 0 bull tags.
(E) Special Conditions:
1. Elk may be taken with Muzzleloader Equipment only as specified in Section 353.
2. All tagholders will be required to attend a mandatory hunter orientation. Tagholders will be notified of the time and location of the orientation meeting upon receipt of their elk license tags.
3. Tagholders shall be required to purchase an annual hunting pass available from Fort Hunter Liggett.
4. All successful tagholders will be required to have their tags validated on Fort Hunter Liggett prior to leaving. All unsuccessful tag holders will be required to turn in their unfilled tags to Fort Hunter Liggett immediately upon completion of their hunt.
5. Season dates and hunt areas are subject to restriction by the Commanding Officer of Fort Hunter Liggett based on military training.
(k) Bag and Possession Limit: Each elk tag is valid only for one elk per season and only in the hunt area drawn. Hunt areas are described in subsections 364(a), (b), (c), (d), (e), (f), (g), (h), and (j) and persons shall only be eligible for one elk tag per season.
(*l*) Definitions:
(1) Bull elk: Any elk having an antler or antlers at least four inches in length as measured from the top of the skull.
(2) Spike bull: A bull elk having no more than one point on each antler. An antler point is a projection of the antler at least one inch long and longer than the width of its base.
(3) Antlerless elk: Any elk, with the exception of spotted calves, with antlers less than four inches in length as measured from the top of the skull.

(4) Either-sex elk: For the purposes of these regulations, either-sex is defined as bull elk, as described in subsection 364(*l*)(1), or antlerless elk as, described in subsection 364(*l*)(3).
(m) Method of Take: Only methods for taking elk as defined in Sections 353 and 354 may be used.
(n) General Method of take are those methods defined in Sections 353 and 354.
(o) Tagholder Responsibilities:
(1) No tagholder shall take or possess any elk or parts thereof governed by the regulations except herein provided.
(2) The department reserves the right to use any part of the tagholder's elk for biological analysis as long as the amount of edible meat is not appreciably decreased.
(3) Any person taking an elk which has a collar or other marking device attached to it shall provide the department with such marking device within 10 days of taking the elk.
(p) The use of dogs to take or attempt to take elk is prohibited.
Note: Authority cited: Sections 200, 202, 203, 332 and 1050, Fish and Game Code. Reference: Sections 203, 203.1, 332, 713 and 1050, Fish and Game Code.

§ 364.1. SHARE Elk Hunts.
(a) Department Administered Shared Habitat Alliance for Recreational Enhancement (SHARE) Elk Hunts:
(1) Siskiyou Roosevelt Elk SHARE Hunt:
(A) Area: Within the boundaries identified in 364(a)(1)(A). Individual property boundaries will be identified in the SHARE application package.
(2) Big Lagoon Roosevelt Elk SHARE Hunt:
(A) Area: Within the boundaries identified in 364(a)(2)(A). Individual property boundaries will be identified in the SHARE application package.
(3) Northwestern California Roosevelt Elk SHARE Hunt:
(A) Area: Within the boundaries identified in 364(a)(3)(A). Individual property boundaries will be identified in the SHARE application package.
(4) Klamath Roosevelt Elk SHARE Hunt:
(A) Area: Within the boundaries identified in 364(a)(4)(A). Individual property boundaries will be identified in the SHARE application package.
(5) Del Norte Roosevelt Elk SHARE Hunt:
(A) Area: Within the boundaries identified in 364(a)(5)(A). Individual property boundaries will be identified in the SHARE application package.
(6) Marble Mountains Roosevelt Elk SHARE Hunt
(A) Area: Within the boundaries identified in 364(a)(6)(A). Individual property boundaries will be identified in the SHARE application package.
(7) Northeastern California Rocky Mountain Elk SHARE Hunt:
(A) Area: Within the boundaries identified in 364(b)(1)(A). Individual property boundaries will be identified in the SHARE application package.
(8) Mendocino Elk SHARE Hunt:
(A) Area: Within the boundaries identified in 364(c)(1)(A). Individual property boundaries will be identified in the SHARE application package.
(9) Cache Creek Tule Elk SHARE Hunt:

(A) Area: Within the boundaries identified in 364(d)(1)(A). Individual property boundaries will be identified in the SHARE application package.
(10) La Panza Tule Elk SHARE Hunt:
(A) Area: Within the boundaries identified in 364(d)(2)(A). Individual property boundaries will be identified in the SHARE application package.
(11) Bishop Tule Elk SHARE Hunt:
(A) Area: Within the boundaries identified in 364(d)(3)(A). Individual property boundaries will be identified in the SHARE application package.
(12) Independence Tule Elk SHARE Hunt:
(A) Area: Within the boundaries identified in 364(d)(4)(A). Individual property boundaries will be identified in the SHARE application package.
(13) Lone Pine Tule Elk SHARE Hunt:
(A) Area: Within the boundaries identified in 364(d)(5)(A). Individual property boundaries will be identified in the SHARE application package.
(14) Tinemaha Tule Elk SHARE Hunt:
(A) Area: Within the boundaries identified in 364(d)(6)(A). Individual property boundaries will be identified in the SHARE application package.
(15) West Tinemaha Tule Elk SHARE Hunt:
(A) Area: Within the boundaries identified in 364(d)(7)(A). Individual property boundaries will be identified in the SHARE application package.
(16) Tinemaha Mountain Tule Elk SHARE Hunt:
(A) Area: Within the boundaries identified in 364(d)(8)(A). Individual property boundaries will be identified in the SHARE application package.
(17) Whitney Tule Elk SHARE Hunt:
(A) Area: Within the boundaries identified in 364(d)(9)(A). Individual property boundaries will be identified in the SHARE application package.
(18) Grizzly Island Tule Elk SHARE Hunt:
(A) Area: Within the boundaries identified in 364(d)(10)(A). Individual property boundaries will be identified in the SHARE application package.
(19) Fort Hunter Liggett General Public Tule Elk SHARE Hunt:
(A) Area: Within the boundaries identified in 364(d)(11)(A). Individual property boundaries will be identified in the SHARE application package.
(20) East Park Reservoir Tule Elk SHARE Hunt:
(A) Area: Within the boundaries identified in 364(d)(12)(A). Individual property boundaries will be identified in the SHARE application package.
(21) San Luis Reservoir Tule Elk SHARE Hunt:
(A) Area: Within the boundaries identified in 364(d)(13)(A). Individual property boundaries will be identified in the SHARE application package.
(22) Bear Valley Tule Elk SHARE Hunt:
(A) Area: Within the boundaries identified in 364(d)(14)(A). Individual property boundaries will be identified in the SHARE application package.
(23) Lake Pillsbury Tule Elk SHARE Hunt:
(A) Area: Within the boundaries identified in 364(d)(15)(A). Individual property boundaries will be identified in the SHARE application package.
(24) Santa Clara Tule Elk SHARE Hunt:

(A) Area: Within the boundaries identified in 364(d)(16)(A). Individual property boundaries will be identified in the SHARE application package.
(25) Alameda Tule Elk SHARE Hunt:
(A) Area: Within the boundaries identified in 364(d)(17)(A). Individual property boundaries will be identified in the SHARE application package.
(b) Season: The overall season shall open on the August 15 through January 31. Individual SHARE properties will be assigned seasons corresponding with management goals.
(c) Number of SHARE Elk License Tags

364.1	2015 Final SHARE Elk Tag Allocation				
§	Hunt Name	Bull	Antlerless	Either-sex	Spike
(1)	Siskiyou	10	10		
(2)	Big Lagoon	0	0		
(3)	Northwestern California	0	0	0	
(4)	Klamath	0	0		
(5)	Del Norte	0	0		
(6)	Marble Mountains	5	10		
(7)	Northeastern California	0	0		
(8)	Mendocino	2	2		
(9)	Cache Creek	1	1		
(10)	La Panza	12	11		
(11)	Bishop	0	0		
(12)	Independence	0	0		
(13)	Lone Pine	0	0		
(14)	Tinemaha	0	0		
(15)	West Tinemaha	0	0		
(16)	Tinemaha Mountain	0			
(17)	Whitney	0	0		
(18)	Grizzly Island	0	0		0
(19)	Fort Hunter Liggett	0	0	0	
(20)	East Park Reservoir	2	4		
(21)	San Luis Reservoir	0	0	5	
(22)	Bear Valley	1	0		
(23)	Lake Pillsbury	0	0		
(24)	Santa Clara	0			
(25)	Alameda	0			

(d) Bag and Possession Limit: Each elk tag is valid only for one elk per season and only in the SHARE hunt area drawn, and persons shall only be eligible for one elk tag per season.
(e) Definitions:

(1) Bull elk: Any elk having an antler or antlers at least four inches in length as measured from the top of the skull.
(2) Spike bull: A bull elk having no more than one point on each antler. An antler point is a projection of the antler at least one inch long and longer than the width of its base.
(3) Antlerless elk: Any elk, with the exception of spotted calves, with antlers less than four inches in length as measured from the top of the skull.
(4) Either-sex elk: For the purposes of these regulations, either-sex is defined as bull elk or antlerless elk.
(f) Method of Take: Only methods for taking elk as defined in Sections 353 and 354 may be used.
(g) Tagholder Responsibilities:
(1) No tagholder shall take or possess any elk or parts thereof governed by the regulations except herein provided.
(2) The department reserves the right to use any part of the tagholder's elk for biological analysis as long as the amount of edible meat is not appreciably decreased.
(3) Any person taking an elk which has a collar or other marking device attached to it shall provide the department with such marking device within 10 days of taking the elk.
(h) The use of dogs to take or attempt to take elk is prohibited.
(i) Applicants shall apply for a SHARE Access Permit, and pay a nonrefundable application fee as specified in Section 602, through the department’s Automated License Data System terminals at any department license agent, department license sales office or online.
(j) Upon receipt of winner notification successful applicants shall submit the appropriate tag fee as specified in Section 702 through any department license sales office or online through the department’s Automated License Data System.

Note: Authority Cited: Sections 200, 203, 203.1, 204, 332, and 1050,Fish and Game Code. Reference: Sections 332, 1050, 1570, 1571, 1572, 1573, and 1574, Fish and Game Code.

Appendix 18. 2015 PLM List and Authorized Harvest

PLM Name	Authorized Bull Harvest	Authorized Antlerless Harvest
ALEXANDER RANCH	1	2
ALEXANDER DAIRY	2	2
AMANN RANCH	1	
AVENALES RANCH	3	
BARDIN RANCH	2	4
BIG LAGOON	3	
BLACK RANCH	1	1
CAMP 5 OUTFITTERS (MORISOLI)	3	3
CAPISTRAN RANCH	2	2
CARNAZA WILDLIFE MGT AREA	3	3
CARRIZO RANCH	3	4
CHIMNEY ROCK RANCH	2	2
CLARK AND WHITE RANCH	3	2
D-RAFTER L RANCH	1	1
CONNOLLY/CORRAL HOLLOW RANCH	1	1
COTTRELL RANCH	1	1
DEFRANCESCO AND EATON	2	1
EDEN VALLEY RANCH	8	7
FULTON RANCH	1	
GABILAN RANCH	3	1
HARTNELL RANCH	1	2
HEARST RANCH	6	6
HUNTER RANCH	1	
INDIAN VALLEY CATTLE CO.	3	2
ISABEL VALLEY RANCH	1	
JS RANCH	1	
KLAMATH RANCH	2	
LEWIS RANCH	1	1
LONE RANCH	3	2
MILLER-ERIKSEN RANCH	1	
PBM FARMS	1	
PEACHTREE RANCH	4	2
POTTER VALLEY WMA	6	10
RANCHO LA CUESTA	3	1
REDWOOD HOUSE RANCH	1	
ROOSTER COMB RANCH	1	
ROSEBERG RESOURCES PONDOSA	2	2
R-R RANCH	3	6
SHAMROCK RANCH	8	10
SLICK ROCK RANCH	1	
SMITH RIVER	3	6
SPRING VALLEY RANCH	4	
STOVER RANCH	4	2
SUMMER CAMP RANCH	1	
SWEETWATER RANCH	1	
TEJON RANCH	12	3
TEMBLOR WMA	7	12
TRINCHERO RANCH	2	
WIGGINS RANCH	2	2
WORK RANCH	2	4
TOTALS	**134**	**110**

Appendix 19. Modification to Existing Regulations

Change	Proposed Tag Range	2015 Tag Quota	Proposed Season	2015 Season Dates	Change in # of days
Establish new San Emigdio Mountain tule elk hunt	0-15 bull 0-40 antlerless	N/A	Oct. 8 - 21	N/A	N/A
Establish new Camp Roberts tule elk hunt	0-10 bull 0-20 antlerless in 3 periods	N/A	**Period 1** Sept 17 - Oct 3 **Period 2** Nov. 12 - 27 **Period 3** Dec. 17- Jan 1	N/A	N/A
Split Mendocino tule elk hunt - establish 5 zones (North Coast)	0-10 bull 0-40 antlerless	4 bull 4 antlerless in total for all Mendocino	**bull** Aug. 10-19 **Antlerless** Nov. 5-14	Sept. 23 - Oct. 4	-2
Middle Fork	0-10 bull 0-40 antlerless	N/A	**bull** Aug. 10-19 **Antlerless** Nov. 5-14	Sept. 23 - Oct. 4	-2
Upper Russian	0-10 bull 0-40 antlerless	N/A	**bull** Aug. 10-19 **Antlerless** Nov. 5-14	Sept. 23 - Oct. 4	-2
Little Lake	0-5 bull 0-10 antlerless	N/A	**bull** Aug. 10-19 **Antlerless** Nov. 5-14	Sept. 23 - Oct. 4	-2
South Coast	0-5 bull 0-10 antlerless	N/A	**bull** Aug. 10-19 **Antlerless** Nov. 5-14	Sept. 23 - Oct. 4	-2
Split Independence tule elk hunt- establish Goodale tule elk hunt	0-10 bull 0-10 antlerless in five periods	5 bull	No change	N/A	N/A
Split Northwestern Roosevelt elk hunt -establish Del Norte and Humboldt County Roosevelt elk hunts	N/A	N/A	N/A	N/A	N/A
Modify tag ranges and season dates for Northwestern (Proposed Del Norte and Humboldt) Roosevelt elk hunt	**Del Norte** 0-15 bull 0-25 antlerless 0-10 either-sex in 5 periods **Humboldt** 0-20 bull 0-50 antlerless 0-10 either-sex in 5 periods	45 either-sex	Sept. 1-20 Oct. 1-20 Nov. 1-20 Dec. 1-20 Jan. 1-20 Sept. 1-20 Oct. 1-20 Nov. 1-20 Dec. 1-20 Jan. 1-20	Sept 2. - 24	78
Split Marble Mountain Roosevelt elk hunt - establish Marble Mountain South and Marble Mountain North Roosevelt elk hunts.	N/A	N/A	N/A	N/A	N/A

Modify tag ranges and season dates for the Marble Mountain (proposed Marble Mountain North and South) Roosevelt elk hunt.	**Archery/ Muzzle loader** 0-20 either-sex **Period 1** 0-50 bull 0-20 antlerless **Period 2** 0-10 bull 0-40 antlerless **Period 3** 0-5 bull 0-15 antlerless for both Marble Mountain North and South	5 **Arch/Muzzleloader** either-sex **General Season** 35 bull 10 antlerless	**Arch/Muzz** Aug. 31 - Sept. 8 **Period 1** Sept 10-21 **Period 2** Sept. 24 -Oct. 5 **Period 3** Nov. 2-17 for both Marble Mountain North and South	**Arch/Muzz** Oct. 31-Nov. 8 **General Season** Sept. 9-20	19
Modify tag ranges and season dates for Northeastern Rocky Mountain elk hunts	**Archery** 0-10 bull, 0-10 antlerless, & 0-20 either-sex **Gen. Method** 0-30 bull 0-20 antlerless	**Archery** 10 either-sex. **General Method** 15 bull 10 antlerless	**Archery** Aug. 31-Sept. 11 **General Method** bull Sept. 19-30 antlerless Nov. 12-23	**Archery** Sept. 2-13 **General Methods** Sept. 16-27	12
Modify Fort Hunter Liggett tule elk hunt boundaries - Change name to Fort Hunter Liggett Central Coast	N/A	N/A	N/A	N/A	N/A
Modify season tag ranges and season dates for Fort Hunter Liggett tule elk hunts.	**Public and Military Apprentice** 0-4 bull 0-16 antlerless **Archery** 0-20 either-sex 0-20 antlerless **Muzzleloader** 0-12 bull 0-20 antlerless **General Method Per.** 1 0-14 bull 0-32 antlerless **Per. 2** 0-16 bull 0-30 antlerless **Per. 3** 0-28 bull 0-14 antlerless **Military Only early season** 0-2 bull 0-2 antlerless	**Public and Military Apprentice** 2 bull 2 antlerless **Archery** 4 either-sex 8 antlerless **Muzzleloader** 0 bull 0 antlerless **General Method Per. 1** 0 bull 8 antlerless **Per. 2** 0 bull 8 antlerless **Per. 3** 8 bull 0 antlerless **Military Only early season** 2 bull 1 antlerless	**Public and Military Apprentice** Dec. 17-Jan. 1 **Archery either-sex** July 27 Aug. 4 **antlerless** Sept. 28-Oct. 6 **Muzzleloader** Oct. 8-19 **General Method Per.** 1 Nov. 3-11 **Per. 2** Nov. 22-30 **Per. 3** Dec. 17-Jan. 1 **Military Only early season** Aug 17-21 & Aug 24-28	**Public and Military Apprentice** Dec. 19-Jan. 1 **Archery either-sex** July 29 Aug. 6 **antlerless** Sept. 30-Oct. 8 **Muzzleloader** Oct. 10-21 **General Method Per.** 1 Nov. 3-11 **Per. 2** Nov. 22-30 **Per. 3** Dec. 19-Jan. 1 **Military Only early season** Aug 8-12 & Aug 22-26	0 2 0
Modify Grizzly Island tule elk hunt boundaries	N/A	N/A	N/A	N/A	N/A

Modify tag ranges and season dates for Grizzly Island tule elk hunts.	**13 General Periods** 0-3 bull 0-12 antlerless 0-10 spike in each period **Apprentice** 0-4 antlerless 0-4 spike in first four periods	**General Method** **Per 1.** 5 antlerless 4 spike **Per. 2** 8 antlerless 3 spike **Per. 3** 8 antlerless 2 spike **Per. 4** 2 bull 8 antlerless **Per. 5** 2 bull 8 antlerless 2 spike **Apprentice** **Per 1.** 3 antlerless 1 spike **Per. 2** 2 spike	**General Method Per. 1** Aug. 16-19 **Per. 2** Aug. 18-21 **Per. 3** Aug. 23-26 **Per. 4** Aug 25-28 **Per. 5** Aug. 30-Sept. 3 **Per. 6** Sept. 1-4 **Per. 7** Sept. 6-9 **Per. 8** Sept. 8-11 **Per. 9** Sept. 13-16 **Per. 10** Sept. 15-18 **Per. 11** Sept. 20-23 **Per. 12** Sept. 22-25 **Per. 13** Sept. 27-30 **Apprentice** **Per. 1** Aug. 16-19 **Per. 2** Aug. 18-21 **Per. 3** Aug. 23-26 **Per. 4** Aug 25-28	**General Method** **Per. 1 antlerless** Aug. 11-14 **spike** Aug. 13-16 **Per. 2** **antlerless** Aug. 18-21 **spike** Aug. 20-23 **Per. 3** **antlerless** Aug. 25-28 **spike** Sept. 10-13 **Per. 4** **antlerless** Sept. 8-11 **bull** Sept. 10-13 **Per. 5** **antlerless** Sept. 15-18 **bull** Sept. 17-20 **spike** Sept. 17-20 **Apprentice** **Per 1.** **Antlerless** Aug. 11-14 **spike** Aug. 13-16 **Per. 2 spike** Aug. 20-23	8
Modify La Panza tule elk zone boundaries	N/A	N/A	N/A	N/A	N/A
Modify tag ranges for La Panza tule elk hunts.	**Period 1** 0-20 bull 0-30 antlerless **Period 2** 0-20 bull 0-30 antlerless **Apprentice** 0-2 bull 0-2 antlerless	**Period 1** 6 bull 5 antlerless **Period 2** 6 bull 6 antlerless **Apprentice** **Per. 1** 1 antlerless	N/A	N/A	N/A
Modify tag ranges and season dates for Lake Pillsbury tule elk hunt.	0-10 bull 0-10 antlerless for 3 periods	2 bull 4 antlerless	**Per. 1** Sept. 26-Oct. 5 **Per. 2** Oct. 12-21 **Per. 3** Oct. 26-Nov 4	**antlerless** Sept. 9-18 **bull** Sept. 28-Oct. 7	10
Modify San Luis Reservoir tule elk hunt tag ranges and season dates	0-10 bull 0-20 antlerless 0-10 either-sex	5 either-sex	**Period 1** Oct. 1-23 **Period 2** Nov. 12-23 **Period 3** Dec. 17-28	Oct. 3-25	24
Modify Bear Valley tule elk hunt tag ranges	0-10 antlerless 0-10 bull	2 antlerless 3 bull	No change	Oct. 10-18	N/A
Modify Santa Clara tule elk tag ranges	0-15 bull 0-20 antlerless	0	No change	Oct. 10-25	N/A
Modify Alameda tule elk tag ranges	0-4 bull 0-10 antlerless	0	No Change	Oct. 10-25	N/A

Modify season dates for the Multi-zone fund raising elk tag	1 bull	1 bull	Aug. 13-Nov. 10	Varied by hunt area. Opened 7 days prior to earliest season for each zone	Varies from 25 to 71
Modify Siskiyou tag ranges and season dates	**Period 1** 0-40 bull 0-40 antlerless **Period 2** 0-10 bull 0-40 antlerless **Period 3** 0-5 bull 0-20 antlerless **Archery/ Muzzleloade**r 0-20 either-sex	20 bull 20 antlerless	**Period 1** Sept. 12-21 **Period 2** Sept. 24 - Oct. 5 **Period 3** Nov. 2-17 **Archery/ Muzzleloade**r Aug. 31-Sept. 8	Sept. 9-20	37
SHARE Elk	Correspond to tag ranges in identified zones	Correspond to tag ranges in identified zones. 3 bull 3 antlerless issued	No change	Between Aug. 15-Jan 31. Seasons are assigned to properties	0

Appendix 20. Impacts of Proposed Regulation Modification

	Impacts of Hunting Elk						
	Impacts on the gene pool	**Impacts on social structure**	**Effects on habitat**	**Effects on Recreational Opportunities**	**Effects on other wildlife species**	**Effects on economics**	**Effects on public safety**
Establish new San Emigdio Mountain tule elk hunt	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant
Establish new Camp Roberts tule elk hunt	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant
Split Mendocino tule elk hunt - establish 5 zones	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant
Split Independence tule elk hunt- establish Goodale tule elk hunt	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant
Split Northwestern Roosevelt elk hunt - establish Del Norte and Humboldt County Roosevelt elk hunts	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant
Modify tag ranges and season dates for Northwestern (Proposed Del Norte and Humboldt) Roosevelt elk hunt	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant
Split Marble Mountain Roosevelt elk hunt - establish Marble Mountain South and Marble Mountain North Roosevelt elk hunts.	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant
Modify tag ranges and season dates for the Marble Mountain (proposed Marble Mountain North and South) Roosevelt elk hunt.	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant
Modify tag ranges and season dates for Northeastern Rocky Mountain elk hunts	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant
Modify Fort Hunter Liggett tule elk hunt boundaries - Change name to Fort Hunter Liggett Central Coast	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant
Modify season tag ranges and season dates for Fort Hunter Liggett tule elk hunts.	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant
Modify Grizzly Island tule elk hunt boundaries	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant

Modify tag ranges and season dates for Grizzly Island tule elk hunts.	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant
Modify La Panza tule elk zone boundaries	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant
Modify tag ranges for La Panza tule elk hunts.	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant
Modify tag ranges and season dates for Lake Pillsbury tule elk hunt.	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant
Modify San Luis Reservoir tule elk hunt tag ranges and season dates	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant
Modify Bear Valley tule elk hunt tag ranges	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant
Modify Santa Clara tule elk tag ranges	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant
Modify Alameda tule elk tag ranges	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant
Modify season dates for the Multi-zone fund raising elk tag	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant
Modify Siskiyou tag ranges and season dates	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant
SHARE Elk	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant

	Impacts of Hunting Elk				
	Growth-Inducing impacts	**Short-term uses and long term productivity**	**Significant irreversible environmental changes**	**Welfare of Individual animal**	**Cumulative Impacts**
Establish new San Emigdio Mountain tule elk hunt	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant
Establish new Camp Roberts tule elk hunt	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant
Split Mendocino tule elk hunt - establish 5 zones	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant
Split Independence tule elk hunt- establish Goodale tule elk hunt	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant
Split Northwestern Roosevelt elk hunt - establish Del Norte and Humboldt County Roosevelt elk hunts	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant
Modify tag ranges and season dates for Northwestern (Proposed Del Norte and Humboldt) Roosevelt elk hunt	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant
Split Marble Mountain Roosevelt elk hunt - establish Marble Mountain South and Marble Mountain North Roosevelt elk hunts.	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant
Modify tag ranges and season dates for the Marble Mountain (proposed Marble Mountain North and South) Roosevelt elk hunt.	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant
Modify tag ranges and season dates for Northeastern Rocky Mountain elk hunts	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant
Modify Fort Hunter Liggett tule elk hunt boundaries - Change name to Fort Hunter Liggett Central Coast	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant
Modify season tag ranges and season dates for Fort Hunter Liggett tule elk hunts.	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant
Modify Grizzly Island tule elk hunt boundaries	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant
Modify tag ranges and season dates for Grizzly Island tule elk hunts.	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant
Modify La Panza tule elk zone boundaries	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant
Modify tag ranges for La Panza tule elk hunts.	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant
Modify tag ranges and season dates for Lake Pillsbury tule elk hunt.	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant
Modify San Luis Reservoir tule elk hunt tag ranges and season dates	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant
Modify Bear Valley tule elk hunt tag ranges	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant
Modify Santa Clara tule elk tag ranges	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant
Modify Alameda tule elk tag ranges	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant
Modify season dates for the Multi-zone fund raising elk tag	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant
Modify Siskiyou tag ranges and season dates	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant
SHARE Elk	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant

From:	Phoebe
To:	FGC
Subject:	Hearing Dec. 9 and 10, 2015: Public forum comment regarding Roosevelt elk
Date:	Sunday, November 08, 2015 2:55:25 PM

To: Fish and Game Commission at fgc@fgc.ca.gov

From: Phoebe Lenhart

Date: Nov. 8, 2015

Regarding: Hearing Dec. 9 and 10, 2015: Public forum comment reference to Roosevelt elk

This E-mail is sent for your consideration as I am unable to attend the meeting next month in San Diego, CA.

I understand that Joe Hobbs, CA Department of Fish and Wildlife (DFW), is planning to recommend to the fgc an increase in the number of hunting tags for Roosevelt elk.

I have spent over one year extensively studying the Roosevelt elk in Del Norte County and consider myself an authority on the Roosevelt elk here. I have monitored closely three herds in the county that I refer to as: Endert's Beach herd, Lake Earl herd, and Smith River herd. Each of these herds has @ 50 elk in them.

I am opposed to any increase in hunting of the Roosevelt elk based upon my research. The DFW admits that they do not have an accurate count of Roosevelt elk in Del Norte County. The DFW also admits that they do not know how many herds exist, nor the composition of the herds.

The Roosevelt elk became almost extinct in 1925 when tens of thousands of elk where killed to a remnant of 15 elk. Now, 90 years later, the DFW still does not know about the Roosevelt elk in Del Norte County, yet, irresponsibly wants to increase the number of hunting tags.

The DFW is citing an environmental report dated April, 2010 to justify killing more elk under the SHARE program, particularly on Green Diamond properties. I sincerely question the appropriateness of DFW using this report under today's circumstances. I would like proof that the Roosevelt elk are damaging the forests owned by Green Diamond.

[redacted]

From: [redacted]
To: FGC; Hobbs, Joe@Wildlife; Callas, Richard@Wildlife; Loft, Eric@Wildlife
Subject: Roosevelt Elk
Date: Saturday, November 14, 2015 4:25:02 PM

As a photographer of wildlife in Crescent City, California, I am often touched by the beauty and grace of the Roosevelt Elk. The elk should be protected, but they should not be allowed to damage people's property. I think must be away to achieve both these goals, short of killing these striking animals.

Aimee Bolender
[redacted]

Sent via electronic mail

November 15, 2015

President Jack Baylis
Vice President Jim Kellogg
Commissioner Jacque Hostler-Carmesin
Commissioner Eric Sklar
Commissioner Anthony Williams
Director Sonke Mastrup

California Fish and Game Commission ("the Commission")
1416 Ninth Street, Room 1320
Sacramento, CA 95814
Fax: (916) 653-5040
fgc@fgc.ca.gov

Re: Elk Hunting Regulations – December 9-10, 2015 Commission Meeting in San Diego

Dear Commissioners Baylis, Kellogg, Hostler-Carmesin, Sklar and Williams and Director Mastrup:

On behalf of the Center for Biological Diversity ("the Center") and its over 100,000 members and supporters in California, we submit to the Commission the attached scoping comments on potential impacts resulting from the implementation of elk hunting regulations. We submitted these comments to the Department of Fish and Wildlife in August 2015 and are re-submitting them here to ensure their consideration at the December 9-10, 2015 Commission meeting in San Diego.

Thank you for your consideration of these comments. If you have any questions, please feel free to contact me directly.

Sincerely,

Jean Su
Staff Attorney
Center for Biological Diversity
1212 Broadway Street, Suite 800
Oakland, California 94612
Phone: (510) 844-7139
jsu@biologicaldiversity.org

Exhibit A

[*See attached*.]

August 26, 2015

Sent via Email

Attn: Joe Hobbs
California Department of Fish and Wildlife
1812 9th Street
Sacramento, CA 95811

Re: Scoping on Implementation of Elk Hunting Regulations

Dear Mr. Hobbs:

On behalf of the Center for Biological Diversity, I submit these scoping comments on potential impacts resulting from the implementation of elk hunting regulations. The Center is a national, nonprofit organization with over 900,000 members and online activists whose mission is to protect and restore rare animals and their habitats through science, policy, education, advocacy, and environmental law. The Center is concerned about how implementation of the elk hunting regulations will affect elk recovery in California.

We understand that the Department of Fish and Wildlife is proposing to adjust tag quotas on existing elk hunts, establish new hunt zones, modify season dates and existing hunt boundaries, and add additional hunts within existing zones. We ask that the Department address the following issues in the draft environmental document.

To begin, we are concerned about the Department's failure to first finalize a statewide elk management plan, as the statute has long required. Section 3952 of the Fish and Game Code provides:

> The department shall develop a statewide elk management plan, consistent with the state's wildlife policy as set forth in Section 1801. The statewide elk management plan shall emphasize maintaining sufficient elk populations in perpetuity, while considering all of the following:
>
> (a) Characteristics and geographic range of each elk subspecies within the state, including Roosevelt elk, Rocky Mountain elk, and tule elk.
> (b) Habitat conditions and trends within the state.
> (c) Major factors affecting elk within the state, including, but not limited to, conflicts with other land uses.
> (d) Management activities necessary to achieve the goals of the plan and to alleviate property damage.
> (e) Identification of high priority areas for elk management.

(f) Methods for determining population viability and the minimum population level needed to sustain local herds.
(g) Description of the necessary contents for individual herd management plans prepared for high priority areas.

A statewide elk management plan would inform the Department's elk hunting regulations. For example, the required management plan must consider "population viability and the minimum population level needed to sustain local herds." Such information is necessary before making any upward adjustment in existing elk quotas or opening up new areas to elk hunting.

Moreover, Section 3951 of the California Fish and Game Code provides that any hunting of tule elk must be "in accordance with the statewide elk management plan developed pursuant to Section 3952." Without such a management plan, the Department should not be authorizing the killing of these rare elk. Although much progress toward recovery has been made in the last 50 years, the statewide tule elk population is still just a fraction of its historical numbers. Indeed, scientists estimate that approximately half a million tule elk once roamed California, while today the Department in 2007 estimated the population at approximately 3800 elk in 21 herds.[1] Furthermore, the population has likely declined since then because of the drought; this past year 250 tule elk perished in just one herd at Point Reyes National Seashore.

We are concerned that the Department is moving forward with increased hunting of small elk herds without adequate information on population status and trends. The 2015 Final Elk Quota[2] allocates tags for more than 350 elk, too often from herds with small numbers, and even for some small herds with demonstrated declining populations. In its environmental analysis, the Department should explain how it determined the quota for each herd and document whether such level of hunting is consistent with the state's goal of "maintaining sufficient elk populations in perpetuity."

It is our understanding that (during seasons open to targeting of bulls) hunters usually seek the largest elk they can shoot, preferably one of the large "primary bulls," which are responsible for most of the breeding. The Department needs to consider the impact of shooting the largest elk on population dynamics and whether each herd has adequate numbers to support the annual killing of primary bulls.

California's elk face many threats, particularly habitat loss, extended drought, and impacts from being hemmed in by urban development. Without sound and clearly-defined management policies, cumulative impacts from hunting could impede elk recovery or even cause permanent declines in the population. As such, we ask that the Department consider closing certain existing elk hunting areas based on the following considerations: promoting elk recovery, providing opportunities for non-consumptive wildlife uses such as photography and wildlife watching, and mitigating for impacts from California's severe drought.

---

[1] http://www.dfg.ca.gov/wildlife/hunting/elk/tule/about/distribution.html
[2] https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=95629&inline

California's elk must be considered a public resource for everyone to enjoy, not just hunters. We ask that the Department not make any increases to the number of elk that can be killed until elk population numbers can be thoroughly analyzed in conjunction with a statewide elk management plan. Our concern here is with recovering elk in California through sound wildlife management driven by science.

Sincerely,

Collette Adkins, Senior Attorney
8640 Coral Sea Street Northeast
Minneapolis, MN 55449
651-955-3821
cadkins@biologicaldiversity.org

Friends of Del Norte

Conserving our Natural Heritage Since 1973

Protecting the Wildlands, Waters and Wildlife of Del Norte County

P.O. Box 229 Gasquet, CA 95543 707 954-1634 707 465-8904

November 18, 2015

Transmitted by Eileen Cooper, Vice President by email to fgc@fgc.ca.gov and intended for Fish and Game Commission meeting Dec. 9-10, 2015

California Fish and Game Commission
P.O. Box 944209
Sacramento, CA 94244-2090

Dear Esteemed Commissioners:

Re: Proposed Continuance/ Increase in Tags to be Issued in 2016 for Shooting of Roosevelt Elk in Del Norte County and northern Humboldt lands

Commissioners, we welcome this opportunity to start engaging with your process, which we expect to be thoughtful and thorough. Thank you for that, and for many other decisions made by your Commission during the past year.

The Friends of Del Norte is the only Del Norte non-profit citizen environmental organization dedicated to the long-term protection and enhancement of all natural resources of Del Norte County, and the surrounding bioregion. We have continued to speak out for wildlife and on other issues for more than four decades.

We regret that Del Norte citizens did not hear about the scoping comments deadline back in August, for this matter before you Dec. 9 & 10th, as it was not noticed in our one local newspaper or on the CEQAnet website. We have since learned that DFW staff were emailing about the August deadline/issues with the county Board of Supervisors, and that local ranchers were informed.

One of our board members is Theodore Souza, who has been "buying hunting and fishing licenses in California since 1946." He is not on the internet (although as stated we did not find this matter on there), and Mr. Souza "wants to know how tax payers like him are supposed to receive notification."[1] He is an avid deer hunter, and notes with some humor that what is happening here is not elk hunting, but simply "elk *shooting*." Tangentially, Souza served in the U.S. Army during World War II, and was recently inducted into the French Legion of Honor for risking his life to liberate a Nazi-occupied France.

[1] Personal communication, Ted Souza, October 22, 2015.

A) **Background: Recent Recovery and Re-emergence of Roosevelt Elk Herds in Del Norte county.**

First, we would like you to understand that many Del Norte residents are thrilled to see these majestic animals in our midst again, being aware that we nearly lost this species about 100 years ago. Indeed it is only in recent years that Del Norte has enjoyed ANY elk viewing opportunities, only as elk numbers have grown, because previously we could only see them in the vicinity of Prairie Creek State Park while traveling through northern Humboldt County, where their earliest recovery was focused. As you might know, there is a popular spot near the Little Red Schoolhouse near Stone Lagoon where tourists are almost invariably pulled over and photographing the elk. However, back up farther north in Del Norte, tourism is also a critical and rapidly growing part of our economy. Redwood National & State Parks estimates that we draw more than 1 million visitors annually, with more than a 20% jump in this nature tourism in the last three years.[2] (Contrast this to a resident population of less than 30,000 people in this county.) Some indefinable but quite real percentage of these growing visitation numbers has to do with the growing elk herds.

Visitors love majestic large wild animals, as do we. Indeed elk are among the most "viewable" wildlife, unlike for example birds, as in this region of many state and national parks elk appear trustingly unafraid of humans and are often easily approached. Recently a visitor from Washington state took the time to write a letter to our local paper, chiding the Board of Supervisors: "We hope your board members will reconsider their plan to reduce the size of what appears to me as a very small herd of elk. So few areas have elk that are so accessible to the visitors."[3]

Later in September, faced with a large photo of a slaughtered bloody bull elk on the front page of the paper, a local person wrote: "I saw this bull and his harem a few days ago crossing from Endert's Beach to a meadow and pulled over to the side of the road to watch them. I was awed by their presence — so graceful and beautiful. Now, this bull will be packed away as meat in the hunter's freezer and I will never see him again. ... The killing of this bull has ended the passing on of successful genes forever — a loss that can never be replaced. Forever is permanent."[4]

Finally, it is only within the last 3-4 years that Roosevelt elk have returned to the 11,000 acres of coastal Tolowa Dunes State Park and the State Lake Earl Wildlife Area, in Del Norte county. These almost entirely intact and contiguous public lands front the ocean, and provide abundant forest, meadows, dune ponds and the West's largest estuarine coastal lagoon, Lake Earl, with its adjacent wetlands. Local people have witnessed the return of elk, and signs of almost continually roaming herds, throughout this large territory, as well as the birth of young elk on these lands for the first time in about 100 years. Clearly the elk are regularly using this habitat, as they do the coastal Redwood Parks lands, and ranging from its southern to northern extent.[5] Indeed the Elk are beneficial to Tolowa Dunes State Park and the State Wildlife Area in maintaining open grasslands, and early successional habitat that benefits many endangered plants and animals, for example early blue violets (Viola adunca) for the federally listed Threatened Oregon silverspot butterfly. At present State Parks and DFW have no plans or funds for general vegetation management, and so having a growing elk presence on those lands would be particularly helpful.

[2] Pers. communication, Michael Glore, Supervisory Ranger, Redwood National & State Parks, Nov. 18, 2015.
[3] See Appendix A) at end of these comments.
[4] See Appendix B)
[5] Pers. communication, Sandra Jerabek, Tolowa Dunes Stewards, Nov. 10, 2015. Also referenced Jeff Bomke, State Parks Regional Manager, Amber Transou, and other staff sightings, Eureka, California.

B) **The Board Should Consider Local Challenges of our Specific Topography and Geography**

One of the problems that elk herds in Del Norte county face is that the extensive ranch lands lie on, and human populations are concentrated on, the county's relatively flat coastal plain. (Undoubtedly flat, as well as full of tempting pasture, because the land was filled and flattened by humans.) So for the elk to travel between hospitable public lands lying on the coast and over to sheltering, extensive upland forest public lands, the elk must travel "the gauntlet" of private lands. Indeed during hunting season this was the specific challenge faced by the bull elk mourned in the letter just cited, and the opportunity for his demise.

C) **Request for Actions.**

First of all, we are concerned about the Department's failure to finalize a statewide elk management plan. A statewide elk management plan should be the first step taken, and would inform the Department's elk hunting regulations. Yet DFW states that they are prioritizing staff time for the 2016 elk hunting regulations over completion of the management plan. They state that the management plan is moving forward on a separate track.

We respectfully request that you consider our views, and taking adopting/directing the following at your December 2015 meeting:

- Before elk hunting continues or increases, we first need the management plan.
- Before any specific plans or regulations are developed, we also need population counts, data, and analysis. The goal of data gathering should be the sustainability and strong genetic health of these herds. Specifically the State should survey: how many elk are in Del Norte and northern Humboldt county herds; how many herds; the distribution of bulls, cows and calves in the herds; total numbers; what corridors elk are already using to travel from coastal public land to upland forested public land, and genetics of herds. The State should explain in a transparent fashion what numbers are considered sustainable, how they arrive at those numbers, i.e. exactly how the State calculates an assessment of "sustainability" and strong "genetic viability."
- We are opposed to the Trophy hunting that is the current focus. Taking the largest bull elk with the biggest trophy rack is taking the best genetic material from the herd. These elk were almost extinguished by hunting 100 years ago, and the herds we see today have recovered from only a few individuals with limited genetic material. What is the current genetic status of these herds?
- As an alternative to trophy hunting of the biggest male elk leading their herds, the State should consider instead shooting of females and some younger males. Perhaps the biggest bull harem leader could be tagged for no take.
- As an alternative to hunting, elk might be hazed onto public lands and into wildlife corridors (see comment below about studying and establishing such corridors).
- Another alternative could be to provide grant money to smaller ranch/food growing operations to construct elk proof fencing. A small operation such as The Dutch Gardener, where reportedly the bull elk mourned in the Letter to the Editor was shot, is immediately adjacent to upland forested Redwood National & State Park lands, might solve their conflicts with such fencing. We cannot

blame the elk for not knowing about the boundary, and The Dutch Gardener greenhouses and beds lie right in the path of elk migrating down to coastal *public* lands and beach.

- As an alternative to hunting any elk on the coast, the State should consider moving some elk inland to the extensive Smith River National Recreation Area (SRNRA) habitat. While more than 80% of Del Norte County is public land (hence the critical importance of growth in tourism), most of that public land is actually on *national* lands in the NRA – where the elk don't seem to be. Nor do the elk have many safe ways to travel from the coast, where the conflicts are, over to those national lands. If someday elk herds were re-established on the NRA, where currently deer are hunted, that might lead to additional viewing as well as hunting opportunities. The Elk would also be beneficial to controlling understory that contributes to vulnerability to large forest fires.
- As elk viewing is part of our rapidly growing Tourism economy, we believe that the State agencies should work together to establish safe Elk Viewing Areas for visitors and locals alike.
- In particular, just before Highway 101 enters Crescent City from the south, there are often elk viewing opportunities on private lands near the intersection where 101 intersects with Humboldt and Enderts Beach roads. This might be one good place to consider establishing a safe elk viewing area, with safe pull outs for cars – as the cars are stopping on the narrow edge of the road anyway. Elk have been killed by cars here recently; it is only a matter of time before people are injured. We continue to advocate as well for constructing a safe wildlife crossing in this same area, where elk must cross from the Parks through open private meadows and across Highway 101, to reach coastal Park lands where they have long-established use.
- State should study, propose and enforce wildlife corridors so that the elk can move safely between their public grazing lands on the coast to public forests inland. Currently elk are being killed on the private ranch/farm land that lies in between the public lands. Elk appear to move from coastal Tolowa Dunes State Park/Lake Earl Wildlife Area and Redwood National & State Parks to upland, inland forest in the Redwood Parks.
- Wildlife corridors are also needed for interaction between herds, within the entire region including northern Humboldt county, to build and strengthen diversity in the gene pool.

D) <u>Concern about Lack of Funding for California Department of Fish & Wildlife (DFW).</u>

We are deeply concerned about the diminishing funding and attention for this critical agency. For example, our County once had an on-site DFW Lake Earl Wildlife Area manager, and now that manager is located two hours south in Humboldt County, and overseen by staff many more hours away in the Redding/Yreka corridor. We continue to hear about new staff cuts in this region. Moreover with so few wardens, DFW will never be able to enforce any elk hunting regulations in a daunting patchwork of private and public lands.

It seems to us that inadvertently a value is being established for a bull elk, and that it is a one-sided value. What about the value to the community of those same elk, such as tourism dollars and local quality of life? The value being established requires that an elk dies, whereas the value of a live bull elk over its lifetime may be far greater. We also question what the rationale is for allowing ranchers to sell elk tags for whatever price they wish and potentially profit, if that is indeed happening, from the sale of elk tags – when DFW is going broke. This seems backwards to us. We have heard the local rumors that ranchers have sold off their elk tags for varying amounts up to $5,000 each, and possibly more. We have no way of knowing what the truth of this is without a public accounting of these programs, and we ask you to:

- Give the public a full, transparent accounting of how public trust wildlife (the elk) are being used to generate income for private businesses, and the value to the public of benefits ranchers are providing in exchange.
- Re-consider at least your elk hunting programs, when and if these are resumed, and through any other avenues available to you, to better fund this troubled agency DFW with critical regulatory, enforcement and land management responsibilities.
- Consider setting aside funding from the sale of elk tags for the construction of safe elk viewing areas, and other options.

We plan to stay engaged in this process. Thank you so much for considering our input.

Sincerely,

Don Gillespie

Don Gillespie
President
Friends of Del Norte

cc:
Governor Brown
Resources Secretary John Laird
California State Senator Mike McGuire
California State Assembly Member Jim Wood
Joe Hobbs; Eric Loft; Richard Callas, California Department of Fish & Wildlife (DFW)

Appendices:

A) from Del Norte Triplicate Letters to the Editor Sept. 1, 2015 *(emphasis ours)*

Dear Editor:

My wife and I recently visited Del Norte County. Along with the beautiful coastline and redwood trees, we especially enjoyed the opportunity to see a herd of elk from Highway 101 in an area near the town of Smith River.

We were able to get close enough to take pictures, something we have never been able to do before.

I was astonished to read an article in your newspaper that your Board of Supervisors is asking for more tags to allow an increase in the number of elk to be hunted. One of the reasons we drive along the coast is to be able to enjoy the wildlife and ocean views in your area when we travel. I believe that other tourists may also choose your area for the same reason.

We hope your board members will reconsider their plan to reduce the size of what appears to me as a very small herd of elk. So few areas have elk that are so accessible to the visitors.

Web Weber, Pe Ell, Washington

B) from Del Norte Triplicate Letters to the Editor Sept. 12, 2015 *(emphasis ours)*

Magnificent bull's death a blow to herd, humans

I am shocked and broken hearted regarding the news that this bull elk was killed by a hunter. This is not news that I am celebrating, rather I am grieving over the tragic death of this magnificent bull.

I saw this bull and his harem a few days ago crossing from Endert's Beach to a meadow and pulled over to the side of the road to watch them. I was awed by their presence — so graceful and beautiful. Now, this bull will be packed away as meat in the hunter's freezer and I will never see him again.

This herd, from which this bull was killed, is a very small herd of about 50 elk. This bull, no doubt, was a prime breeder who passed on the fittest genes to the next generations of elk. That would ensure the elk's survival in an era becoming more challenging as the elk's needs are infringed upon by people.

The killing of this bull has ended the passing on of successful genes forever — a loss that can never be replaced. Forever is permanent.

According to the latest weather predictions, the rain that we are hoping for this winter will not materialize; the front is weakening. That means California will be in the fifth year of a drought.

Elk need good nutrition for rutting and calving. This approaching year will bring more stress to the already dry vegetation and that means more difficult survival for the elk. The elk are innocent and are suffering do to human's adverse impact on the environment. I'd like to suggest to those who are fortunate to be property owners to consider supporting wildlife, not collaborating to kill it.

As a nature lover, I have rights, too. I have the right to enjoy the Roosevelt elk wandering in my neighborhood.

Phoebe Lenhart, Crescent City

From: [redacted]
To: FGC
Date: Tuesday, November 24, 2015 11:42:57 AM

Attention California Fish and Game Commissioners

These comments are being submitted after several meetings and conversations with our Resource Conservation District members, Lake Earl Grange members, Del Norte County Farm Bureau members and a great number of other private property owners who are aware or have experienced the Roosevelt Elk and their conflict with our citizens. This last year we presented a letter of request to our County Board of Supervisors asking for their help and support in addressing the Roosevelt Elk problems in our County. Additionally, a petition was presented with several hundred signatures of our local citizens requesting their help to work with the California Fish and Wildlife to find a solution for Elk Damages and threats to our public health and safety.

These comments are made with the fact in mind that DEPREDATION PERMITS are next to impossible to obtain for major elk damages to our property. Elk damages have been carefully documented over the past few years---and damages the past 2 years have rapidly increased due to the explosion of the elk population.

We ARE NOT able to protect our health and safety, our livestock, crops, fences, gardens, orchards or any other aspects of our private property from these DISPLACED elk. We have had the local County sheriff and the California Highway Patrol involved on many occasions.

1. Public Health and Safety

*the California Highway Patrol has completed a document on elk vs vehicles in Del Norte Co. The elk have become a highway HAZARD. Just this last week 2 Elk were hit and killed on HWY 101.

*CHILDREN AT THE BUS STOPS through out the Bertch area and Elk Valley are within a few feet of bull elk and cows with their calves throughout the year.

2. HEARD HEALTH

*Absolutely NO TESTING FOR diseases has taken place regarding the elk population in Del Norte County. This “lack of management” poses a constant threat for diseases to be spread to all domestic livestock. This is verified by a letter from Ben Gonzales (State Vet for Ca Fish and Wildlife). At this time, nearly all herds (dairy and beef) are subject to elk contact on a daily basis here in Del Norte County. We also have documented cases of bull Elk goring horses and
breaking the legs of beef cattle.

3. Examples of Direct Damages (documented by Dave Lancaster)

Destruction of the following: Small organic vegetable crops

Lilly crops
Nurseries
Orchards
Backyard gardens
Yard decorative plants
Septic mound systems
Lawn Sprinkler systems
Yard fences
Backyard pets
Severe damages to horses
Severe damages to livestock
Constant livestock STRESS

4. 80-90% of Del Norte County is in State or Federal ownership. Plus there are additional Tribal Land. There is very little PRIVATE PROPERTY left in our County yet we are supporting the bulk of the elk population on our private property.

* NO COOPERATION or engaged habitat planning with the US Forest Service, National Parks, California State Parks or the California Department of Fish and Wildlife is taking place for elk management. (this information was gained from recently conducted California Public Request Act requests and Federal Agency information requests)

AS A RESULT>>>>>>>We have DISPLACED elk searching for food with great intensity to keep from starving. Their quest for food places tremendous demand on ADJACENT PRIVATE PROPERTY. The elk are in constant conflict with ag enterprises and residential housing areas. (documented by Dave Lancaster).

Our local County government, Farm Bureau, Lake Earl Grange, Resource Conservation District and many private citizens have met with the California Department of Fish and Wildlife representatives and have concluded that a curb in population numbers is the only solution to our Elk problem.(Due to the fact that no State or Federal are actively addressing habitat to support the vast numbers we have.) Several property owners will be opening up their lands in an effort to implement the SHARE Program with extended hunting seasons.

We are in favor of increased tag numbers for both sexes of Roosevelt Elk in Del Norte County.

I would welcome any questions any of you may have. I can be contacted at

Sincerely,
Helen Ferguson
Chair
Lake Earl Grange #577 Environmental

Policy and Procedure Committee

Sent from Windows Mail