

## STAFF SUMMARY FOR FEBRUARY 8-9, 2017

**20. USE OF DOGS FOR PURSUIT AND TAKE OF MAMMALS****Today's Item**Information Action 

Adopt proposed regulation changes regarding use of dogs for pursuit and take of mammals.

**Summary of Previous/Future Actions**

- |                                   |                                    |
|-----------------------------------|------------------------------------|
| • Notice hearing                  | Oct 19-20, 2016; Eureka            |
| • Discussion hearing              | Dec 7-8, 2016; San Diego           |
| • <b>Today's adoption hearing</b> | <b>Feb 8-9, 2017; Rohnert Park</b> |
| • Further discussion (proposed)   | March 15, 2017; Teleconference     |
| • Adoption hearing (proposed)     | April 26-27, 2017; Van Nuys        |

**Background**

In Apr 2016, FGC adopted changes to Section 265, Title 14, California Code of Regulations, deleting language restricting the use of global positioning system (GPS) collars and treeing switches for dogs aiding a hunter; this amendment effectively authorized the use of those devices as an aid in hunting. Subsequently a lawsuit was filed challenging the adoption alleging California Environmental Quality Act (CEQA) process deficiencies; FGC has determined that further rulemaking may be necessary to resolve that lawsuit.

The current rulemaking and related CEQA analysis will help to further inform FGC about the issues related to regulating the use of dogs as an aid to hunting and associated equipment for those dogs. The proposed regulation inserts a provision prohibiting the use of treeing switches on dog collars when dogs are used as an aid in hunting and inserts a provision prohibiting the use of GPS-equipped dog collars when dogs are used as an aid in hunting; both provisions existed in the regulation prior to the Apr 2016 changes.

In Dec 2016, FGC discussion included a vote that directed staff to prepare a notice for further rulemaking to be considered by FGC immediately after and at the same meeting as any adoption of the currently proposed regulation, to consider authorizing GPS collars and treeing switches.

DFW staff is developing an analysis of the impacts of both allowing GPS collars and treeing switches and prohibiting the use of that gear; FGC will be able to rely on this analysis in not only informing the decision on the currently proposed regulation, but also the analysis could serve as the basis for required CEQA analysis for subsequent rulemaking. Based on this, FGC staff suggests continuing this rulemaking to include a discussion at the Mar 15 teleconference and adoption at the Apr 26-26 FGC meeting in Van Nuys. FGC could receive the DFW CEQA analysis in March and verify that it still intends to proceed with the current rulemaking. If so, CEQA compliance could be scheduled for adoption in Apr. A separate agenda item for notice of additional rulemaking would also be added to the Apr agenda based on the Dec directive.

## STAFF SUMMARY FOR FEBRUARY 8-9, 2017

**Significant Public Comments**

Support for the proposed regulation due to concerns over impacts to wildlife from dogs, based on allowing GPS collars (exhibits 2-4).

**Recommendation**

**FGC staff:** Continue the adoption decision until the Apr 26-27, 2017 FGC meeting in Van Nuys and schedule further discussion for the Mar 15, 2017 teleconference

**Exhibits**

1. ISOR, notice, and continuation  
notice: [http://www.fgc.ca.gov/regulations/2016/index.aspx#265\\_2](http://www.fgc.ca.gov/regulations/2016/index.aspx#265_2)
2. [Letter from Public Interest Coalition, received Jan 26, 2017](#)
3. [Letter from Protecting Earth & Animals with Compassion & Education, received Jan 25, 2017](#)
4. [Letter from Project Bobcat, received Jan 25, 2017](#)

**Motion/Direction**

Moved by \_\_\_\_\_ and seconded by \_\_\_\_\_ that the Commission continues the adoption of the regulation to the Apr 26-27, 2017 FGC meeting in Van Nuys and schedules further discussion at the Mar 15, 2017 teleconference.



# PUBLIC INTEREST COALITION



[sent via email: [fgc@fgc.ca.gov](mailto:fgc@fgc.ca.gov) ]

January 26, 2017

California Fish and Game Commission  
P.O. Box 944209  
Sacramento, CA 94244

Ladies and Gentlemen:

**RE: Feb 8 2017 Agenda Item 20--Adopt Proposed Reg Changes-Sec 265  
—Vote YES to Prohibit Use of GPS Collars for Mammal Hound Hunting**

We strongly support the California Fish and Game Commission’s (FGC) adoption of the current proposed regulation changes to Sec 265 to ban the use of GPS collars on dogs for hound hunting of mammals. The allowance of GPS collars on hounds to hunt mammals will exacerbate negative impacts well beyond the current impacts created via existing hound hunting, and the oft-stated “hound welfare” purpose, which created the GPS-collar-allowance amendment approval from last year, is incongruent and arbitrary—a non sequitur. We also urge the FGC to not proceed with a new Notice for another GPS collar amendment to reverse the ban.

To be clear, we are not advocating for a prohibition of all mammal hound hunting and training. That is a totally separate issue. Our position is that existing, hound hunting, with or without radio telemetry collars, creates significant negative impacts—a well-established “given” that is acknowledged and permitted, and that hound hunting activities are fraught with risks to the health and welfare of the dogs. Assuming there is full or partial agreement with the existence of impacts and hound welfare risks, part of our opposition to GPS collars on hounds is concerned with the additional significant, negative impacts to wildlife that GPS collars create and increased hound welfare risks when untrained dogs are released in the wild, which are not mitigated by GPS collars. Another focus of concern with the use of GPS collars is with diminishing fair chase ethics brought about when such high-tech dog hunting occurs and results in concurrent increased lack of engagement by hounders, who often remain in vehicles, watch a computerized display/screen, wait for hounds to indicate prey is cornered, treed, or worse, before attempting to meet up with them.

We submit that:

~because evidence supports significant-but-unavoidable negative impacts to wildlife associated with current hound hunting practices;<sup>1</sup> and

~because permitting GPS hound collars for dog-mammal hunting in California will greatly increase the numbers of trained and untrained dogs released into the wild; that

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<sup>1</sup> Selected excerpts and information from studies are condensed and summarized below; more supporting information may be found in Appendix A.

~therefore permitting GPS collars on hounds to hunt mammals and/or to train will create significant, unacceptable negative impacts.<sup>2</sup>

### I. Exacerbated Negative Impacts of GPS Collars on Hounds

It is reasonably foreseeable to conclude that the permitting of GPS collars on hounds to hunt mammals or to train dogs will increase hounding activities from current levels. Since hounding of deer is not allowed throughout most of the U.S., allowing GPS collars will be an invitation to hounders (especially those coming in from other states) to release untrained hounds with abandon to hunt, train, or just to “see what they’ll do.” With increased numbers of GPS-collared released hounds, the dynamics of hound hunting impacts changes from the currently allowed radio telemetry tracking devices via:

(1) increasing disturbances and lethal outcomes to both targeted and non-targeted wildlife (mauling, capture myopathy,<sup>3</sup> aborting and/or flight abandonment of young) especially with untrained dogs.

(2) allowing the ethically questionable transmittal of precise deer or other wildlife GPS coordinates locations for “drives” (deer-hound hunting drives have been cited as one of the primary reasons that deer-hound hunting is banned in the U.S. except for nine deep south states, Hawaii, and California);

(3) creating new avenues to “work around” poaching and/or hunting of animals that cannot legally be hound hunted in California (e.g., treeing bears or bobcats in “training” and communicating to bear or bobcat hunters the GPS locations).

(4) increasing disease transmission potential from dogs to vulnerable wildlife species.

(5) diminishing, if not abandoning, any semblance of “fair chase” as perceived by the non-consumptive public as well as by many current, non-hound deer hunters. The so-called “hunt” is being conducted by a dog(s), outfitted with an electronic device(s), for the convenience of the hounder or handler often riding comfortably in a vehicle, watching a digital display screen for signs that the dog(s) has/have cornered, treed, or trapped an animal, or are in pursuit to the same end.

In addition to the obvious negative impacts of hounding to targeted and non-targeted animals, there are other just as significant but more subtle impacts, such as: changing migratory patterns of wildlife; abandonment of foraging areas which creates stress and risks of predator attacks by wildlife having to move into unknown, new areas; disruption of breeding and subsequent impacts to population numbers. There are both studies<sup>4</sup> and general agreement that hounds impact targeted and non-targeted wildlife and domestic pets. We submit that such additional less-obvious impacts will be increased if GPS collars are allowed in California.

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<sup>2</sup> California is the only state in the mainland U.S. that allows deer-hound hunting, other than nine deep South state. It is therefore reasonable and foreseeable that the permitting of GPS collars for deer hunting and training will be an incentive for hound hunters to hunt and train in California.

<sup>3</sup> <http://www..org/myopathy.php>

<sup>4</sup> “Effects of hunting with hounds on a non-target species living on the edge of a protected area,” Stephano Grignolio, et al, Italy March 2010. (See Attachment A, Excerpts from study)

Based on these facts, it logically follows that allowing GPS collars will create additional significant impacts because there is a very high likelihood of exponentially increased hounding activities. At the very least, there will most likely be greater releases of untrained dogs along with out-of-state hounders taking advantage of both CA deer-hound hunting and GPS collar allowances for deer drives.<sup>5</sup>

## II. Hound/ Welfare: Hound Hunt Dangers and Increased Risk with GPS Collars

The first proposal to amend Sec 265 to allow GPS collars for mammal hunting and training in late 2015 emphasized “hound or dog welfare” as the driving factor. Both the FGC and the CA Dept of Fish and Wildlife’s (CDFW) mission statements’ focus on “fish and wildlife.” To venture into domestic animal welfare issues (as admirable as that may be), at the very least should be based on sound research.

Hounding activities are fraught with harmful, injurious, and lethal risks to the dogs, and these risks are neither remedied by, nor have any nexus to, wearing GPS collars. When any dog is miles from its handler (collar manufacturers claim signals can reach 10 or more miles), there is risk of (1) lethal or injurious altercations with other wildlife or domestic animals; (2) unwelcome trespasses on private property with owners’ rights to shoot; (3) vehicle collisions when crossing roadways; (4) injuries via terrain obstacles or hindrances, whether in pursuit or not, etc. Contrary to claims by hounders, there is no physical way a timely intervention can occur even when the hound(s) is/are even 3-4 miles or more out, especially in rugged terrain. When seconds count, and handlers are miles away, the claim that GPS collars will allow for immediate intervention is highly unlikely—it’s simply not possible. Knowing the GPS coordinates is a far cry from having the capacity to be on the scene in seconds. Thus the “hound dog welfare” premise, upon which the GPS hound collar original amendment was predicated, is irrelevant and invalid.

True hound welfare concerns need to focus on required certifications—solid training (both scent and obedience), veterinarian health and fitness clearances, micro-chipping, etc.—before they are ever released in the wild.

Because of the potential increased significant, negative impacts that GPS collars will impose on targeted and non-targeted animals, we urge (1) a “yes” vote to adopt the Sec 265 proposal to re-impose the ban on the use of GPS collars for hound mammal hunting; and (2) no new Notice or re-noticing of any further amendment to Section 265, unless it is to also prohibit GPS collars for “hound training activities.”

Thank you for considering our views,



Marilyn Jasper, Chair

Enclosures: Attachment A

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<sup>5</sup> This prognostication is based on the fact that deer hounding is banned in all but nine southern states and CA on the mainland—thus CA will be a GPS hound collar “destination” for deer hounding and training.

## Attachment A

Excerpts from: “*Effects of hunting with hounds on a non-target species living on the edge of a protected area*,” Stephano Grignolio, et al, Italy March 2010. [Bold added]

Abstract, pg 1: “...Here we analyze how hunting affected the spatial behaviour of 62 radio collared roe deer (*Capreolus capreolus*) in a protected area adjacent to areas where hunting with hounds (target species: wild boar and hares) and stalking with rifles from high seats without dogs (target species: roe deer) were permitted during the hunting season. Our results showed that hunting caused a significant increase in the home range size of monitored deer, as well as a “reserve effect”, whereby roe deer used the protected area as a refuge from hunters. **These behavioural responses were significant only at times when hunting with hounds was conducted, even though roe deer was not the target species of this technique.** Reactions to the perceived risk of predation varied among age and sex classes, with yearling being more sensitive and using the protected area more than adults. **As shown in our study, hunting harassment provoked by drives with hounds significantly affects the behaviour of non-target species.** Therefore, the use of long-legged hounds represents a variable that should be carefully evaluated by wildlife managers in their management plans and conservation policies, especially when endangered or vulnerable species are present.

Results, pg 5: “.... The model averaging (Table 2, bottom panel) [on website] clearly showed how roe deer home range sizes were strongly affected by hunting, the hunting factor accounting for the highest value of Akaike weights. Home range sizes inside OAC were smaller than those outside: the difference was minimal when roe deer stalking occurred, **and larger when hunting with hounds was permitted. Hunting with hounds increased the gap in roe deer home range sizes between inside and outside OAC**

Discussion, pg 6: “...Our first prediction proved correct in that hunting was found to cause a significant increase in the home range size of monitored deer and also provoked a ‘reserve effect’, with roe deer using the protected area (OAC) as a refuge. **These behavioural responses were significant only when hunting with hounds was conducted – thus confirming our second prediction – even though the roe deer was not the target species of this hunting technique.** Finally, our third prediction was only partially confirmed, since only yearling deer (but not adult females, as expected) showed a higher use of OAC than adult males. **To the best of our knowledge, no previous research investigated the effects of hunting techniques and focused on the effects of hunting with hounds on non-target species. In our case study, drives with long-legged hounds modified roe deer spatial behaviour. In particular, roe deer significantly increased their home range sizes outside OAC and found refuge inside OAC. The presence of numerous hounds outside OAC likely provoked fright, flight, and movement towards the inner areas of OAC. During wild boar and hare hunting (i.e. hunting with hounds), the average size of an outside OAC home range was five times as much as home range size inside OAC.**

“.... On the contrary, **hunting drives with hounds could last for a whole day.** While ungulates may suffer no substantial fitness costs when disturbance rates are either low or moderate, **several empirical studies suggested that high disturbance rates**

**could reduce their reproductive success and possibly impact on population dynamics** (Harrington and Veitch, 1992; Phillips and Alldredge, 2002; Yarmoloy et al., 1988). Bateson and Bradshaw (1997) showed that, by virtue of their evolutionary or individual history, **red deer are not well adapted to cope with the level of activity imposed on them when hunted with dogs. Long hunts, with their physiological effects on deer (disruption of muscle tissue, depletion of carbohydrate resources, high levels of b-endorphin and cortisol) can also indirectly modify their survival rates and life history** (Bateson and Bradshaw (1997).

“... Furthermore, **given that hunting with hounds is perceived by both target and non-target prey species, the consequences of the use of long-legged hounds should be carefully evaluated by wildlife managers, especially when endangered or vulnerable species are also present in the hunting area.** It is a fact that some European countries limit the use of long-legged hounds to specific seasons (Apollonio et al., 2010).

“**It is crucial to note that OAC was located on the main ridge of a mountain, and roe deer were forced by hunting with hounds to use this area as a refuge during the autumn–winter period. Thus, deer were obliged to use elevated areas exactly when the probability of finding snow cover was higher. As a consequence, the presence of hounds forced roe deer to concentrate in the small protected area, where the climatic conditions were more adverse and the habitat types unsuitable.** Such a behaviour is obviously contrary to common expectations (Mysterud, 1999). In autumn and winter we would expect roe deer to reach the bottom of valleys, thus avoiding low temperatures and snow cover:.

.... Uphill movements may have an important energy cost, especially when carried out during an adverse season. Moreover, the use of sub-optimal habitats together with the concentration of deer may strongly affect life histories and population dynamics (Kilgo et al., 1998; Kufeld et al., 1988; Swenson, 1982).

Pg 7: “...**Yearling roe deer showed a higher use of areas inside OAC. It can thus be argued that young deer were more sensitive to dog harassment because free-roaming dogs impacted upon ungulate dynamics mostly by preying on young individuals** (Gaillard et al., 1998; Manor and Saltz, 2003).

“...**Particularly, like any other kind of human harassment, hunting with hounds should only last for a brief period in order to reduce the indirect negative effects on both target and non-target species. Accordingly, we believe that managers should consider all the effects of hunting with hounds pointed out by our findings, including those on non-target prey species, especially when vulnerable species are present.**



**P**ROTECTING **E**ARTH & **A**NIMALS **W**ITH **C**OMPASSION & **E**DUICATION

P.O. Box 846 • Newcastle, CA 95658 • pea-ce@live.com

January 24, 2017

CA Fish and Game Commission  
1416 Ninth Street  
P.O. Box 944209  
Sacramento, CA 94244-2090

Subject: **BAN GPS Collars for Hound-Mammal Hunting and Training**  
"Use of Dogs for Pursuit/Take of Mammals or for Dog Training"

Please vote "yes" to amend Sec 265 to reverse the previously approved GPS hound collar amendment and bring back long-standing ban of GPS collars for hound-mammal hunting.

Allowing GPS collars and tip/tree switches for mammal-hound hunting creates most egregious increases in wildlife assaults—not just because of the well-known and scientifically established negative wildlife impacts that comes with all hound hunting and dog intrusions in wildlife habitat, but also because allowing GPS collars would increase the sheer number of hounds released—including those with absolutely no training whatsoever. Negative impacts to wildlife associated with hounds or dogs are increased with increased hounding, which will occur with the allowance of GPS collars. Such impacts include, but are not limited to: mauling, injuring/maiming of panicked wildlife who often abandon young in their fear flights, which makes them vulnerable to predation; altering migration patterns; forcing range and foraging disruptions into even more unknown dangerous areas; and so much more.

In early 2016, houndsmen/women created a smokescreen to convince FGC commissioners that GPS collars are an animal welfare issue. However, anyone who cares about their dogs' welfare would never release them in wildlife habitat unless they are fully trained in the first place. Otherwise, the "cared" for dogs would be kept on leads or tethers, or at a minimum, the houndsmen/women would stay in range and physically keep up with their dogs.

GPS collared hounds are often released while the owner/handlers follow the coordinates from inside the truck. This is not ethical hunting by any stretch of the imagination, but it reinforces how little care is given to these dogs. But hound welfare is not the purview of the FGC—only wildlife welfare should be.

Most all hounds will cross scent, harass non-targeted animals, tree illegal wildlife, etc. With radio telemetry, responsible houndsmen/women will keep up with their dogs that are trained BEFORE they're released. They will keep them in recallable range, or keep untrained dogs on leads. Thus, the impacts are greatly reduced. This is NOT at all the case with GPS collars—there is no incentive to train before hound are let loose in wildlife habitat.

Please refer to previous arguments submitted to oppose GPS collars in our letters of January 25, 2016 and March 31, 2016, and in others' submitted

comments. We also submitted a petition, "STOP GPS Hound Hunting of Deer in California," signed by over 29,200 individuals (83% Californians) who oppose the proposed amendment to CCR Section 265. To read the petition and update narratives, visit: <https://www.change.org/p/california-fish-and-game-commission-stop-gps-hound-hunting-of-deer-in-california>. Staff noted that the petition signatures submitted in March were fewer than the 29,200 number stated. That is because the petition was sorted to submit only signers from California. The current number of signers is now at 29,676, even tho no other signature efforts have been made.

Wildlife welfare advocates, many hunters, and the informed general public are opposed to hound hunting in general and GPS collars specifically. The vast majority of the public does not know, and is outraged when they learn, that mammal hound hunting is even allowed. They are shocked at the abandonment of any semblance of a commitment to fair chase and ethical hunting.

GPS collars are antithetical to ethical hunting and will not resolve any of the negative impacts caused by hound hunting which have been described in comment letters submitted to the FGC. When hounds are "out of control," ignoring commands, ranging for miles, cross scenting, trespassing, disrupting sensitive wildlife, along with the multitude of other problems they create, these impacts are indicative of the REAL problem: Unskilled houndsmen.

Only mandatory, professional training and certificates of accomplishment with annual renewals (i.e., continuing education) as prerequisites for hound hunting will address hounding problems. Permitting GPS collars will intensify the damage they create. If hound hunting or training is allowed at all, only leashed or tethered hounds should be allowed--no GPS collars.

Last, we deeply respect the commissioners and the caliber of their work. However, any "announced" visit to a houndsmen/women's operation, or a pheasant farm/hunt club, or any other such facility, will not provide a realistic understanding of the negative impacts that the entire industry creates for wildlife and habitat. Only in-depth studies can determine and assess the degree of impacts generated by freely released untrained dogs into wildlife habitat or rugged terrain.

We urge a firm "YES" vote to ban hound hunting with GPS collars.

For the PEACE team,

*Randall Cleveland*

Randall Cleveland



HCR 1067 Joshua Tree, Ca. 92252

Executive Director Valerie Termini  
California Fish and Game Commission  
P.O. Box 944209  
Sacramento, Ca. 94224-2090

January 24, 2017

RE: opposition to GPS collars, general comments PPWG

Dear Executive Director Termini and Commissioners,

We oppose the use of GPS collars for the training of, or hunting with, hounds. Free-roaming dogs in wilderness areas are highly damaging to ecosystems, and their activities have secondary consequences of disrupting non-target species. Pursuit by dogs can produce dangerously elevated temperatures in ungulates<sup>i</sup>, cause flight from home ranges and energy expenditures that can result in needless mortality<sup>ii</sup>. Vigilance behavior competes with needed foraging, and where hazards exist, reproductive rates can be reduced.<sup>iii</sup>

Californians pour tremendous resources into restoration and connectivity, but it's questionable as to whether we'll be capable of keeping pace with changes driven by an exploding human population. Best efforts may or may not succeed in stabilizing wildlife populations already suffering from compromises in natural spaces, particularly within isolated landscape blocks. Aggravating disturbance to target and non-target wildlife through the invasive activities of dogs only diverts us away from our common goal of sustaining wildlife populations. GPS collars enable dogs to travel further from their handlers, and the footprint of human impacts grows in accordance with these greater distances. The use of GPS collars diminishes our habitat restoration efforts, and promotes wildlife disruption.

While we endorse humane consideration for all animals, the CFGC is engaged in a process centered on the management of wildlife specifically. Other agencies are responsible for the welfare of domestic animals so discussions of the best interests of dogs are immaterial within this decision-making platform. Regulations require that hounds be under the control of their handlers at all times, which logically renders the need for GPS mute. Furthermore, allowing GPS collars opens a door to inexperienced handlers releasing untrained or green hounds, and subsequent unsportsmanlike behavior. With all of the difficulties currently facing law enforcement, we shouldn't burden our officers by inviting new opportunities for potential abuses or incompetence. In conclusion, we feel that the use of GPS collars for hunting only benefits a select minority, to the detriment of numerous overarching considerations. We have created enough pressures to our wildlife without introducing more technological disadvantages.

We'd like to close our comments with a few notes on the Predator Policy Workgroups:

**Depredation:** Regarding the upcoming Predator Policy, it seems ambitious to resolutely address the complex issues and emotions surrounding depredation within the time frame of the Workgroups. Having been present at the recent P-45 town hall meeting in Malibu, it's clear that depredation in its current form is unpalatable to a large numbers of stakeholders, and that modernization of depredation will require thoughtful and comprehensive negotiations. Poor animal husbandry practices must become part of a baiting and habituation conversation. We ask that the Commission continue reviewing depredation regulations beyond the June 2017 Workgroup deadline.

**PPWG Original Intent:** The Workgroup approach was first presented as a means of pre-emptively incorporating stakeholder input into California's first ever Predator Policy. Former WRC Commissioners Baylis and Mastrup urged active stakeholders to craft proposals for lasting predator policies, speculating that, "we may never get around to it again". It's important to keep this in mind as the PPWG process moves forward. The task was not designed to be about minor regulatory shifts, but about *originating* meaningful wildlife policy that embraces contemporary science and anticipates the future.

Thank you once again for your time, and for the opportunity to participate.

Respectfully,



Miriam Seger  
Board Representative, Project Bobcat

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<sup>i</sup> Carolyn A. Sime, Domestic Dogs in Wildlife Habitats, Sept. 1999, <https://www.nps.gov/goga/learn/management/upload/656-Sime-1999.pdf>  
...In a personal communication (cited in Gavitt 1973), Downing stated that temperatures as high as 109°F were measured for 6 deer killed while being run by dogs. Normal rectal temperature for deer is 101°F (Clark and Jessup 1992). These authors caution that a rectal temperature of 106°F, in a capture situation, is of concern and attempts should be made to cool the animal. Body temperatures exceeding 108°F constitute an emergency situation, and treatment should begin immediately. If temperatures exceed 110°F, mortality is very likely...

<sup>ii</sup> Benjamin Lenth I", Mark Brennan<sup>2</sup>, and Richard L. Knight<sup>3</sup> February, The Effects of Dogs on Wildlife Communities 2006 Final research report submitted to: Boulder County Open Space and Mountain Parks, <http://www.bouldercounty.org/os/culture/posresearch/2006lenth.pdf>  
...Later field studies in the same region demonstrated that dogs chased deer (Sweeney et al. 1971), sometimes leading to deer mortality through direct attacks or exhaustion (Corbett et al. 1971)...

<sup>iii</sup> Julie K. Young, Kirk A. Olson, Richard P. Reading, Sukh Amgalanbaatar, and Joel Berger, Is Wildlife Going to the Dogs? Impacts of Feral and Free-roaming Dogs on Wildlife Populations, *BioScience* (2011) 61 (2): 125-132, <https://doi.org/10.1525/bio.2011.61.2.7>  
...Although the direct killing of wildlife is most apparent, many dogs also harass or chase endemic species, which results in increased stress and energetically costly behavior to native wildlife (Lenth et al. 2008). The mere presence of dogs also deters the use and habitation of those areas (Lenth et al. 2008) and can have deleterious effects on the breeding success of native species such as ungulates (Gingold et al. 2009)....