

FRIENDS OF THE NORTHERN SAN JACINTO VALLEY

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FISH AND GAME
COMMISSION

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November 14, 2014

Attn: Craig Stowers
California Department of Fish and Wildlife
1812 9th Street
Sacramento CA 95811

Charlton H. Bonham, Director
California Department of Fish and Wildlife
1812 9th Street
Sacramento CA 95811

California Fish and Game Commission
P.O. Box 944209
Sacramento CA 94244-2090

Re: Regulations Implementing AB711, Nonleaded ammunition - *DEPARTMENT OF FISH AND WILDLIFE - PUBLIC SCOPING MEETING - NOVEMBER 14, 2014.*

WARNING: Consumption of Game Meat Shot with Lead Ammunition May Be Hazardous to the Health of Your Family. (Attachment #1, Friends of the Northern San Jacinto Valley Newsletter, September, 2014)

Last October Governor Brown signed into law AB 711—the ban on the use of lead ammunition for hunting in California. The ban will not go into effect until July 2019. In the interim, California hunters can continue to use lead ammunition for hunting. We are requesting the Fish and Game Commission include a public health advisory in the Upland Game and Big Game hunting regulations booklet advising hunters of the hazard of the consumption of wild game shot with lead ammunition.

The Legislative findings, in pertinent part, state:

(c) "Fifty years of research has shown that the presence of lead in the environment poses an ongoing threat to the health of the general public.....

(d) "The United States Environmental Protection Agency defines lead as toxic to both humans and animals, and lead can affect almost every organ and system in the human body, including the heart, bones, intestines, kidneys, and reproductive and nervous systems. It interferes with the development of the nervous system and is therefore particularly toxic to children, causing potentially permanent learning and behavior disorders."

(e)"Lead is a potent neurotoxin, for which no safe exposure levels exist for humans. The use of lead has been outlawed in and removed from paint, gasoline, children's toys, and many other items to protect human health and wildlife."

(f) "Routes of human and wildlife exposure to lead include contaminated air, water, soil, and *food*. Lead ammunition in *felled* wildlife is often consumed by other animals and passed along the food chain. Dairy and beef cattle have developed lead poisoning after feeding in areas where spent lead ammunition has accumulated. Spent lead ammunition can also be mingled into crops, vegetation, and waterways. "

In addition, research has shown that eating *food felled* by lead ammunition has a significant negative impact on humans.

The Wildlife Society Final Position Statement on Lead Ammunition (Attachment No. 2) and the Scientific American 2009 article "Wild Meat Raises Lead Exposure" (Attachment No. 3) both discuss scientific research on the hazards of consuming meat shot with lead ammunition.

"When lead is imbedded in game meat becomes exposed to acid in the human stomach, lead may be absorbed into the system. Even if a lead pellet or bullet completely passes through an animal, a small amount of lead may be left in the tissue and may be absorbed by a person consuming the meat." (Attachment #2)

"The Centers for Disease Control and Prevention tested 736 people, mostly adults, in six North Dakota cities and found that those who ate wild game had 50 percent more lead in their blood than those who did not eat it. The lead exposure was highest among people who consumed not only venison, but also birds and other game, according to the study published last month in the journal *Environmental Research*.

‘What was most troubling is that as wild game consumption increases, the blood-lead levels increase,’ said study co-author Mary Jane Brown, chief of the CDC’s lead poisoning prevention branch. “The strong recommendation we would make is that pregnant women should not consume this meat.” (Attachment #3)

CEQA requires that impacts to humans be identified as a significant impact in an initial study. The initial study for these regulations must identify the human consumption of game meat shot with lead ammunition as a significant environmental impact. This legislation can only partially mitigate for this significant impact as it will not go into effect until 2019 and when it does it provides:

“3004.5 (b) except as provided in subdivision (j), and as soon as is practicable as implemented by the commission pursuant to subdivision (i), but no later than July 1, 2019, nonlead ammunition, as determined by the commission, shall be required when taking all wildlife, including game animals, game birds, nongame birds, and nongame animals, with any firearm.”

“(j) (1) The prohibition in subdivision (b) shall be temporarily suspended for a specific hunting season and caliber upon a finding by the director that nonlead ammunition of a specific caliber is not commercially available from any manufacturer because of federal prohibitions relating to armor-piercing ammunition pursuant to Chapter 44 (commencing with Section 921) of Title 18 of the United States Code. (2) Notwithstanding a suspension pursuant to paragraph (1), nonlead ammunition shall be used when taking big game mammals, nongame birds, or nongame mammals in the California Condor range, as defined in subdivision (a).”

The California Environmental Quality Act requires that harm to humans is a significant impact. (Initial Study 18(c)). Therefore, a significant environmental impact that this legislation is intended to reduce to a level of non-significance cannot be accomplished without the appropriate warnings.

Because of the delay until 2019 in the implementation of these regulations [3004.5 (b) and (i)] and the possibly permanent exceptions for specific hunting seasons and caliber of lead ammunition [3004.5(j)] the hazards to humans, particularly children and pregnant women, of consuming game shot with lead ammunition can only be fully mitigated to a level of non-significance, as required by CEQA, by a language such as, **“WARNING: Consumption of Game Meat Shot with Lead Ammunition May**

Be Hazardous to the Health of Your Family.” being placed in the hunting regulations with which all hunters are required to read and understand.

The California Administrative Procedure Act requires the Commission respond to these comments in writing before adopting new regulations. These written comments and your written response must be made part of the administrative record which is forwarded to the administrative reviewer for consideration before the regulations are finally approved for adoption.

Please keep us informed of all actions and hearings regarding the CEQA document adopted for these regulations at the following email addresses.



Tom Paulek, Conservation Chair
Friends of the Northern San Jacinto Valley



Susan Nash, President
Friends of the Northern San Jacinto Valley



Attachments:

1. Friends of the Northern San Jacinto Valley Newsletter, September 2014.
2. The Wildlife Society, “Final Position Statement Lead in Ammunition and Fishing Tackle” 2009.
3. Scientific American, “Wild Meat Raises Lead Exposure” 2009.

WARNING: Consumption of Game Meat Shot with Lead Ammunition May Be Hazardous to the Health of Your Family.

By Tom Paulek

September 2014



Last October Governor Brown signed into law AB 711—the ban on the use of lead ammunition for hunting in California. The lead ban will not go into effect until July 2019. In the interim California upland game hunters can continue to use lead shot for hunting dove, pheasant, snipe and other small game species.

The adverse impact of spent lead ammunition on wildlife populations has been well documented over many years. More recent research indicates the discharge of lead ammunition may be a significant public health concern. The wildlife Society 2009 Position Statement on lead ammunition reports: “When lead that is imbedded in game meat becomes exposed to acid in the human stomach, lead may be absorbed into the system. Even if a lead pellet completely passes through an animal, a small amount of lead may be left in the tissue and may be absorbed by a person consuming the meat.”

The September 28, 2009 Scientific American article “Wild Meat Raises Lead Exposure” notes:

“The Centers for Disease Control and Prevention tested 736 people, mostly adults, in six North Dakota cities and found that those who ate wild game had 50 percent more lead in their blood than those who did not eat it. The lead exposure was highest among people who consumed not only venison, but also birds and other game, according to the study published last month in the journal *Environmental Research*.”

“What was most troubling is that as wild game consumption increases, blood-lead levels increase”, said study co-author Many Jean Brown, chief of the CDC’s lead prevention branch. “The strong recommendation we would make is that pregnant women should not consume this meat”

“.... recent research has reported that

children’s mental abilities are reduced by lead at levels far below the CDC guideline. Brown and others say there is no threshold below which lead

does not cause harm, particularly with children.”

The Friends participated in the California Fish and Game Commission adoption of this year’s Upland Game hunting regulations. We presented the Friends May 21, 2014 comment letter and testified at the August 6, 2014 public hearing adopting the hunting regulations. Our testimony presented the science based lead hazard

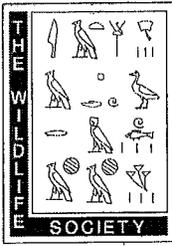
information and once

again requested the Commission include a public health advisory in the upcoming Upland Hunting Regulation booklet advising California hunters of the hazards of the consumption of game meat shot with lead ammunition. The Commission ignored the May 21st letter as well as our testimony at the August 6th Public Hearing, which they summarily dismissed.

Looking forward, the Friends may ultimately be stymied again by Commission misfeasance. AB 711 requires the Commission to promulgate regulations to fully implement the ban on lead ammunition by July 1, 2015. The Commission is now taking public input on regulations necessary to implement the 2019 lead ban. We plan to again raise the issue/impact of the need for a public health advisory warning hunters of the hazard of the consumption of game meat shot with lead ammunition. Given the Fish and Game Commission’s poor record of implementing its CEQA duties, we are not confident this obvious environmental impact will receive the consideration required by law.



ATTACHMENT #2



THE WILDLIFE SOCIETY

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Final Position Statement

Lead in Ammunition and Fishing Tackle

Lead has been used in ammunition and fishing tackle for centuries. It is an effective and inexpensive element for the manufacture of projectiles and weights. Although it is a naturally occurring element in the environment, lead has no functional or beneficial role in biological systems, and at very low levels of exposure it can be toxic, depending on the species and the health and age of an individual. At toxic levels lead damages the nervous system, causing paralysis and eventual death; at lower levels it is known to cause a variety of sublethal effects such as neurological damage, tissue and organ damage, and reproductive impairment.

Realization of the hazards of lead ammunition to waterfowl and some upland game birds can be traced to the late 1870s, while the hazards of lead fishing sinkers to waterfowl became apparent in the 1970s, when lead was found to poison swans in the United Kingdom (UK). In the 1970s and 1980s, the UK and some jurisdictions within the United States and Canada began placing restrictions on the use of lead ammunition and fishing tackle. Today lead from ammunition and fishing tackle provides a small fraction of total environmental releases, but it exists in a form that can be readily ingested by some species of wildlife.

Metallic lead can remain relatively stable and intact for decades, even centuries. However, under certain environmental conditions (e.g., acidic or basic water or soil) lead from shot or tackle can be readily released and taken up by plants or animals, causing a range of biochemical, physiological, and behavioral effects in some species of invertebrates, fish, amphibians, reptiles, birds, and mammals. Lead that is adsorbed or incorporated into food items through the soil, as well as lead fragments in carcasses or deposited at shooting sites, is known to be consumed by some birds and small mammals, resulting in elevated lead concentrations. Ingestion by reptiles, birds, and mammals of spent ammunition and lost fishing tackle has also been documented and can cause a range of negative effects in individuals, potentially leading to population-level consequences in some species (e.g., waterfowl, eagles, condors, mourning doves, and loons).

From a public health perspective, lead potentially can lead to a variety of human health problems, such as neurological effects and stunted growth, particularly in children. Although the extent is still unclear, recent research indicates that consumption of game taken with lead ammunition may increase blood-lead levels in humans. When lead that is imbedded in game meat becomes exposed to acid in the human stomach, lead may be absorbed into the system. Even if a lead pellet or bullet completely passes through an animal, a small amount of lead may be left in the tissue and may be absorbed by a person consuming the meat.

Lead poisoning related to spent ammunition and lost fishing tackle has been extensively studied in birds, and at least two studies indicate that the ban on the use of lead ammunition for hunting

waterfowl and coots in North America has successfully reduced lead exposure in waterfowl. Nonetheless, other species such as upland game birds (e.g., doves and quail) and scavengers (e.g., vultures and eagles) have been documented to be exposed to lead, and the California condor population may be at risk. Despite the prohibition on lead shot for waterfowl hunting, current data for raptors and avian scavengers indicate increases in lead exposure in these species, especially during hunting season. Accordingly, 24 states (as of 2008) have instituted restrictions on the use of lead ammunition to minimize effects to upland game birds, eagles, and other species. The hazard of ingested lead sinkers and fishing tackle is well-documented in swans and loons, and restrictions on the sale or use of lead weights have been instituted in parts of the UK, Canada, several other countries, and five states in the U.S. (as of 2008) in order to minimize effects on these and other potentially vulnerable species. There are only limited data on the adverse effects of lead ingestion at shooting ranges, and reproductive and mortality rates at these sites have not been adequately investigated.

There has been an extensive effort in the development, efficacy testing, and regulation of alternatives to lead-based ammunition for hunting waterfowl and waterbirds. Several effective nontoxic alternatives have been approved and currently are available in North America and elsewhere. Several manufacturers have developed nontoxic ammunition that can be used safely in all gauges of modern shotguns, as well as nontoxic rifle bullets for hunting large game. However, the widespread manufacture of this shotgun and rifle ammunition depends on assured markets provided by regulation and enforcement. Nontoxic shot may be used in all clay target sports and currently is required by some shooting facilities. Dozens of substitutes for lead fishing tackle have entered the marketplace in recent years. A few, but not all, alternative metals in fishing tackle have been deemed safe if ingested by waterfowl and some other birds and mammals.

The policy of The Wildlife Society in regard to lead in ammunition and fishing tackle is to:

1. Recognize that lead has been known for centuries to be a broad-spectrum toxicant to humans and wildlife.
2. Advocate the replacement of lead-based ammunition and fishing tackle with nontoxic products, while recognizing that complete replacement may not be possible in specific circumstances.
3. Recognize that the removal of lead for hunting, fishing, and shooting will require collaboration among affected stakeholders (including wildlife professionals, ammunition and tackle manufacturers, sportsmen, policymakers, and the public). It may require a phased-in approach, and will require explicit and targeted educational strategies at both the national and international levels, thereby acknowledging and supporting the crucial role that hunters and anglers play in wildlife management and conservation.
4. Encourage studies on reducing barriers to the development of nontoxic ammunition and fishing tackle, additional research that generates toxicological and environmental chemistry data, monitoring and modeling of exposure effects, and studies predicting consequences of exposure and long-term population-level effects. The need for additional

information, however, should not delay the educational efforts and the phasing-in of nontoxic ammunition and tackle where practicable.

5. Support educational efforts to promote greater public awareness and understanding of the consequences of lead exposure to wildlife populations, and emphasize the potential gains for wildlife and environmental quality from use of nontoxic ammunition and fishing tackle.

Approved by Council July 2009. Expires July 2014.

ATTACHMENT #3

SCIENTIFIC AMERICAN™

Permanent Address: <http://www.scientificamerican.com/article/wild-game-deer-venison-condors-meat-lead-ammunition-ban/>

Health » Environmental Health News

Wild Meat Raises Lead Exposure

Tests by the CDC show that eating venison and other game can raise the amounts of lead in human bodies by 50 percent

September 28, 2009 | By Scott Streater and Environmental Health News |

To Dr. William Cornatzer, it was an unforgettable image, one that troubled him deeply.

An avid hunter, Cornatzer was listening to a presentation on the lead poisoning of California condors when an x-ray of a mule deer flashed on an overhead screen. The deer had been shot in the chest with a high-powered rifle. Cornatzer was shocked that the deer's entire carcass was riddled with dozens of tiny lead-shot fragments.

"My first thought had nothing to do with California condors; it had to do with what I had been doing as a hunter myself, and what I had been feeding our kids," said Cornatzer, a clinical professor of medicine at the University of North Dakota School of Medicine & Health Sciences.

"I knew good and well after seeing that image that I had been eating a lot of lead fragments over the years," he said.

That realization led Cornatzer and a radiologist last year to X-ray 100 packages of venison that had been donated by a sportsmen group to a food bank. About 60 percent of the packages contained lead-shot fragments, even though it's common practice among hunters to remove meat around the wound.

The discovery prompted North Dakota to warn pregnant women and children 6 and under not to eat venison killed with ammunition containing lead.

It also sparked a flurry of new research that raises questions about the safety of eating wild game, as well as a renewed debate about eliminating lead ammunition.

Earlier this year, the National Park Service announced a controversial plan to ban lead ammunition and fishing tackle in the parks, which Acting Director Dan Wenk said "will benefit humans, wildlife, and ecosystems inside and outside park boundaries."

Cheap, durable and readily available, lead has been used in weapons and other products since the Romans first mined it more than 2,500 years ago. Bullets have contained lead, which upon impact mushrooms to create a larger wound, since the 14th century.

But lead is a dangerous neurotoxin, particularly for children and fetuses. Low levels can harm children's developing brains, causing learning disabilities and reduced IQs. High levels can trigger severe neurological problems.

Sporting groups are opposed to any restrictions on lead-based ammunition, arguing that there's no clear evidence that it is dangerous when used to hunt deer and other animals.

"The use of traditional ammunition does not pose a health risk to human beings," said Ted Novin, director of public affairs for the



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National Shooting Sports Foundation, a trade association for the firearms, ammunition and hunting industries.

Novin added that “there has never been a documented case of lead poisoning among humans who have eaten game harvested with traditional ammunition.”

New research, however, has shown that eating venison and other game can substantially raise the amounts of lead in human bodies. The findings have prompted some experts to recommend bans on lead ammunition.

“We want to avoid having people exposed to lead to the extent that it’s feasible and practical, and it’s clear that one of the key ways to minimize exposure is to use alternatives to lead ammunition,” said Dr. Michael Kosnett, a medical toxicologist at the University of Colorado at Denver School of Medicine. “You’re putting food on the table to nourish your family. Why not nourish them with healthy food if that’s a possible alternative?”

The Centers for Disease Control and Prevention tested 736 people, mostly adults, in six North Dakota cities and found that those who ate wild game had 50 percent more lead in their blood than those who did not eat it. The lead exposure was highest among people who consumed not only venison, but also birds and other game, according to the study published last month in the journal *Environmental Research*.

Those who ate wild game meat had average lead levels of 1.27 micrograms per deciliter, compared with 0.84 for those who ate no game. Most said they either hunted the animals themselves or obtained the meat from friends or family members.

“What was most troubling is that as wild game consumption increases, the blood-lead levels increase,” said study co-author Mary Jean Brown, chief of the CDC’s lead poisoning prevention branch. “The strong recommendation we would make is that pregnant women should not consume this meat.”

The CDC is planning a second round of testing this year involving hunters in Wisconsin, Brown said.

The National Shooting Sports Foundation argues that everyone in the North Dakota study had blood-lead levels below the CDC’s health guideline of 10 micrograms per deciliter.

However, recent research has reported that children’s mental abilities are reduced by lead at levels far below the CDC guideline. Brown and others say there is no threshold below which lead does not cause harm, particularly with children.

As a result, the CDC recommends that “all nonessential uses of lead should be eliminated,” according to a 2005 statement. Less than 2 percent of children in the United States have lead levels that exceed the amount that the CDC considers safe. Most exposure comes from old, deteriorating lead-based paint, which was banned in 1978.

Another study, published in April, showed that eating venison containing lead-shot fragments can quickly raise blood-lead levels.

Researchers at Washington State University and Boise State University fed lead-tainted venison to four pigs and lead-free venison to a separate control group of pigs. The pigs that ate the venison containing lead fragments reached a lead level of 3.8 micrograms per deciliter after only two days—more than three times higher than the highest level in the control group of pigs, according to the study, which was sponsored by The Peregrine Fund, a group that advocates for the removal of lead shot to protect condors.

“At risk in the U.S. are some ten million hunters, their families, and low-income beneficiaries of venison donation,” the report says. One program, Sportsmen Against Hunger, donates the meat to low-income people.

The National Park Service posted the results of The Peregrine Fund study on its Web site, noting “that while the results are preliminary and much further study needs to be done to better assess risks to humans, it appears that if lead bullets are used, odds are high that you will ingest lead particles in ground meat.”

Mostly to protect wildlife, the park service plans to end the use of lead bullets and fishing gear in all parks. A public comment period will

be held next year, said Jody Lyle, an agency spokeswoman.

“Our goal is to eliminate the use of lead ammunition and lead fishing tackle in parks by the end of 2010,” Wenk said when announcing the proposal in March. “We want to take a leadership role in removing lead from the environment.”

Although hunting is prohibited in most national parks, it is allowed on some park properties. Rangers also would have to stop using lead ammunition when culling herds or killing wounded or sick animals.

Hunting groups say any restriction on traditional ammunition will price many people out of hunting, because the alternatives--steel, copper or tungsten shells--can cost as much as six times more.

This is not the first time the federal government has considered restrictions on lead ammunition. The United States in 1991 phased out lead-shot for hunting waterfowl, mostly because bald eagles that prey on them were being poisoned.

Twenty-nine other countries have adopted voluntary or legislative restrictions. Some of the most aggressive regulations have been adopted in Europe, where lead-shot poisoning has killed white-tailed eagles and endangered Spanish Imperial eagles.

While there is no European Union standard for lead ammunition, Denmark was the first to ban lead shot for waterfowl in wetlands in 1985, followed throughout the 1990s by Norway, the Netherlands, Finland, England, Spain and Sweden. France did so in 2006. Denmark, followed by Norway and the Netherlands, extended the lead-shot ban to all hunted species in 2000.

California and Arizona also have taken action, implementing mandatory and voluntary bans, respectively, on lead bullets and shot in an effort to protect condors.

Pressure to ban lead-based ammunition in the U.S. intensified last year with the release of a report on threats to wildlife commissioned by The Wilderness Society and the American Fisheries Society.

The report said that lead fishing sinkers have poisoned brown pelicans, mute swans and Canada geese. Even more dangerous is lead shot in gut piles left behind by hunters and consumed by scavengers, including endangered condors, said Barnett Rattner, a wildlife toxicologist with the U.S. Geological Survey and a co-author of the review.

John H. Schulz, a resource scientist at the Missouri Department of Conservation, has calculated that as many as 15 million mourning doves are killed in North America each year from lead poisoning, mostly from eating spent lead shot that looks like the weed seed they depend on for food. That's almost as many as the estimated 20 million mourning doves legally shot and killed each year by hunters.

But it's the science pointing to possible human health impacts that has Schulz convinced that there's more than enough scientific evidence to begin a phase-out of lead ammunition.

“Let's not spend any more time studying whether the problem is significant. It is real. It is serious. It is significant,” Schulz said. “Now, how are we going to address it in a thoughtful and sensitive manner so no affected stakeholders are disenfranchised?”

This article originally ran at Environmental Health News, a news source published by Environmental Health Sciences, a nonprofit media company.