

Draft Environmental Document

Phasing of Nonlead Ammunition Requirement

**Adding Section 250.1, Amending Sections 311, 353, 464, 465, 475, and 485, and
Repealing Section 355 of Title 14 of the California Code of Regulations**

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**Prepared by the California Department of Fish and Wildlife for
the California Fish and Game Commission**

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EXECUTIVE SUMMARY: INTRODUCTION

On behalf of the California Fish and Game Commission (Commission), the California Department of Fish and Wildlife (CDFW) has prepared this Draft Environmental Document (Draft ED) pursuant to the California Environmental Quality Act (CEQA) (Pub. Resources Code, § 21000 et seq.) in compliance with the Commission's certified regulatory program (CRP) as approved by the Secretary for the California Natural Resources Agency. (Pub. Resources Code, § 21080.5; CEQA Guidelines, § 15251, subd. (b); Cal. Code Regs., tit. 14, § 781.5.)¹ to provide the public, responsible agencies, and trustee agencies with information about the proposed project's potential environmental effects. This Executive Summary provides a brief description of the proposed program, as well as a description of the issues of concern and program alternatives, and a summary of the environmental impacts.

a. The Proposed Program

Consistent with Fish and Game Code section 3004.5,² the proposed project consists of implementing the statutory mandate to require the use of nonlead projectiles and ammunition for the take of wildlife statewide no later than July 1, 2019 and, in whole or in part, earlier if practicable. Specifically, the Proposed Program includes addition of section 250.1 to Title 14, amendment of existing sections 311, 353, 464, 465, 475, and 485, as well as repeal of section 355 of title 14 of the California Code of Regulations. These proposed changes to Title 14 constitute the Proposed Program for the purposes of CEQA, the Commission's CRP, and this Draft ED.

The Proposed Program uses the following phase-in of nonlead ammunition, which phasing reflects the relative availability (by both type and volume) of nonlead rifle and shotgun ammunition:

Phase 1

Effective July 1, 2015, nonlead ammunition will be required when taking all wildlife on state Wildlife Areas and Ecological Reserves. These CDFW lands constitute approximately 1 million acres in California, with high ecological values, and some of these areas are popular with hunters. In addition, nonlead ammunition will be required for hunters taking Nelson bighorn sheep in California's desert areas. This requirement will affect a small number of hunters; in 2014 only 14 tags were issued for bighorn sheep statewide. A similar number is anticipated for the 2015 season.

¹ The Guidelines for the Implementation of CEQA are found in the California Code of Regulations, title 14, section 15000 et seq., and will hereinafter be referred to as "CEQA Guidelines."

² All unspecified "section" references refer to the Fish and Game Code unless otherwise specified.

Phase 2

Effective July 1, 2016, nonlead ammunition will be required when taking upland game birds with a shotgun, except for dove, quail, and snipe, and any game birds taken under the authority of a licensed game bird club as provided in sections 600 and 600.4, title 14, California Code of Regulations. In addition, nonlead ammunition will be required for the take of resident small game mammals, furbearing mammals, nongame mammals, nongame birds, and any wildlife for depredation purposes, with a shotgun statewide. However, in light of the uncertainty regarding the retail availability of nonlead centerfire and rimfire ammunition in smaller calibers, it will still be legal to take small game, furbearing, and nongame mammals, as well as nongame birds and wildlife for depredation purposes with traditional lead rimfire and centerfire ammunition during phase 2.

Phase 3

Pursuant to Fish and Game Code section 3004.5, effective July 1, 2019, only nonlead ammunition may be used when taking any wildlife with a firearm for any purpose in California.

b. Background

On October 11, 2013, the Governor signed Assembly Bill 711, which became effective January 1, 2014. (Stats. 2013, ch. 742, § 2, amending Fish & G. Code, § 3004.5.) In general, as enacted, section 3004.5 requires the use of nonlead ammunitions statewide not later than July 1, 2019 when taking any wildlife with a firearm. More specifically as to the phasing that is a subject of the Proposed Program, section 3004.5 requires that by July 1, 2015, the Commission must promulgate regulations that phase-in the statute's requirements, and that, if any of the statute's requirements can be implemented practicably, in whole or in part, in advance of July 1, 2019, the Commission shall implement those requirements. (Fish & G. Code, § 3004.5, subd. (i).)

The signing message from the Governor noted the danger that lead poses to wildlife, and also noted the current requirement for the use of nonlead ammunition in areas of California associated with or in the range of the California condor (*Gymnogyps californianus*). In addition, the Governor recognized and underscored the importance of hunters and the need to protect the hunting community's interests through, for example, providing hunters an adequate transition to the use of nonlead ammunition. To that end, the Governor directed CDFW to achieve the least disruptive phase-in, including incentives for hunters, to make this transition.

Beginning in January 2014, the Commission, as well as CDFW acting on behalf of the Commission, initiated an intensive public outreach effort designed to solicit ideas from both hunters and nonhunters on the least disruptive manner to phase the transition from traditional lead to nonlead ammunition during the four years prior to the date on which the requirement goes into effect statewide, and consistent with section 3004.5. Through that process, the Commission determined at its December 2014 meeting to go to notice with the Proposed Program pursuant to the Administrative Procedure Act (APA) (Gov. Code, § 311340 et seq.).

c. Alternatives

This Draft ED describes the alternatives considered for the proposed phasing-in of nonlead ammunition and evaluates their environmental impacts as compared to the Proposed Program. The purpose of the alternatives analysis in this ED is to describe a range of reasonable alternatives to the Proposed Program that can feasibly attain most of the identified Program objectives, but reduce or avoid one or more of any significant impacts. The potentially feasible alternatives that would generally meet the Program objectives include an “early implementation alternative,” “a modified phasing implementation alternative,” and a “no project alternative.”

d. Impacts Analysis

On the Commission’s behalf, CDFW reviewed the Proposed Program’s potential impacts utilizing the CEQA Guidelines’ Appendix G Initial Study checklist. The Initial Study concluded that the Commission’s adoption of the Proposed Program would result in “no impact” to the environment in the following resource areas: aesthetics, agriculture and forest resources, air quality, cultural resources, geology and soils, greenhouse gas emissions, hydrology and water quality, public services, transportation/traffic, utilities and service systems, and the mandatory findings of significance. Those CEQA checklist resource areas have been eliminated from further analysis based on the nature and scope of the Proposed Program. However, during the scoping period, CDFW received numerous comments expressing concern that the Commission’s adoption of the Proposed Program could affect water quality. As a result of the comments received during the scoping period, this Draft ED considers the Proposed Program’s impact to water quality.

The remaining impact areas, which are the focus of this Draft ED, include Biological Resources, Hazards and Hazardous Material, Hydrology (Water Quality) and Recreation. Note that socioeconomic effects are not considered environmental impacts under CEQA unless they contribute to a physical impact. The impact discussion under each individual resource topic cites socioeconomic information/effects as appropriate where such a nexus exists.

Accordingly, this Draft ED considers the following impacts:

BIO-1: Impacts to species from reduced lead and increased other metals (primarily copper) in the environment.

BIO-2: Impacts to ecosystems if reduced hunting activity occurs and that reduction contributes to overpopulation.

BIO-3: Reduced habitat due to reduced revenue from hunting.

BIO-4: Impacts from wounding.

HYD (WATER QUALITY)-1: Impacts to species from reduced lead and increased other metals (primarily copper) in the environment.

HAZ-1: Increased risk of ignition and associated risk of loss, injury, or death from wildfire.

REC-1: Impacts to hunting activities due to the increased cost or unavailability of nonlead ammunition, which impacts result in direct or indirect physical changes to the environment including changes in land uses or reduced maintenance of habitat areas.

Relying on substantial evidence as set forth herein, this Draft ED concludes those impacts to be less than significant.

e. Submitting Comments on the Draft ED

On behalf of the Commission, CDFW is now circulating this Draft ED for a CEQA review and comment period which will end on February 23, 2015. The purpose of public circulation is to provide agencies and interested individuals with the opportunity to comment on or express concerns regarding the contents of the Draft ED. For those interested, written comments or questions concerning this Draft ED should be submitted within this review period and directed to the name and address listed below.

Submittal of written comments via e-mail (Microsoft Word format) would be greatly appreciated.

California Department of Fish and Wildlife
Attn: Craig Stowers
Phasing of Nonlead Ammunition Requirement
Draft ED Comments
1812 9th Street
Sacramento, CA 95811
Email: Wildlifemgmt@wildlife.ca.gov

All documents mentioned herein or related to this Program can be reviewed online at the Program Website (<https://www.dfg.ca.gov/wildlife/hunting/lead-free/>).

Written comments received in response to the Draft ED during the public review period will be addressed in a new Response to Comments chapter of the Final ED.

Chapter 1: INTRODUCTION

CDFW has prepared this Draft ED on behalf of the Commission to provide the public, responsible agencies, and trustee agencies with information about the Proposed Program's potential environmental effects. This Draft ED has been prepared pursuant to CEQA and in compliance with the Commission's CRP as approved by the Secretary for the California Natural Resources Agency. (Pub. Resources Code, § 21080.5; CEQA Guidelines, § 15251, subd. (b); Cal. Code Regs., tit. 14, § 781.5.)

As set forth in more detail below, and pursuant to section 3004.5, the Proposed Program consists of implementing the statutory mandate to require the use of nonlead projectiles and ammunition for the take of wildlife statewide, and to implement that requirement no later than July 1, 2019 or earlier if practicable. Consistent with CEQA this Draft ED compares the Proposed Program's impacts to the existing environment for purposes of determining the impacts' significance. However, important context for considering the Proposed Program's impacts is provided by the fact the Legislature has already determined, by statute, that nonlead ammunition will be required for the take of wildlife statewide as soon as practicable and not later than July 1, 2019. Thus, as compared to the "no project" alternative, the Proposed Program's impacts are short-term (i.e., the four years prior to the 2019 statutory implementation) and reflect the legislative determination to implement the nonlead ammunition requirement as soon as practicable.

f. Program Background

On October 11, 2013, the Governor signed Assembly Bill 711, which became effective January 1, 2014. (Stats. 2013, ch. 742, § 2, amending Fish & G. Code, § 3004.5.) In general, as enacted, section 3004.5 requires the use of nonlead ammunitions statewide no later than July 1, 2019 when taking any wildlife with a firearm. More specifically as to the phasing that is a subject of the Proposed Program, section 3004.5 requires that by July 1, 2015, the Commission must promulgate regulations that phase-in the statute's requirements, and that, if any of the statute's requirements can be implemented practicably, in whole or in part, in advance of July 1, 2019, the Commission shall do so. (Fish & G. Code, § 3004.5, subd. (i).)

The signing message from the Governor noted the danger that lead poses to wildlife, and also noted the current requirement for the use of nonlead ammunition in areas of California associated with or in the range of the California condor (*Gymnogyps californianus*). In addition, the Governor recognized and underscored the importance of hunters and the need to protect the hunting community's interests through, for example, providing hunters an adequate transition to the use of nonlead ammunition. To that end, the Governor directed CDFW to achieve the least disruptive phase-in, including incentives for hunters to make this transition.

Beginning in January 2014, the Commission, as well as CDFW acting on behalf of the Commission, initiated an intensive public outreach effort designed to solicit ideas from both hunters and nonhunters regarding the least disruptive manner to phase the transition from traditional lead to nonlead ammunition as soon as practicable but not later than the date on which the requirement goes into effect statewide, and consistent with section 3004.5. CDFW shared a “starting point” proposal with the public at a total of 16 outreach meetings throughout the state, from Susanville to San Diego (see Table 1 below). This starting point proposal, as modified by public input received at these meetings, formed the basis for the proposed regulatory action at issue here: addition of section 250.1 to Title 14, amendment of existing sections 311, 353, 464, 465, 475, and 485, as well as repeal of section 355 of title 14 of the California Code of Regulations. These proposed changes to Title 14 constitute the Proposed Program for the purposes of CEQA, the Commission’s CRP, and this Draft ED.

TABLE 1: PUBLIC OUTREACH MEETINGS

<u>Date</u>	<u>Meeting Type and Location</u>
January 11, 2014	International Sportsmen’s Exposition, Sacramento
January 15, 2014	Wildlife Resources Committee (WRC) Meeting, Van Nuys
March 1, 2014	National Wild Turkey Federation, Vacaville
March 18, 2014	Director’s Hunting Advisory Committee, Sacramento
March 28-29, 2014	Fred Hall Show, Del Mar
April 15, 2014	Public Workshop, Ventura
June 3, 2014	Public Workshop, Eureka
July 19, 2014	Ducks Unlimited Meeting, Corning
July 19, 2014	Public Workshop, Redding
July 28, 2014	WRC Meeting, Sacramento
July 29, 2014	Public Workshop, Rancho Cordova
August 5, 2014	Public Workshop, San Diego
August 12, 2014	Public Workshop, Fresno
August 19, 2014	Public Workshop, Rancho Cucamonga
September 17, 2014	Regulation Recommendation at WRC, Sacramento
October 25, 2014	Public Workshop, Susanville

In order to adopt the Proposed Program by regulation, the Commission must comply with and conduct regular noticed rulemaking pursuant to the APA. That effort is occurring concurrently with the related environmental review of the Proposed Program as required by CEQA and the Commission's CRP. The scope of the proposed rulemaking is discussed below in more detail.

g. Overview of CEQA Requirements

CEQA's primary objectives are to:

- Ensure that the significant environmental effects of proposed activities are disclosed to decision makers and the public;
- Identify ways to avoid or reduce environmental damage; prevent environmental damage by requiring implementation of feasible alternatives and/or mitigation measures;
- Make public the reasons for agency approval of projects with significant environmental effects;
- Foster multidisciplinary interagency coordination in the review of projects; and
- Enhance public participation in the planning process.

With certain strictly limited exceptions, CEQA requires all state and local government agencies to consider the environmental consequences of projects over which they have discretionary authority before taking action on those projects. The statute establishes both procedural and substantive requirements that agencies must satisfy to meet CEQA's objectives. For example, the agency with decision-making authority (the lead agency) must first assess whether a proposed project would result in significant environmental impacts. If the project could result in significant environmental impacts, CEQA generally requires that the agency prepare an EIR, analyzing both the proposed project and a reasonable range of potentially feasible alternatives.

Because the Proposed Program involves the Commission's adoption of regulations, the environmental document serves as a functional equivalent environmental document prepared by CDFW for the Commission pursuant to its CRP. (See generally Pub. Resources Code, § 21080.5; CEQA Guidelines, § 15251, subd. (b); Cal. Code Regs., tit. 14, § 781.5.) In general, CRPs as approved by the Secretary for Natural Resources provide a functional equivalent process for state agencies to prepare analysis and conduct related environmental review pursuant to CEQA for certain types of projects that fall within the CRP. Project approvals conducted pursuant to an approved CRP are exempt from Chapter 3 and a limited number of other provisions in CEQA. Thus, with respect to the environmental analysis under the Commission's CRP for the Proposed Program at issue here, CDFW is preparing the functional equivalent of an EIR in accordance with CEQA generally, and conducting regular noticed rulemaking as provided by the CRP and APA.

h. Scope and Intent of Document

The Commission will use the analyses presented in this Draft ED, and the public responses to them, to evaluate the Proposed Program's environmental impacts and to further modify, approve, or deny approval of the Proposed Program based on the analyses provided herein. The ED is an informational document intended to inform related public decision-making. Likewise, while the ED focuses on the potentially significant environmental effects that may result from the proposed project or any of the alternatives, the ED itself is not a recommendation by CDFW to the Commission to either approve or deny any specific change in regulation. The ED, in this respect, reflects CDFW's effort on behalf of the Commission, and the Commission's related good faith effort to analyze and publicly disclose the potentially significant environmental effects that may occur with the Proposed Program. And importantly as to those potential effects, CEQA does not expand or otherwise provide independent legal authority to the Commission or CDFW to impose measures or otherwise address project-related significant environmental impacts beyond the authority provided both entities under the Fish and Game Code.

The purpose of the analysis is to present the information required by the Commission's CRP. Given the limited scope of the related exemption from CEQA, the purpose of the ED is to also fulfill lead agency related obligations in the CRP context to effectuate all of CEQA's other substantive and procedural obligations. Thus, for example, CDFW has prepared this analysis with an eye to the specific requirements set forth in the California Code of Regulations, title 14, section 781.5 and the provisions of CEQA generally that also apply; e.g., Chapter 2.6. (Pub. Resources Code, §§ 21080-21098.)

i. Baseline Conditions

i. Statutory Explanation of Baseline

Under CEQA, the environmental setting or "baseline" serves as a gauge to assess changes to existing physical conditions that will occur as a result of the Proposed Program. Per the CEQA Guidelines, and for purposes of an EIR specifically, the environmental setting is normally the existing physical conditions in and around the vicinity of the proposed project as those conditions exist at the time the Notice of Preparation (NOP) is published. (CEQA Guidelines, section 15125.) As underscored by case law, however, the appropriate environmental baseline for a given project may be different in certain circumstances in order to provide meaningful review and disclosure of the environmental impacts that will actually occur with the proposed project.

ii. Baseline for this Analysis

The physical condition existing at the time of the NOP's publication is the appropriate CEQA baseline for evaluating the potential impacts from phasing-in the requirement for nonlead ammunition as practicable and not later than July 1, 2019. As described above, this is the standard baseline used in a CEQA analysis.

Notably, the Proposed Program consists of the required phase-in, as practicable, of nonlead ammunition prior to the mandate to require nonlead ammunition statewide no later than July 1, 2019; the Proposed Program does not include the statutory July 1, 2019 statewide requirement itself. As a result, the conditions that will occur absent the Commission taking any action to phase the nonlead requirement (as discussed in Chapter 5, the “no project” alternative) differ from those that existed at the time of the NOP’s issuance.

California Penal Code defines "ammunition" as follows: “includes, but is not limited, to any bullet, cartridge, magazine, clip, speed loader, autoloader, or projectile capable of being fired from a firearm with deadly consequences.” (Pen. Code, § 16150.) Section 353, title 14, California Code of Regulations defines a "projectile" as "any bullet, ball, sabot, slug, buckshot or other device which is expelled from a firearm through a barrel by force." For purposes of the Proposed Program, projectiles used for taking wildlife must be certified as nonlead and not the other definitions contained in Penal Code section 16150.

The baseline conditions and setting considered here includes the entire state of California where wildlife may be taken with a firearm through hunting, depredation, public safety (except in life threatening situations where use of lead ammunition would not be restricted), scientific collecting, or nuisance animal control. Of the above activities that result in take of wildlife, the overwhelming majority are taken through hunting (approximately three hundred thousand participants), with a much smaller number taken for depredation/nuisance purposes (a few hundred to a few thousand participants), and very few taken for public safety and scientific collecting (fewer than one hundred participants). For all of these methods of take, lead, as well as nonlead or non-toxic ammunition may be used. However, lead ammunition is most commonly used statewide with the exception of waterfowl hunting, big game hunting in the area commonly referred to as the “condor range,” hunting on Department of Defense installations that may allow public access for hunting (e.g., Camp Pendleton, Vandenberg Air Force Base, and Fort Hunter-Liggett), and private properties that require nonlead ammunition if they offer public hunting opportunity.

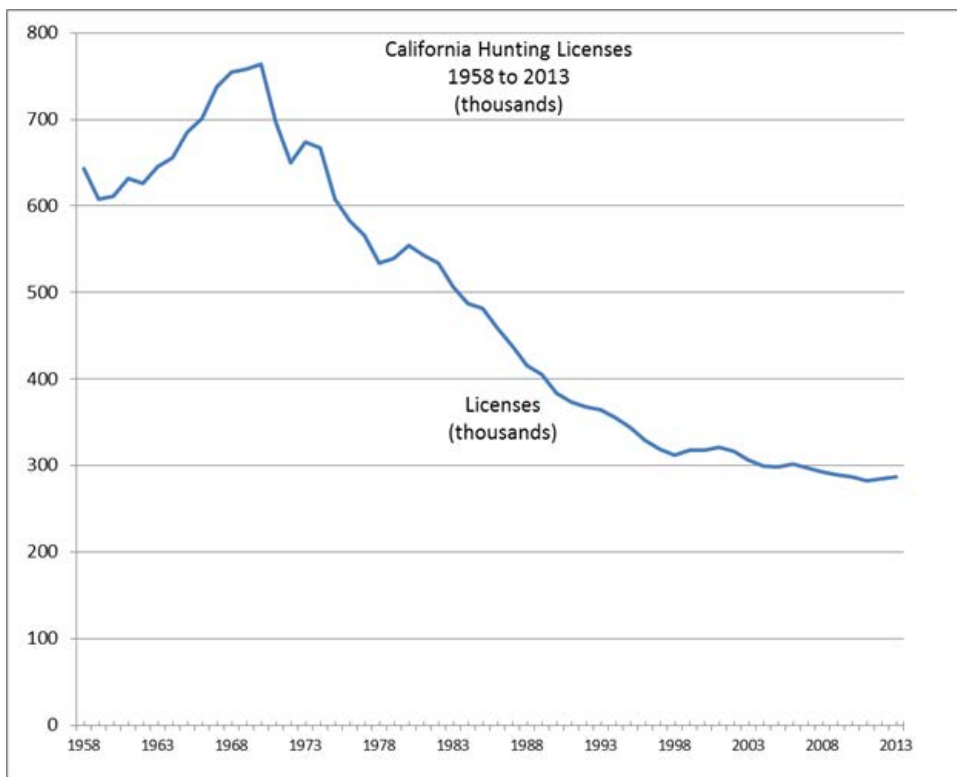
iii. Level of Hunting in California

Chapter 3, Impact Bio-3, as well as Chapter 3, Rec-1, discuss existing hunting trends in California in more detail. In brief, there are currently about 290,000 hunting licenses sold annually in California. While CDFW does not have a current reliable estimate, previous hunter surveys indicate some percentage (less than 8 percent) of those who purchase licenses will end up not hunting at all for a variety of reasons. Hunting of big game mammals (deer, wild pig, black bear, elk, pronghorn antelope, and bighorn sheep) primarily with center-fire rifles; hunting of upland game species (such as dove, quail, turkey, pheasants and rabbits) with a shotgun (and some species such as small mammals with a rifle); and waterfowl hunting with a shotgun are the dominant hunting activities in the state.

Using the sales of licenses as one indicator to approximate hunting activity suggests that hunting activity in California has been fairly stable during the past several years. However, license sales have declined by more than 50 percent since a peak in the early 1970s (Figure 1).

This indicates that the number of hunters in the field has declined and the level of lead being released into the environment annually from hunting activity has also likely declined.

Figure 1. California Hunting Licenses



Sources: USFWS License Sales by State, 1958-1969; CDFW LRB, 1970 – 2013.

iv. Geographic Area of Wildlife Take in California

For many species, the entire state comprises part of a hunt zone (e.g., deer). However, local, state, or federal restrictions will dictate whether hunting or use of a firearm is allowed in particular areas. Most hunting activity occurs on public lands administered by the Bureau of Land Management and U.S. Forest Service, private lands such as ranches and hunting clubs, CDFW wildlife areas and ecological reserves, United States Fish and Wildlife Service (USFWS) wildlife refuges, and Department of Defense military bases. No mechanism is available to track the number or acreage of private properties that may be used for hunting.

The most recent USFWS Survey (USFWS, 2011a, Table 27; USFWS, 2011b, Table 14) found that whereas across the United States a wide majority of hunting days occur on private land (78 percent private and 22 percent public), in California, hunt days are split more evenly with 61 percent of hunting days occurring on private land and 56 percent on public land.³ This may be in part due to the larger proportions of public land in Pacific Region states. Public lands in California comprise approximately 45 percent of the state's approximately 101 million acres and most of it is open to hunting (Table 2).

³ The total exceeds 100 percent because some of the hunt days are spent on both private and public land.

Table 2. Summary of land ownerships and estimated acreages in California and whether they are known to be open to hunting and/or have an actively managed hunt program (as opposed to passively allowing hunting to take place).

Land Designation	Est. Acres Open to Hunting	Est. Acres Closed to Hunting	Est. Total Acres
U.S. Forest Service ¹	Most	Unknown	20,800,000
Bureau of Land Mgt. ¹	Most	Unknown	15,200,000
Private Land ²	Unknown	Unknown	45,591,000
Actively Managed Lands	-	-	-
CDFW Wildlife Areas	706,051	324,011	1,030,062
CDFW Ecological Reserves	138,042	89,397	227,439
Federal Refuges ³	306,692	0	306,692
Department of Defense ⁴	426,334	3,564,505	3,990,840
CDFW Private Lands Management Program	1,068,892	0	1,068,892

¹ While the majority of USFS and BLM lands are open to hunting, CDFW does not have an exact acreage estimate (estimating at 90%).

² Acreage of private lands in California that may, or may not be open for hunting to the public or otherwise.

³ Acreage for closed zones within existing Federal Refuges that allow hunting was not available.

⁴ Acreage estimated from DOD lands enrolled in the Commission's Military Hunt Program.

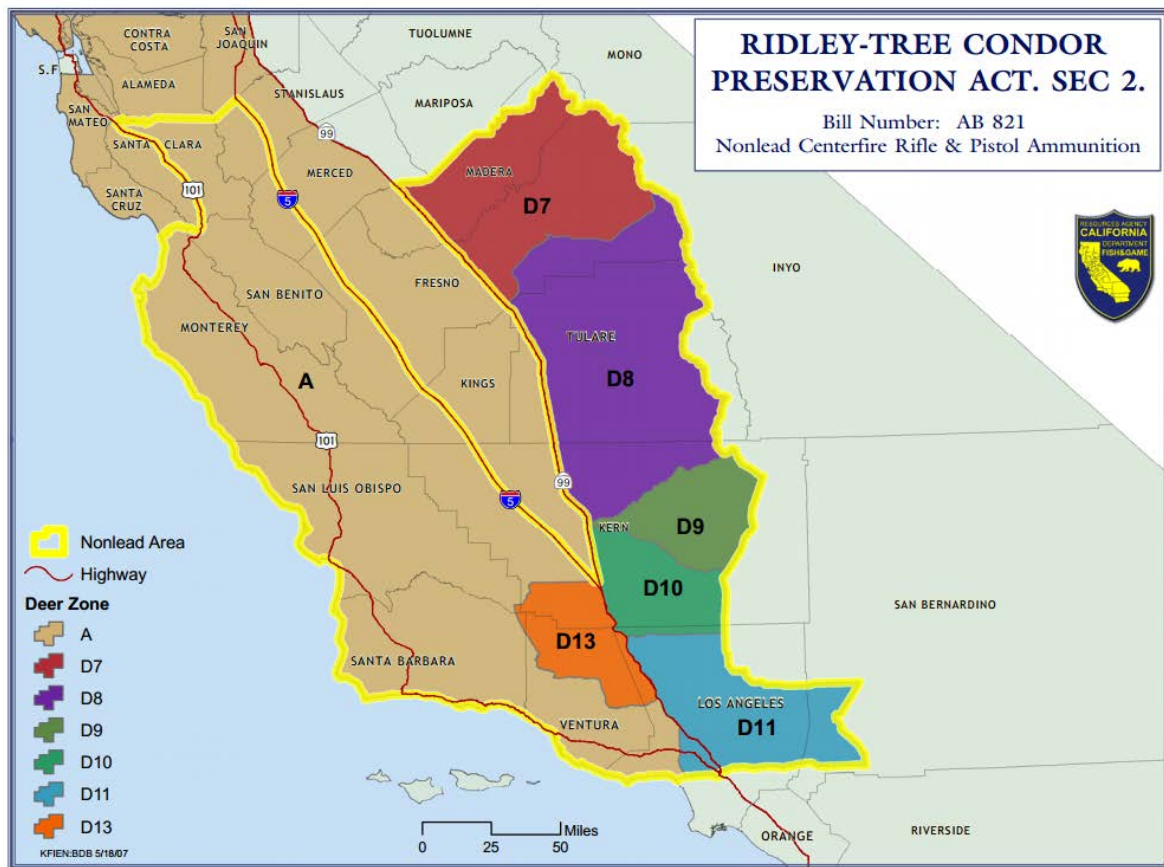
Take of wildlife for depredation and nuisance species primarily occurs on those private lands where agricultural production occurs (farming and ranching) and at the urban/wildland interface where wildland is adjacent to developed areas creating an attraction for wildlife for food, cover, and water (e.g., Tahoe Basin or the foothills of Los Angeles). However, use of a firearm at the urban interface is likely minimal as most take occurs through trapping of problem animals. Areas of expansive wildland, remote areas, and most of the public land areas are considered to be infrequent depredation/nuisance areas.

v. Areas Restricted in Use of Lead Ammunition

Nonlead ammunition for the take of wildlife is already required in parts of California. The longest standing area restriction on use of lead ammunition for hunting is on the federal national wildlife refuge system where nonlead ammunition was required as early as the mid-1980s. This requirement became effective state- and nation-wide in 1991 and thus applies for hunting of waterfowl on any lands. In the late 2000s, the use of lead ammunition was prohibited for hunting on Department of Defense installations that may allow public access for hunting. These areas include Camp Pendleton, Vandenberg Air Force Base, and Fort Hunter-Liggett. Additionally, there may be significant properties such as ranches/forestlands that are in private ownership and may themselves require nonlead ammunition if they offer public hunting opportunity.

With respect to state hunting regulations, and notwithstanding the federal requirement for nonlead ammunition for take of waterfowl, the largest contiguous area within the state where nonlead ammunition has been required for the take of big game and nongame mammals is the condor range area established by legislation in 2008 (Figure 2).

Figure 2



The condor range comprises about 21 million acres or about 20 percent of the state. Additionally, within the condor range, CDFW specifies that nonlead ammunition must be used on lands currently enrolled in CDFW's Private Lands Management Program or when a depredation permit is issued.

vi. Use of Lead and NonLead Ammunition for the Take of Wildlife Through Hunting

Lead ammunition has been, and continues to be, the dominant ammunition used for taking wildlife since modern firearms and hunting activities began. Firearms as well are the most common method used to hunt wildlife. In the mid-1980s, the use of copper bullets for big game hunting began gaining notice (e.g., <http://www.barnesbullets.com/images/Barnes%20Position%20Statement%20CA%20non-lead%202008a.pdf>). However, commercially available nonlead ammunition for big game did not become more common until the mid-late 2000s. Since the mid-2000s, CDFW has recommended that California hunters voluntarily consider switching to nonlead ammunition for the benefit of condors and other scavenging wildlife.

Table 3 was developed based on the limited information available (and limited ability to make inferences) that indicate the number of hunters interested in applying for firearm versus non-firearm hunt drawings; and on the information available to estimate the number of hunters and hunting activity in areas where lead ammunition is already prohibited such as the 2008 condor nonlead area. For example, most wild pig hunting in California occurs in the condor range where lead ammunition is prohibited; consequently a higher proportion of wild pig hunters are believed to use nonlead ammunition. CDFW estimates that approximately 25 percent of deer hunters, one of the primary groups of affected hunters, already use nonlead ammunition while another large group, the upland game hunters, appears to use nonlead ammunition less (estimated at less than 10 percent of hunters).

Table 3. CDFW estimates (average of 2011-2013 license years) of the number of licenses and tags issued for hunting, the estimated percentage of hunters using a firearm and lead or nonlead ammunition, and estimated annual harvests.

Licenses or Tags	2011-2013 average (licenses, tags or stamps)	Estimated rifle or shotgun hunters	Estimated hunters not using a firearm (e.g., archery)	Estimated hunters using nonlead or non-toxic ammunition	Estimated hunters using lead ammunition	2011-2013 estimated annual harvest
Hunting Licenses	284,775	na	na	na	na	na
Deer Tags	183,995	89.3%	10.8%	25.2%	64.0%	31,809
Antelope, Bighorn Sheep, Elk Tags	888	90.4%	9.6%	21.1% ¹	67.9%	477
Bear Tags	24,486	90.5%	9.5%	0.9%	87.3%	1,595
Wild Pig Tags	60,011	99.0%	1.0%	65.0%	35.0%	3,306
Bobcat Hunting Tags	12,547	94.0%	6.0%	25.0%	69.0%	296 ²
Duck Validation	68,632	0.0%	0.0%	100.0%	0.0%	1,778,384 ³
Upland Game Bird Validation	176,584	>99%	<1%	6.3%	93.7%	3,290,676 ⁴

¹ Average does not include tags for antelope and bighorn sheep.

² Does not include take by trapping.

³ Waterfowl average calculated from 2010-2012 USFWS Harvest Information Program.

⁴ Estimates from Game Take Hunter Survey averaged across the most recent three years available (2007, 2008, 2010).

For most game species, many, if not most, hunters will return unsuccessful and may not fire a shot (for example, bear hunters average about 6 percent success, deer hunters approximately 15 percent). The most commonly taken game species in California with lead ammunition is the mourning dove. (CDFW, 2011.) CDFW estimates that "gut-piles" from a high proportion of the estimated annual take of 37,187 big-game animals will be left in the field by hunters (plus an unknown amount of meat trimmings from the wound area and/or body cavity); most upland and waterfowl species are removed from the field whole and cleaned at home by hunters or commercial operations that provide that kind of service.

CDFW acknowledges that for each hunted species, there will be animals shot, wounded, recovered, and not recovered by the hunter. While hunters do not want to waste or lose game that they have pursued, it does result in animals either recovering on their own, or dying in the wild. As a consequence of this loss, there is some amount of lead shot or bullet fragments that will occur in the wildlife food chain when predators/scavengers consume game species lost by hunters. There can be similar wounding loss of big game from the use of nonlead ammunition, which typically delivers a higher velocity, harder metal with less fragmentation leading to concern by some of the public that they will result in more wounding loss and the bullet will just pass through soft tissue.

vii. Level of Depredation/Nuisance Take in California

Depredation take of wildlife (deer, elk, black bear, mountain lion, wild pig, wild turkey, beaver, and gray squirrel are California's depredation species pursuant to Fish and Game Code sections

4180 et seq.) may occur upon issuance of a depredation permit to a landowner or his agent for damage/loss of crops and property. CDFW records indicate that on average, 1,412 permits were issued each of the past three years (2011-2013). The most frequently issued permits are for wild pig, black bear, deer, beaver, and mountain lion. Typically, depredation animals taken are either directly shot and killed per the permit; or are trapped and dispatched with a firearm by a government official.

CDFW does not have accurate information on the number of animals taken under depredation because the permit system currently does not comprehensively capture take by the landowner, and each permit issued may list a number of individual animals to be taken (that is, with the exception of mountain lion, a permit may be issued for multiple depredating animals). Many permits issued do not result in take of any animals, often because the animals have moved on and the permit is issued for a specific time period.

The disposition of animals taken under depredation varies widely depending on species and local conditions. For example, mountain lions taken must be turned over to CDFW if the carcass is reasonably recoverable. For other species, the permit itself will indicate the disposition of the carcass. Frequently, the carcasses will be buried, incinerated, or may be left in the wild. Wild pig and bear are frequently caught in traps, dispatched and buried, or left in the field in a remote location.

In addition to depredation, there is take of other wildlife that constitute a nuisance and for which there are few restrictions on their take when causing damage to property or agriculture. Nongame species such as coyote and ground squirrel, and smaller mammals and rodents such as raccoon, opossum, skunk, muskrat, and others may be taken/trapped and humanely euthanized, often with a firearm. Disposition of the animals is unspecified and it is assumed that most are left in the wild to return to the system. CDFW has no data upon which to estimate the numbers of animals taken under these conditions, or how they are disposed. Additionally, depending on location, many of these animals would be taken through the use of a trap as they may be in areas where use of a firearm is legally prohibited.

Finally, for wild pigs, there exists in statute what is often referred to as the “encounter” law. Under this provision, landowners or their agents are authorized to kill wild pigs encountered causing property damage. Take of these wild pigs must be reported to CDFW, however, it is acknowledged that the reporting system is not complete and there is under-reporting. Of concern is whether taken wild pigs are killed with lead ammunition and whether their remains are left in the field.

viii. Other Take of Wildlife By Firearm

CDFW or local law enforcement may need to take wildlife that is deemed a public safety threat. This occurs infrequently and primarily with mountain lion, coyote, and black bear. Public safety animals taken are recovered and delivered to the CDFW laboratory for necropsy and testing. It is estimated that less than 50 animals of all species are taken annually, thus in comparison with the number of animals taken by hunting and through depredation, the take of animals for public safety results in minimal amounts of lead in the environment. Law enforcement may

take, and pursuant to the Proposed Program may continue to take, public safety animals with lead ammunition due to the circumstances on-the-scene.

CDFW issues Scientific Collecting Permits and there are a small few (less than 10) that use a firearm to collect wildlife for study or museum specimens. As these animals are removed from the wild, there is no lead-contaminated wildlife left in the field, except perhaps for the occasional wounded but lost animal.

Although illegal take of wildlife with a firearm is of concern, it is difficult to quantify the level of illegal take due to the secretive nature of the activity. For some species such as deer, CDFW has historically considered illegal take to be equal to legal take (CDFW unpubl. files). Because the activity is already illegal, it is similarly likely that offenders do not comply with existing restrictions on the use of lead ammunition. This is a concern in the existing condor range in particular as it relates to the take of wild pigs. Again, CDFW is unable to quantify the level at which such activities occur because of the secretiveness of it and that it can likely occur on private lands where ready access by CDFW is difficult.

ix. Current Level of Lead and Other Metals in the Environment Related to the Take of Wildlife

Lead was recognized as an important cause of mortality in wildlife populations in the late 1950s (Bellrose et al., 1959; Irwin et al., 1972; Sanderson et al., 1986), when ingestion of spent hunting lead pellets or fishing sinkers was recognized to cause death in a wide range of wild waterfowl. (Bates et al., 1968.) It is well recognized that lead fragments can be absorbed from the gastrointestinal tract of birds and mammals, cause damage in various organs, and result in behavioral changes, significant illness, and even death depending on the amount ingested. (Reiser et al., 1981; Kramer et al., 1997; Fisher et al., 2006.) Acknowledgment of the health impacts of lead shot in waterfowl and the endangered species that prey upon waterfowl prompted regulation of lead shot in waterfowl hunting. Nontoxic (steel) shot was proposed for waterfowl hunting along the most impacted flyways in 1976 and slowly phased in until a nationwide ban on the use of lead ammunition in waterfowl hunting was implemented in 1991 (USFWS, 2006). However, lead continues to be deposited in the environment in the form of lead ammunition through upland bird and mammal hunting, target practice, and other legitimate, as well as illegal, shooting activities.

The potential effects of lead ammunition in non-waterfowl hunting practices has now received national attention in part because of recent documentation of harmful levels of lead exposure in the endangered California condor population. Biologists and veterinarians closely monitoring reintroduced condors have documented high levels of lead in condors in the wild. (Fry, 2003; Hall, 2007; and Hunt, 2007.) The immense conservation effort to recover the California condor from the brink of extinction has galvanized public management agency attention on the issue of lead use in ammunition.

CDFW acknowledges that lead currently exists in the environment from the take of wildlife. On most public and private lands, this level of lead is believed to be widely dispersed on wildlands, and likely difficult, if not impossible, to detect. However, on some areas where lead

ammunition is used, primarily dove fields that are heavily hunted each year, it is acknowledged that lead accumulation likely has occurred. For example, in advance of the ban on lead for waterfowl hunting, the National Wildlife Health Research Center estimated as many as 900,000 pellets per acre in the top ten cm at the Sacramento National Wildlife Refuge. (Mausser et al., 1990.) While CDFW is not aware of any studies in California, studies elsewhere indicate that up to 360,000 pellets per acre have been found in some dove hunting fields in other states. (Plautz et al., 2011.)

As a proxy to examining lead in the environment, studies frequently assess lead levels in various wildlife species, particularly predators and scavengers such as raptor species. Kelly et al. (2014a) documented the causes of mortality in an opportunistic sample of golden eagles, turkey vultures, and common ravens, and assessed exposure to a range of contaminants that have been found in carrion and prey animals, which serve as food resources for these species. The authors found lead intoxication represented 17 percent of the mortalities. Further, elevated liver lead concentration and bone lead concentration were detected in 25 percent and 49 percent of birds tested, respectively.

However, there is currently a general lack of knowledge regarding lead exposure in sensitive raptor species in California. Due to the limited number of samples, these species are not well represented during mortality investigations led by CDFW. As such, the role of contaminants as factors of mortality for these raptor species is unknown. There is currently an ongoing project entitled “Disease and contaminants in sensitive raptor species and sentinels” that is addressing this topic. Reduced lead exposure was observed in sentinel species within the condor range after the partial ban. (Kelly et. al., 2011.) However, due to the highly migratory nature of some of these sensitive raptor species, they could be exposed to lead outside of California.

As it relates to upland game species mortality, CDFW has necropsied numerous birds and has detected the presence of lead exposure in the livers of band-tailed pigeon and mourning dove carcasses (e.g., Franson et al. 2009; K. Rogers, CDFW pers comm.). Researchers have demonstrated through captive bird feeding studies that mourning dove will consume lead shot as well as steel shot and that lead will accumulate in the carcass. (Schulz et al. 2006.)

In addition to lead in the environment, the baseline conditions include some level of nonlead ammunition being deposited in the environment from copper bullets, steel shot, and other metals used in the manufacturing of nonlead ammunition. As discussed in Chapter 3, CDFW has no scientific evidence that the occurrence of these metals in the wild has any detectability or consequence.

j. The Commission’s CRP, CEQA Generally, and the Rulemaking Process

The Commission’s rulemaking pursuant to the APA is running concurrently with the related environmental review required by CEQA. The following discussion explains the steps in the CEQA processes, including the Commission’s CRP, as well as the APA.

i. CEQA Initial Study/Notice of Preparation

On the Commission's behalf, CDFW prepared an NOP for the Proposed Program consistent with CEQA Guidelines (CEQA Guidelines, § 15082) and distributed it to the public on October 31, 2014. The NOP was submitted to the State Clearinghouse at the Governor's Office of Planning and Research for distribution to state agencies. Additionally, the NOP was sent to all counties in the state, federal agencies, and any organization or individual who had requested notice. Where available, notice was distributed to organizations and individuals electronically through an email notification list maintained by the Commission.

The NOP included the Initial Study, which provided a project description and a preliminary, relatively brief environmental impact analysis for the Proposed Program. The Initial Study identified the less-than-significant effects expected to result from the Program, thus enabling the Draft ED to address in more substantive detail the environmental topics with potentially significant effects. The Initial Study also described the Program as it was, and continues to be, envisioned. Information contained in the NOP (activity descriptions, program description, range of topics, etc.) was further refined based on the input received in public comments on the NOP and is reflected in the text of this Draft ED. The NOP and Initial Study are included in this Draft ED in Appendix B.

Distribution of the NOP began the 30-day scoping period during which the public and regulatory agencies had an opportunity to provide comments on the scope of the Draft ED and proposed regulations. The scoping period is discussed in more detail below.

ii. CEQA Scoping Process

Pursuant to CEQA, to provide the public and regulatory agencies an opportunity to ask questions and submit comments on the scope of the Draft ED and proposed regulations, CDFW held a public scoping meeting on the Commission's behalf during the NOP review period pursuant to the CEQA Guidelines section 15082, subdivision (c). The meeting was held from 1:00 P.M. to 3:00 P.M. on Friday, November 14, 2014 at CDFW's Wildlife Branch located at 1812 9th Street, Sacramento, CA 95811. The meeting was intended to solicit input from the public and interested public agencies regarding the nature and scope of environmental impacts to be addressed in the Draft ED. In addition to notice mailed to interested parties, scoping meeting information was posted on CDFW's website (www.wildlife.ca.gov) prior to the event to solicit attendance.

At the beginning of the meeting, staff made a brief presentation to provide an overview of the existing program, the legal background leading to this Draft ED, the objectives and range of information to be included in the Program, and the CEQA process generally. An interactive session followed where staff was available to receive comments, answer questions, and provide information about the Program. Written comments were accepted during the meeting, as well as during the 30-day scoping period which concluded on December 1, 2014.

During the scoping period, 50 comments from 45 unique individuals were received. These comments have been summarized, as well as included in their entirety, in a Scoping Report, which is included in this Draft ED as Appendix C. Written comments received during scoping are attached as Appendix F and the presentation materials are attached as Appendix E.

iii. Draft ED and Draft Regulations

The primary purpose of this Draft ED is to analyze and disclose the direct and reasonably foreseeable indirect physical environmental impacts that may occur as a result of the Proposed Program. As stated earlier, for the purposes of this Draft ED, the Proposed Program consists of the draft regulations included as Appendix A. The Initial Study (Appendix B) served to identify the related, potentially significant environmental impacts to be addressed in detail in the ED. The Initial Study also served to inform the Commission's development of the specific proposed amendments to the previous regulations consistent with Commission's statutory mandate to phase the transition as soon as practicable and not later than July 1, 2019. The Draft ED, as informed by the Initial Study and related public and agency input, provides analysis and disclosure of the potentially significant environmental impacts associated with phasing-in the nonlead ammunition requirement and, where such impacts are significant, potentially feasible mitigation measures and alternatives that substantially lessen or avoid such effects are identified and discussed.

iv. Public Review Pursuant to CEQA, the Commission's CRP regulations, and the APA

The Draft ED is currently undergoing CEQA public review for a minimum of 45 days. Consistent with CEQA, the Commission's Final ED will respond to comments received during the CEQA review period. As set forth above, the Final ED will inform the Commission's decision as to the Proposed Program.

Complementary to the public review requirements of CEQA generally, the Commission is complying with the public review requirements set forth in the Commission's CRP regulations and the APA. The Commission's CRP and APA public review process will begin subsequent to the start of the CEQA public review period, but the two will overlap. By completing the CEQA public review period earlier than completion of the APA public review period, the Commission will have a better opportunity to integrate the environmental analysis from the CEQA process into the Commission's final decision-making.

Consistent with the Commission's CRP, set forth in the California Code of Regulations, title 14, section 778 et seq., CDFW provided its recommendation to the Commission at its December 2014 meeting. Previously, the Commission's WRC unanimously advanced the CDFW's recommendation to the full Commission for consideration. At its December meeting, the Commission authorized publication of a notice of the Commission's intent to

amend Title 14 as proposed by CDFW. Pursuant to the Commission's regulations, recommendations received from any person other than CDFW shall be considered as a comment on, or counter proposal to, CDFW's proposal, and CDFW shall prepare a written response to any such recommendations. 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 of Title 24 of the California Code of Regulations.

In this case, CDFW anticipates that the Commission will go to notice with the Initial Statement of Reason shortly after the Draft ED is distributed for public review. Although the APA requires a 45-day public review period, the Commission intends to extend the APA review period to the close of the Commission's hearing on the Proposed Program, which hearing is anticipated to occur at the Commission's April 9, 2015 meeting. Thus, while the APA requires the Commission to provide a 45 day public review period, the Commission is, instead, providing the public more than two months of public review period for purposes of the APA.

In summary, whereas the public review period for purposes of CEQA will close on February 23, 2015, the public review period for purposes of the Commission's CRP and the APA is anticipated to close on April 9, 2015. Consistent with CEQA, the Final ED will include responses to all comments received by CDFW during the CEQA public review period. Although the Final ED will not respond to comments received after the close of the CEQA public review period, the Commission will consider any such comments, consistent with the APA, the Commission's CRP, and CEQA generally.

If the Commission takes action to adopt the Proposed Program or any alternative, the Commission's final action on the adoption of regulations shall include completion of the Final Statement of Reasons, which in turn includes the Commission's written response to significant environmental points raised during the evaluation process by other public agencies and members of the public, regardless of whether those comments were received prior to the close of the CEQA public review period. Responses to comments received prior to the final public meeting when the Commission takes its action (anticipated to be April 9th) 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.

Finally, notice of the Commission's adoption of a regulation pursuant to section 21080.5 of the Public Resources Code shall be submitted to the Office of Administrative Law (OAL), and, subject to OAL review, filed with the Secretary for Resources and the notice shall be available for public inspection and shall remain posted for a period of 30 days.

v. Final ED and Proposed Regulations

Written and oral comments received during the CEQA review period in response to the Draft ED will be addressed by CDFW on behalf of the Commission in a Response to Comments document which, together with the Draft ED and any related changes to the substantive discussion in the Draft ED, will constitute the Final ED. The Final ED, in turn, will inform the Commission's exercise of its discretion as a lead agency pursuant to CEQA and the Commission's CRP, in deciding whether or how to approve the Proposed Program as prescribed by section 3004.5. The Commission will process comments received after the close of the CEQA comment period consistent with the Commission's CRP, the APA, and CEQA generally. The Commission will consider any comments received to refine, as necessary, the proposed amendments to the regulations.

k. Organization of this Draft ED

This Draft ED contains the following components:

Executive Summary. A summary of the Proposed Program, a description of the issues of concern, Program alternatives, and a summary of the environmental impacts are provided in this chapter.

Chapter 1. Introduction. This chapter describes the purposes and organization of the Draft ED and its preparation, review, and certification process.

Chapter 2. Program Description. This section summarizes the Proposed Program, including a description of the Program purpose and objectives; a brief description of the area to be affected by the Program, and proposed updates to the regulations.

Chapter 3. Environmental Impacts. This chapter begins with an introductory section which identifies resource areas determined not to be affected by the Proposed Program. Chapter 3 includes four subchapters which describe existing environmental conditions and the Proposed Program's anticipated potentially significant environmental impacts. The following resource topics are addressed in Chapter 3:

3.1 Biological Resources

3.2 Hazards and Hazardous Materials

3.3 Hydrology (Water Quality)

3.4 Recreation

Chapter 4. Other Statutory Considerations. Chapter 4 addresses the Proposed Program's potential to contribute to cumulative impacts. Chapter 4 outlines the Proposed Program's potential to induce growth; and identifies significant, irreversible environmental changes resulting from the Program.

Chapter 5. Alternatives. Chapter 5 describes the process through which alternatives to the Proposed Program were developed and screened; evaluates their likely environmental impacts; and identifies the environmentally superior alternative.

Chapter 6. Report Preparation. This chapter lists the individuals involved in preparing this Draft ED.

Chapter 7. References. This chapter provides a bibliography of printed references, web sites, and personal communications used in preparing this Draft ED.

Appendices.

Appendix A: Proposed Regulatory Language

Appendix B: Notice of Preparation and Initial Study Checklist

Appendix C: Scoping Report

Appendix D: Scoping Meeting Notice

Appendix E: Materials Provided During Scoping Meeting

Appendix F: Written Comments Received During Scoping

Appendix G: Standardized Regulatory Impact Assessment

Appendix H: December 31, 2014 Letter from California Department of Finance

I. Impact Terminology

This Draft ED uses the following terminology to describe environmental effects of the Proposed Program.

- A finding of no impact is made when the analysis concludes that the Program would not affect the particular environmental resource or issue.
- An impact is considered less than significant if the analysis concludes that there would be no substantial adverse change in the environment and that no mitigation is needed.
- An impact is considered significant or potentially significant if the analysis concludes that there could be a substantial adverse effect on the environment.
- An impact is considered significant and unavoidable if the analysis concludes that there could be a substantial adverse effect on the environment and no feasible mitigation measures are available to reduce the impact to a less-than-significant level.
- An impact is considered beneficial if the analysis concludes that there would be a positive change in the environment.
- Mitigation refers to specific measures or activities adopted to avoid an impact, reduce its severity, or compensate for it.

- A cumulative impact can result when a change in the environment results from the incremental impact of a project when added to other related past, present, or reasonably foreseeable future projects. Significant cumulative impacts may result from individually minor but collectively significant projects. The cumulative impacts analysis in this Draft ED focuses on whether the Proposed Program's incremental contribution to other impacts caused by past, present, or probable future projects is cumulatively considerable (i.e., significant).

m. Submittal of Comments Pursuant to CEQA

On behalf of the Commission, CDFW is now circulating this Draft ED for a CEQA review and comment period which will end on February 23, 2015. The purpose of public circulation is to provide agencies and interested individuals with the opportunity to comment on or express concerns regarding the contents of the Draft ED. For those interested, written comments or questions concerning this Draft ED should be submitted within this review period and directed to the name and address listed below.

Submittal of written comments via e-mail (Microsoft Word format) would be greatly appreciated.

California Department of Fish and Wildlife
Attn: Craig Stowers
Phasing of Nonlead Ammunition Requirement
Draft ED Comments
1812 9th Street
Sacramento, CA 95811
Email: Wildlifemgmt@wildlife.ca.gov

All documents mentioned herein or related to this Program can be reviewed online at the Program Website (<https://www.dfg.ca.gov/wildlife/hunting/lead-free/>).

Written comments received in response to the Draft ED during the public review period will be addressed in a new Response to Comments chapter of the Final ED.

Chapter 2: PROGRAM DESCRIPTION

a. Introduction

i. Program Purpose

The purpose of the Proposed Program is to establish and implement regulations implementing as soon as practicable the requirement that nonlead ammunition be used when taking wildlife with any firearm, consistent with the requirements of Fish and Game Code section 3004.5.

ii. Program Objectives

The objectives of the Proposed Program are as follows:

- Promulgate new regulation and amendments to the Commission's previous regulations as necessary to effectively implement Fish and Game Code section 3004.5 requiring the Commission to require nonlead ammunition as soon as practicable and not later than the July 1, 2019 date on which the requirement becomes effective statewide;
- Fulfill the Commission's responsibilities to make complex public policy and biological decisions on behalf of the people of California and to regulate the taking or possession of birds, mammals, fish, amphibian, and reptiles to the extent and in the manner prescribed in chapter 2, article 1 of the Fish and Game Code;
- Facilitate the phase-in of nonlead ammunition in the manner that is least disruptive for hunters; and
- Ensure that the development of the regulations considers economic impacts, practical considerations for implementation, and technological capabilities existing at the time of implementation, doing so in a manner that can be administered and enforced by CDFW, consistent with CDFW's mission to manage California's diverse fish, wildlife, and plant resources, and the habitats upon which they depend, for their ecological values and for their use and enjoyment by the public.

iii. Program Area

The scope of the Proposed Program is statewide. For many species, hunting zones are distributed throughout the state (e.g., deer); however, local, state, or federal restrictions will dictate whether hunting or use of a firearm is allowed in particular areas. As described in more detail in Chapter 1, Section d (Baseline), most hunting activity occurs on public lands administered by the Bureau of Land Management and U.S. Forest Service, private lands such as ranches and hunting clubs, CDFW wildlife areas and ecological reserves, USFWS wildlife refuges, and Department of Defense military bases. Hunting also occurs on private lands depending on

the land owners interests and desires. No mechanism is available to track the number or acreage of private properties that may be used for hunting.

Take for depredation and nuisance species generally occurs on those private lands where agricultural production occurs (farming and ranching); and at the urban/wildland interface where wildland is adjacent to developed areas creating an attraction for wildlife for food, cover, and water (e.g., Tahoe Basin or the foothills of Los Angeles). Areas of expansive wildland, remote areas, and most of the public land areas are infrequent depredation/nuisance areas.

b. Program Description

The Proposed Program, as analyzed in this Draft ED, is the phasing-in of the requirement to use nonlead ammunition for the take of wildlife, as practicable and no later than July 1, 2019. Specifically, the Proposed Program for purposes of CEQA is the Commission's proposed addition of section 250.1 to title 14, amendment of sections 311, 353, 464, 465, 475, and 485, as well as repeal of section 355 of title 14 of the California Code of Regulations.

By way of background, ammunition falls into several broad categories including centerfire, rimfire, shotshells, and balls or sabots used in muzzleloading weapons. Centerfire ammunition is available in a variety of sizes (calibers) for both rifles and pistols and is most commonly used for the take of big game animals. Rimfire ammunition is available in smaller sizes, primarily .22 and .17 caliber, and is used most commonly for the take of small game mammals and the control of nongame species such as ground squirrels that are considered pest species. Shotgun ammunition comes in a variety of gauges and a range of shot or pellet sizes. Shotshells are most commonly used for waterfowl and upland game birds, although larger shot sizes (size 0 or 00 buckshot) and shotgun "slugs" may be used for the take of big game species. Balls and sabots are typically used for the take of big game species using muzzleloading rifles.

The proposed regulations' phasing reflects the relative availability (by both type and volume) of nonlead rifle and shotgun ammunition. Nonlead shotgun ammunition has been required for the take of ducks and geese nationwide since 1991 and nonlead shotshells in waterfowl sizes are widely available. These shells are suitable for the take of larger upland game birds such as pheasants, grouse, band-tailed pigeons and wild turkeys. They may also be effective for the take of small game mammals, furbearing mammals, and nongame species. Nonlead shotgun shells in smaller shot sizes for dove, quail, and snipe are produced, but are currently not available in the volume necessary to supply the more than 170,000 quail and dove hunters in the state. Nonlead centerfire rifle ammunition is available in the more commonly used big game calibers such as .270, .30-06, and .308. Retail supplies of these common calibers may experience shortages due to the demand of all hunters needing to use nonlead ammunition for the take of wildlife as July 1, 2019. (Southwick and Associates, 2014.) However, nonlead ammunition has been required for the take of big game mammals in the condor range since 2008 and the volume of nonlead ammunition has been sufficient to supply the 48,000 deer hunters within the condor range.

The Proposed Program uses the following phase-in of nonlead ammunition:

Phase 1

Effective July 1, 2015, nonlead ammunition will be required when taking all wildlife on state Wildlife Areas and Ecological Reserves. These CDFW lands constitute approximately 1 million acres in California, with high ecological values and some of these areas are popular with hunters. In addition, nonlead ammunition will be required for hunters taking Nelson bighorn sheep in California's desert areas. This requirement will affect a small number of hunters; in 2014 only 14 tags were issued for bighorn sheep statewide. A similar number is anticipated for the 2015 season.

Phase 2

Effective July 1, 2016, nonlead ammunition will be required when taking upland game birds with a shotgun, except for dove, quail, and snipe, and any game birds taken under the authority of a licensed game bird club as provided in sections 600 and 600.4, title 14, California Code of Regulations. In addition, nonlead ammunition will be required for the take of resident small game mammals, furbearing mammals, nongame mammals, nongame birds, and any wildlife for depredation purposes, with a shotgun statewide. However, in light of the uncertainty regarding the retail availability of nonlead centerfire and rimfire ammunition in smaller calibers, it will still be legal to take small game, furbearing, and nongame mammals, as well as nongame birds and wildlife for depredation purposes with traditional lead rimfire and centerfire ammunition during phase 2.

Phase 3

Pursuant to Fish and Game Code section 3004.5, effective July 1, 2019, only nonlead ammunition may be used when taking any wildlife with a firearm for any purpose in California.

i. Definition of "Practicability"

In developing the proposed rulemaking, the Commission considered under what circumstances requiring the use of nonlead ammunition prior to July 1, 2019 would be practicable, as that term is used in the authorizing statute. This is guided by, among other things the language of the statute itself, the Legislature's findings, as well as the Governor's signing statement. Notably, the statute includes several provisions that suggest the Legislature intended the requirement to be implemented swiftly and before July 1, 2019. For example, Fish and Game Code section 3004.5, subdivisions (b) and (i), each underscore that, setting aside any earlier phase-in of the requirement, no later than July 1, 2019, nonlead ammunition shall be required when taking all wildlife. Similarly, section 3004.5, subdivision (i) mandates, rather than permits, the Commission to implement any of the sections of the Fish and Game Code section 3004.5's requirements in advance if they can be implemented, in whole or in part, practicably.

The Legislature's findings similarly underscored the intent of avoiding undue delay:

Lead is a potent neurotoxin, for which no safe exposure level exists 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.

The findings also note that:

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.

This sense of urgency as to the environmental purpose for requiring nonlead ammunition is, however, counterbalanced by discussion of the need to minimize disruptions to hunting from the relative unavailability and increased cost of nonlead ammunition. For example, although the Legislature's findings noted that varieties of nonlead ammunition are readily available and studies have shown that nonlead ammunition performs as well as, or better than, lead-based ammunition, Fish and Game Code section 3004.5 includes subdivisions related to the cost and availability of nonlead ammunition that inform the meaning of "practicable." Subdivision (d)(1), for example, conveys those concerns through the provision to hunters of nonlead ammunition at no or reduced charge, to the extent that funding is available. Subdivision (j)(1), in turn, provides that the prohibition on lead ammunition shall be suspended for a specific hunting season and caliber upon a finding by CDFW's Director that nonlead ammunition of a specific caliber is not commercially available from any manufacturer because of federal prohibition relating to armor-piercing ammunition.

The Governor's signing statement noted that the availability and cost of nonlead ammunition should guide the phasing-in of the requirement prior to its statutory "not later than" effective date of July 2019. Thus, Governor Brown directed the Department to work tirelessly with the Commission and its constituents to achieve the least disruptive phase-in, including incentives for hunters to make this transition. (Governor's signing message to Assem. On Assem. Bill No. 711 (Oct. 11, 2013).) Governor Brown also noted that:

"I am able to sign this bill because of amendments made to it that better protect the hunting community. The bill in its original form did not contain any such protections. Even though alternatives to lead ammunition exist today, it is notable that the bill took the extra precaution to authorize the Director of Fish and Wildlife to suspend the statewide ban on lead ammunition in the event that the federal government prohibits nonlead ammunition because it is considered armor piercing.

In addition, the bill: (a) allows an additional year for the California Fish and Game Commission to promulgate an implementing rule; (b) pushes back the date for full ban almost five years to July 2019 so that hunters have more time to transition; (c) requires adoption of already approved nontoxic shotgun ammunition; and, (d) permits trace amounts of lead in certified nonlead ammunition to avoid enforcement and compliance concerns.”

Against this backdrop, which emphasizes both the availability and cost of nonlead ammunition, CDFW believes section 3004.5 is intended to require the use of nonlead ammunition in advance of July 1, 2019, as soon as it is practicable, which for the purposes of section 3004.5 is determined by the retail availability of nonlead ammunition. This approach is consistent with the concerns expressed in the Governor’s signing message requiring the implementation of AB 711 be the least disruptive to hunters as possible.

ii. Development of Regulations

On behalf of the Commission, CDFW developed the proposed addition of section 250.1 to title 14, amendment of sections 311, 353, 464, 465, 475, and 485, as well as repeal of section 355 of title 14 of the California Code of Regulations to ensure that the nonlead ammunition requirement would be implemented as soon as practicable. The development of the proposed additions, amendments, and deletions, included analysis of the availability of nonlead ammunition, the cost of nonlead ammunition, the effects of nonlead ammunition on wildlife, and input from interested parties.

Also on behalf of the Commission, CDFW conducted an extensive, pre-notice public outreach effort between January and October of 2014. At the January 15, 2014, meeting of the Commission’s WRC in Van Nuys, CDFW introduced a “starting point” proposal that outlined a potential four-year phase-in for nonlead ammunition. The starting point proposal was based on CDFW’s understanding of the current availability of nonlead ammunition and became the focal point for a series of public meetings throughout the state from Susanville to San Diego. (See Table 1, *supra*.) In addition to public workshops, on the Commission’s behalf, CDFW also sought public input at international sporting goods shows and at meetings of the National Wild Turkey Federation in Vacaville, Ducks Unlimited in Corning, and the Director’s Hunting Advisory Committee in Sacramento.

CDFW presented an update of its outreach efforts as well as planned future efforts at the Commission’s WRC meeting in Sacramento on July 28, 2014. At this meeting, the Commission received testimony by Dr. Vernon G. Thomas of the University of Guelph in Canada on behalf of Audubon California, Defenders of Wildlife and the Humane Society of the United States, on his survey of the current availability of nonlead ammunition in California.

CDFW presented a public review draft of the proposed regulatory text at the Commission’s WRC meeting in Sacramento on September 17, 2014. At this meeting, the Commission received testimony by Mr. Scott Scherbinski of Pinnacles National Park and Mr. Ben Smith

of the Institute for Wildlife Studies, on reducing the impact of lead ammunition in California. Testimony was also received from Mr. Rob Southwick of Southwick Associates on behalf of the National Shooting Sports Foundation on the potential effects of the nonlead ammunition requirement on hunting participation in California and associated economic measures. At the September meeting, the Commission's WRC approved advancing CDFW's proposal to the full Commission.

In addition to public workshops and meetings, CDFW contacted representatives of the ammunition manufacturing and distribution sectors for their input on the proposed phasing. A meeting with ammunition retailers was held at the Yolo Basin Wildlife Area on September 3, 2014. Letters requesting input from major ammunition manufacturers were sent on August 26, 2014, to Barnes Bullets, Inc., Federal Premium Ammunition, Hornady Manufacturing, Kent Cartridge, Magtech Ammunition Company, Inc., Nosler, Remington Arms Company, LLC, Weatherby, Inc., and Winchester Ammunition. To date, CDFW has received no response or input from any individual manufacturer despite CDFW's outreach.

iii. Draft Proposed Regulations

The proposed addition of section 250.1 to title 14, amendment of sections 311, 353, 464, 465, 475, and 485, and also repeal of section 355 of title 14 of the California Code of Regulations are set forth in full in Appendix A to this Draft ED. In summary, the addition of section 250.1 includes the existing nonlead requirements that apply in the California condor range and new requirements to phase-in statewide nonlead mandate pursuant to section 3004.5 of the Fish and Game Code. Amendments of sections 311, 353, 464, 455, 465, 475, and 485, as well as the repeal of section 355, add cross references to the new section 250.1, remove redundancies that would otherwise exist with the new section 250.1, and align and simplify the title 14 regulations.

Chapter 3: ENVIRONMENTAL IMPACTS

a. Introduction

Although this Draft ED is prepared pursuant to the Commission's CRP as a functional equivalent document, the Draft ED employs the organization of an EIR for its impact analysis. Thus, Chapter 3 of this Draft ED contains individual subchapters that describe the environmental resources and potential environmental impacts of the Proposed Program. For each resource area discussed, this Draft ED describes the existing setting and background information for the resource to help the reader understand the conditions that could be affected by the Program. In addition, each subchapter includes a discussion of the criteria used in determining the significance levels of the Program's environmental impacts. Finally, each subchapter provides a description of environmental impacts and makes a significance conclusion relative to the significance criteria.

b. Significance of Environmental Impacts

According to CEQA, an EIR should define the threshold of significance and explain the criteria used to determine whether an impact is above or below that threshold. Employing the convention of an EIR, this Draft ED identifies significance criteria for each environmental category to determine whether the Program's implementation would result in a significant environmental impact when evaluated against the environmental setting/baseline conditions. The significance criteria vary depending on the environmental category.

Where appropriate, this Draft ED has used custom significance criteria to assist in better evaluating impacts given the characteristics of the Program, and to bring as much specificity and/or clarity to the impact discussions as possible. It is within the Commission's discretion to use significance criteria which deviate from those contained in the CEQA Guidelines' Appendix G checklist due to its inherent authority under OPR's directive that significance determinations should be "based to the extent possible on scientific and factual data." (CEQA Guidelines, § 15064, subd. (b).) "Such thresholds can be drawn from existing environmental standards, such as other statutes or regulations. "[A] lead agency's use of existing environmental standards in determining the significance of a project's environmental impacts is an effective means of promoting consistency in significance determinations and integrating CEQA environmental review activities with other environmental program planning and resolution.'" (*Protect the Historic Amador Waterways v. Amador Water Agency* (2004) 116 Cal. App. 4th 1099, 1107, quoting *Communities for a Better Environment v. California Resources Agency* (2002) 103 Cal. App. 4th 98, 111.) "In preparing an EIR, the agency must consider and resolve every fair argument that can be made about the possible significant environmental effects of a project, irrespective of whether an established threshold of significance has been met with respect to any given effect." (*Protect the Historic Amador Waterways, supra*, 116 Cal. App. 4th. at p. 1109.) Thus, under certain circumstances, such as the ones involved in the Proposed Program and pursuant to the Commission's CRP, the Commission has the discretion to deviate from the

CEQA Guidelines' Appendix G checklist and develop custom thresholds that more accurately consider the relevant scientific and factual data involved in the Proposed Program.

In determining significance, the analysis assumes compliance with the Commission's proposed regulations. In other words, ammunition requirements that are explicitly included in the proposed regulations, and therefore fall under CDFW's enforcement authority, were assumed to be complied with in the vast majority of cases because any enforcement activities would be within CDFW's jurisdiction and authority to implement.

c. Sections Eliminated from Further Analysis

Several CEQA checklist resource areas have been eliminated from further analysis based on the nature and scope of the Proposed Program. The Initial Study concluded that the Commission's adoption of the Proposed Program would result in "no impact" to the environment in the following resource areas: aesthetics, agriculture and forest resources, air quality, cultural resources, geology and soils, greenhouse gas emissions, hydrology and water quality, public services, transportation/traffic, utilities and service systems, and the mandatory findings of significance. However, during the scoping period, CDFW received numerous comments expressing concern that the Commission's adoption of the Proposed Program could affect water quality. As a result of the comments received during the scoping period, this Draft ED considers the Proposed Program's impact to water quality.

The remaining impact areas, which are discussed below, include Biological Resources, Hazards and Hazardous Material, Hydrology (Water Quality) and Recreation. Note that socioeconomic effects are not considered environmental impacts under CEQA, unless they contribute to a physical impact. The impact discussion under each individual resource topic cites socioeconomic information/effects as appropriate where such a nexus exists.

d. Biological Resources

i. Introduction

This section discusses the potential for the Proposed Program to affect biological resources. Specifically, this section: (1) discusses state and federal regulations relevant to the biological resources affected by the Proposed Program; (2) provides an overview of the existing environmental setting throughout the state; and (3) identifies wildlife and plant species (including special-status species) potentially affected by the Proposed Program, and then makes findings regarding the significance of the Proposed Program's impacts on those biological resources.

ii. Regulatory Setting

This section describes federal and state regulations, laws, permits, and policies that are relevant to protection of biological resources within the Program Area. A general description of local policies and ordinances that may be applicable to the use of nonlead ammunition is also provided.

Special-Status Species Definitions

For the purposes of this Draft ED, special-status plant and wildlife species refers to those species that meet one or more of the following criteria: species that are listed as threatened or endangered under the Endangered Species Act (ESA) (50 C.F.R. § 17.12 for listed plants, 50 C.F.R. § 17.11 for listed animals); species that are candidates for possible future listing as threatened or endangered under ESA (76 Fed. Reg. 66370); species that are listed or proposed for listing by the State of California as threatened or endangered under the California Endangered Species Act (CESA) (Cal. Code Regs., tit. 14, § 670.5); plants listed as rare under the California Native Plant Protection Act of 1977 (Fish & G. Code, § 1900 et seq.); plants considered by the California Native Plant Society (CNPS) to be “rare, threatened, or endangered in California”; and species that meet the definitions of rare or endangered under CEQA (CEQA Guidelines, § 15380).

Clean Water Act — Section 404

The Clean Water Act (CWA) is the primary federal law that protects the quality of the nation’s surface waters, including lakes, rivers, and coastal wetlands. (33 U.S.C. § 1251 et seq.) CWA section 404 (33 U.S.C. § 1344; hereinafter section 404) regulates the discharge of dredged and fill materials into waters of the United States (waters of the U.S.), which include all navigable waters, their tributaries, and some isolated waters, as well as some wetlands adjacent to the aforementioned waters. (33 C.F.R. § 328.3.)

Areas typically not considered to be jurisdictional waters include non-tidal drainage and irrigation ditches excavated on dry land, artificially irrigated areas, artificial lakes or ponds used for irrigation or stock watering, small artificial water bodies such as swimming pools, and water-filled depressions. (33 C.F.R. § 328.) Areas meeting the regulatory definition of waters of the U.S. are subject to the jurisdiction of the U.S. Army Corps of Engineers (USACE) under provisions of CWA section 404. Construction activities involving placement of fill into jurisdictional waters of the U.S. are regulated by the USACE through permit requirements. No USACE permit is effective in the absence of state water quality certification pursuant to section 401 of the CWA.

The ESA

The federal ESA (16 U.S.C. §§ 1531–1544) provides for conservation of species that are endangered or threatened throughout all or a significant portion of their range, as well as the protection of habitats on which they depend. USFWS and National Marine Fisheries Service (NMFS) share responsibility for implementing the ESA. In general, USFWS manages land and freshwater species, whereas NMFS manages marine and anadromous species. As defined by section 3 of the ESA, “endangered” refers to species that are “in danger of extinction within the foreseeable future throughout all or a significant portion of its range,” whereas “threatened” refers to “those animals and plants likely to become endangered within the foreseeable future throughout all or a significant portion of their ranges.” (16 U.S.C. § 1532.)

Endangered Species Act Section 9

Under the ESA, it is illegal for any person, private entity, or government agency to take endangered species without federal authorization. Take of most threatened species is similarly prohibited. Take is defined to mean harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in such conduct. (16 U.S.C. § 1532(19).) Harm is defined to mean an act that actually kills or injures fish or wildlife. (50 C.F.R. § 17.3.) Take may include significant habitat modification or degradation that actually kills or injures fish or wildlife by significantly impairing essential behavioral patterns, including breeding, spawning, rearing, migrating, feeding, or sheltering. The incidental take of listed species can be authorized under section 7 (16 U.S.C. § 1536) or section 10 (16 U.S.C. § 1539) of the ESA.

Endangered Species Act Section 7

ESA section 7 requires federal agencies to consult with USFWS or NMFS, or both, before performing any action (e.g., funding a program or issuing a permit) to ensure that federal actions do not jeopardize the continued existence of a species or destroy or adversely modify critical habitat. Authorization to take an endangered or threatened species can be obtained through section 7 consultation. (16 U.S.C. § 1536.) The USFWS and/or NMFS may issue a Biological Opinion (BO) with an incidental take statement to the federal agency issuing a permit or approval for a proposed project. The federal consulting agency then incorporates the BO and incidental take statement into any authorization or permits.

Executive Orders

EO 11990: Protection of Wetlands

EO 11990 directs federal agencies to provide leadership and take action to minimize the destruction, loss, or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands in implementing civil works.

State Laws, Regulations, and Policies

California Environmental Quality Act—Sections 15065 and 15380

CEQA Guidelines, section 15065 requires that a lead agency shall determine whether a project may have a significant effect on the environment and requires an EIR to be prepared for the project if there is substantial evidence, in light of the whole record, that the project has the potential to substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, and/or substantially reduce the number or restrict the range of an endangered, rare or threatened species. CEQA Guidelines, section 15380 defines the terms “species,” “endangered,” “rare” and “threatened” as they pertain to CEQA. Section 15380 also provides a greater level of consideration for state-listed or federally-listed species, and for any species that can be shown to meet the criteria for listing, but which has not yet been listed. The criteria for considering a species endangered, rare, or threatened under CEQA are as follows:

- When its survival and reproduction in the wild are in immediate jeopardy from one or more causes, including loss of habitat, change in habitat, over exploitation, predation, competition, disease, or other factors; or
- Although not presently threatened with extinction, the species is existing in such small numbers throughout all or a significant portion of its range that it may become endangered if its environment worsens; or
- The species is likely to become endangered within the foreseeable future throughout all or a significant portion of its range and may be considered “threatened” as defined in the ESA.

Species that meet the criteria listed above are often considered Species of Special Concern by CDFW. “Species of Special Concern” is an administrative designation and carries no formal legal status. Generally, Species of Special Concern should be included in an analysis of project impacts if they can be shown to meet the criteria of sensitivity outlined in section 15380 of the CEQA Guidelines. That said, some older lists of Species of Special Concern were not developed using criteria relevant to CEQA, and the information used in generating those lists is out of date. Therefore, the current circumstances of each unlisted Species of Special Concern must be considered in the context of section 15380 criteria and not automatically assumed to be rare, threatened or endangered.

California Fish and Game Commission

The California Constitution establishes the Commission. (Cal. Const., art. IV, § 20.) The Fish and Game Code delegates the power to the Commission to regulate the taking or possession of birds, mammals, fish, amphibian and reptiles. (Fish & G. Code, § 200.) The Commission has adopted regulations setting forth the manner and method of the take of certain fish and wildlife in the California Code of Regulations, Title 14. Likewise, the Commission has exclusive statutory authority under the Fish and Game Code to designate species as endangered or threatened under CESA. (Fish & G. Code, § 2070.) Under the Commission’s general regulatory powers function, it establishes seasons, bag limits, and methods of take for game animals and sport fish (i.e., hunting and fishing regulations).

California Fish and Game Code—Species Protection

The Fish and Game Code establishes CDFW (Fish & G. Code, § 700) and states that the fish and wildlife resources of the state are held in trust for the people of the state by and through CDFW. (Fish & G. Code, § 711.7, subd. (a).) Fish and Game Code section 1802 states that CDFW has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitat necessary for biologically sustainable populations of those species. All licenses, permits, tag reservations, and other entitlements for the take of fish and game authorized by the Fish and Game Code are prepared and issued by CDFW. (Fish & G. Code, § 1050, subd. (a).) Provisions of the Fish and Game Code establish special protection to certain enumerated species, such as section 5515, which lists fully protected fish species.

California Fish and Game Code—California Endangered Species Act

CESA (Fish & G. Code, § 2050 et seq.) is intended to conserve, protect, restore, and enhance species designated as endangered or threatened, and their habitat. (Fish & G. Code, § 2052.) The Commission has exclusive statutory authority to designate species as endangered or threatened under CESA. (California Constitution, article IV, § 20, subd. (b); Fish & G. Code, § 2070.) Animal species designated as endangered or threatened under CESA are listed in California Code of Regulations, Title 14, section 670.5. Plant species designated as endangered or threatened under CESA, or designated as a rare plant species under the California Native Plant Protection Act (Fish & G. Code, § 1900 et seq.), are listed in California Code of Regulations, title 14, section 670.2.

CESA directs all state agencies, boards, and commissions to seek to conserve endangered and threatened species, and to utilize their authority in furtherance of that policy. (Fish & G. Code, § 2055.) For purposes of CESA, "conserve," "conserving," and "conservation" mean to implement all methods and procedures necessary to increase the abundance of any endangered or threatened species to levels at which the protections provided by CESA are no longer necessary. These methods and procedures include, but are not limited to, all activities associated with scientific resources management, such as research; census; law enforcement; habitat acquisition; restoration and maintenance; propagation; live trapping; and transplantation; and, in the extraordinary case where population pressures within a given ecosystem cannot be otherwise relieved, may include regulated taking. (Fish & G. Code, § 2061.)

CESA emphasizes that state agencies should not approve projects as proposed that would jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of habitat essential to the continued existence of those species, if there are reasonable and prudent alternatives available consistent with conserving the species or its habitat that would prevent jeopardy. (Fish & G. Code, § 2053.) Species designated as endangered or threatened under CESA, and species designated as candidates for listing or delisting under CESA, are subject to what is commonly known as CESA's "take" prohibition.

In general, this prohibition provides that no person shall import into the state, or export out of the state, or take, possess, purchase, or sell within the state (or attempt to do any of those acts), any species, or any part or product thereof, designated by the Commission as protected under CESA, except as otherwise provided by law. (Fish & G. Code, §§ 2080, 2085; see also Cal. Code Regs., tit. 14, § 783.1.) "Take" is defined specifically in the Fish and Game Code to mean "hunt, pursue, catch, capture, or kill," or an attempt to do any such act; violations of CESA's take prohibition are criminal misdemeanors under state law. (Fish & G. Code, §§ 86, 12000; see also *Department of Fish and Game v. Anderson-Cottonwood Irrigation District* (1992) 8 Cal. App. 4th 1554.) Unlike ESA, CESA applies the take prohibitions to species under petition for listing (candidates) in addition to listed species. Section 2081 of the Fish and Game Code expressly allows CDFW to authorize, by permit, the incidental take of endangered, threatened, and candidate species if all of certain conditions are met.

Local Laws, Regulations and Policies

Relevant local laws, regulations and policies generally affect hunting with firearms through shooting safety restrictions rather than through the regulation of biological resources. The discharge of deadly weapons (including firearms and archery equipment used for hunting purposes) is generally prohibited within the city limits of most, if not all, cities within California. Cities may, through their local ordinance and use permit process, authorize the discharge of these weapons at approved firing ranges (usually indoor for firearms and limited to handguns and small caliber rifles). Ranges at which rifles and/or shotguns are typically used may be found on county, state, or federal lands; private ranges usually operate under the authority of a county use permit and are subject to all other relevant state and federal laws/regulations.

Although hunting seasons are authorized on a state-wide basis, local ordinances prohibiting the discharge of firearms effectively prohibits hunting activities within city limits and on county properties deemed not suitable for hunting. Additionally, private property owners have the authority to prohibit access to, as well as hunting on, their property, regardless of authorized hunting seasons and zones established by the Commission.

iii. Environmental Setting

The Baseline and Program Area discussions, Chapter 1, Section d, and Chapter 2, Section a.iii. *supra*, provide the environmental setting for the Proposed Program, which setting, for many species, comprises zones distributed throughout the state.

iv. Impact Analysis

This section sets forth the methodology used for determining impacts on biological resources, and the criteria used for determining a significant impact on biological resources. A less than significant impact generally refers to a situation where there is a measureable impact, but the impact is not likely to result in an adverse population-level effect on a particular species, or a wide-spread or long-lasting adverse effect on a natural community. If an impact remains "potentially significant" following the evaluation, then mitigation strategies are discussed and considered. Any impact that remains significant even after mitigation is considered significant and unavoidable.

The impact analyses and determinations contained in the following sections are based on CDFW license and tag sale statistics, harvest records for the various species programs, and GIS information available for analysis, as well as research regarding the impact of lead on ecosystems and organisms.

BIO-1: Impacts to species from reduced lead and increased other metals (primarily copper) in the environment.

Beneficial and less than significant impacts may occur to species identified as a candidate, sensitive, or otherwise special status as a result of the proposed action. Whereas hunting activity is managed by regulations for specific hunt programs, the proposed action is limited to the phasing-in, as practicable, of a requirement to use nonlead ammunition that will become

effective, regardless of the proposed phase-in, no later than July 1, 2019. Lead has long been known to have an adverse impact on a wide range of organisms. (EPA, 2011.) As lead is found in varying amounts in all metals and has been deposited into the environment for many years through a variety of sources, lead is also released into the environment from big-game, upland game, nongame mammal hunting, and the other minor cases in which take of wildlife with lead ammunition occurs.

Lead poisoning from ingesting spent shot has been documented as a cause of mortality in waterfowl for over a century, culminating in the nationwide requirement for nonlead ammunition for waterfowl hunting in 1991. More recently, lead poisoning has also been documented in terrestrial birds, primarily species exposed while feeding in areas where spent shot has been deposited, and birds of prey (raptors) exposed while ingesting bullet fragments or pellets when scavenging from carcasses of animals killed with lead ammunition. (Fisher et al., 2006.) Upland game species such as pheasants, dove, quail, grouse and wild turkeys have been poisoned by eating spent shot mistaken for seeds or grit, while special status raptors such as bald and golden eagles, peregrine falcons, and California condors have been poisoned from lead shot or bullet fragments ingested from prey or scavenged carcasses. (Pain et al., 2009.) Incidences of lead poisoning in bald and golden eagles in the Pacific Northwest have been shown to correspond with the period following deer and elk hunting seasons and also with the subsequent control of nongame species such as coyotes during the winter. (Stauber et al., 2010.) In a study of mortality factors in free-ranging California condors between 1992 and 2009, lead toxicosis was found to be the most important cause of death for juvenile and adult birds. (Rideout et al., 2012.)

Although the benefit of removing ammunition as a source of lead in the environment is difficult to quantify, decreasing the amount of lead deposited into the environment from any source is expected to be beneficial for wildlife species, including special status raptors. Studies of golden eagles and turkey vultures within the California condor range showed significant reductions in blood lead levels only one year after implementation of the 2008 nonlead ammunition requirement. (Kelly et al., 2011.) Blood lead levels in California condors have not shown similar reductions following the requirement, possibly because the birds are becoming more independent and foraging over a wider area. (Kelly et al., 2014b.) By reducing exposure to lead ammunition statewide, it is expected that implementation of the proposed action will ultimately reduce the need to capture and treat California condors for lead poisoning, as well as a reduction in lead poisoning mortality events for other opportunistic or scavenger species which may feed on carcasses and/or gut piles contaminated with lead particles and left in the field by hunters.

The anticipated increase in use of copper and other metals for hunting of game will result in additional levels of these metals being left in the field. CDFW is unaware of any scientifically based information to indicate that these metals in the field have had, or will have, any detectable effect on the environment, which is why they are proposed as alternatives to lead ammunition. Copper toxicity is addressed in the hydrology (water quality) section of this Draft ED, but as the majority of hunting uses in California affected by this program are terrestrial

environments, and accumulation of metal will likely be negligible on the majority of the millions of acres of land where hunting occurs, no impact is anticipated.

Thus, as compared to existing conditions, the Proposed Program is expected to benefit wildlife species, including listed and special status species such as bald and golden eagles, by reducing the potential ingestion of lead from carcasses and gut piles from animals killed with lead ammunition.

As compared to implementation of the statewide requirement that becomes effective not later than July 1, 2019 by statute (i.e., “no project” alternative), only Phases 1 and 2 of the Proposed Program result in any impact, and those impacts are short-term. Nonetheless, although short-term, they provide a beneficial environmental impact.

BIO-2: Impacts to ecosystems if reduced hunting activity occurs and that reduction contributes to overpopulation.

The primary activity affecting ecosystems as it relates to this analysis is hunting of game species with lead ammunition, and to a minor level, other take of wildlife (i.e., take of wildlife with a firearm for depredation, nuisance, scientific collecting, and public safety) using lead ammunition. Most of California’s ecosystems where active management of land, plant communities, and/or wildlife occurs, are altered from what some might consider a “natural” functioning system. This is not to say that some aspects of ecosystem function cannot, or are not, operating in a near natural state or condition as would be expected in the absence of management; however, they are managed systems influenced by human activity.

Public input included the concern that the nonlead requirement will decrease hunting activity, which would reduce take of wildlife, which, in turn, would lead to potential problems of wildlife overpopulation in the absence of hunting. However, as described below, substantial evidence supports the conclusion that significant problems of wildlife over-population will not occur. The Commission has historically, and continues to, regulate hunting conservatively such that there are no game species for which hunting levels limit or control their population. The foundation of game management emphasizes a “harvestable surplus” (Leopold, 1933) of managed species as a renewable resource. Consequently, populations of game species are regulated by the environment they experience during their life history with hunting representing one of many mortality factors and being compensated for by annual recruitment of new individuals into a population; or being completely irrelevant to annual population fluctuations for some species.

The species most likely to result in localized overpopulations in the absence of hunting is elk that inhabit areas where expansion into wildland is limited or restricted (e.g., Grizzly Island or the Owens Valley). Were such overpopulations to occur, translocation or depredation hunts could be used to alleviate the problem and no significant change in elk numbers is anticipated to occur. Additionally, wild pigs could increase on public lands if there were a significant decline in hunting activity. This would be considered a negative consequence for the ecosystem because wild pigs are a non-native species and could be addressed through other mechanisms to allow wild pigs to be killed or trapped. As most of the wild pig populations in

California already exist in areas where lead ammunition is prohibited (condor range), no significant change in wild pig numbers is anticipated to occur as a consequence of the lead ammunition prohibition.

In addition, as compared to the statewide implementation of the nonlead requirement that will occur by statute not later than July 1, 2019 (i.e., the “no project” alternative), impacts associated from the Proposed Program’s phase-in of nonlead ammunition will be short-term.

BIO-3: Reduced habitat due to reduced revenue from hunting.

During scoping and at meetings hosted by CDFW during 2014 related to Program implementation planning, members of the public expressed concern that implementation of the nonlead ammunition requirement in any form will result in less hunting participation and thus less revenue generation to support CDFW management activities. Consequently then, there was/is concern that less benefit to the ecosystem through habitat conservation and management or benefit will result. However, there is no evidence to indicate that a decrease in participation or revenue will occur that would result in a significant decrease in habitat management work or ecosystem function. In fact, the 2008 nonlead ammunition requirement in the “condor range” did not have such an effect and it applied to approximately 1/5th of the state. Nor did the nonlead ammunition requirement for waterfowl hunting result in any apparent decline in waterfowl hunting.

It is true that the lead ammunition ban considered here is more comprehensive (statewide and for all take of wildlife not later than 2019) and that it could result in a decrease in hunting participation and funding for conservation. The decrease could come about because of a variety of reasons including: decreased interest in hunting because of the regulation changes, decreased participation due to lack of interest in switching to nonlead ammunition, and a lack of availability of nonlead ammunition.

The Recreation section of this Draft ED (Chapter 3.g., REC-1) discusses with specificity the potential for the Proposed Program to result in reduced hunting activity and is incorporated herein by reference. In brief, California's license sale data reflect the nation-wide trend in declining hunter numbers, with the number of licenses sold during the previous 10 year period decreasing by approximately four percent (299,293 licenses in 2004; 287,052 in 2013). The Proposed Program is anticipated to result in a less than 5 percent reduction in hunting activity, which decline will be additive to the anticipated decline in hunting activity in California (and nation-wide).

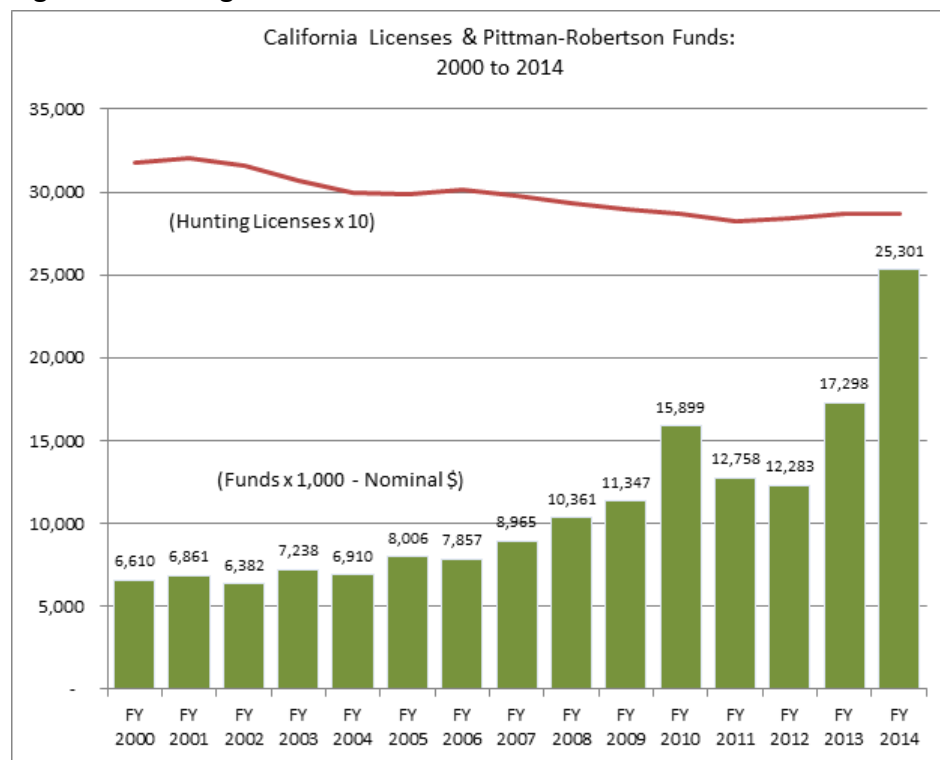
The following discussion addresses the potential future condition represented by fewer hunters if it were to occur and why it would result in a less than significant impact on habitat due to reduced revenue from hunting.

CDFW receives federal grant funds derived from the sale of ammunition and firearms nationally through the Wildlife and Sport Fish Restoration (WSFR) Program (commonly known as the Pittman-Robertson or “PR” Program). These federal funds have recently totaled over \$20 million annually, but were at \$6-7 million annually as recently as 2006. California's annual PR

appropriation is based on land mass and numbers of hunting licenses sold as compared to that of the entire country. The maximum portion any state can receive is 5 percent of the PR appropriation; California receives less than the maximum funding possible because of relatively low number of hunters when compared nationwide.

The number of hunting licenses is not as large of a factor for the state of California due to the overwhelming influence that the state's land mass exerts. Incremental changes in license sales are unlikely to impart much change on California's PR allocation. Any change in the amount allocated to the state is much more likely to be a result of changes in the collection of PR excise tax funds from firearms and ammunition equipment sales across the country. It is notable that in 2008, the year that the condor range nonlead requirements went into effect, license sales dipped by 2.6 percent, but California's allocation of PR funds increased by 16 percent, or by \$1.4 million. The following year the state's allocation increased another 10 percent, or by \$1 million. As shown in Figure 3, changes in the number of licenses sold in the state has not moved in the same direction as changes in the PR fund amount allocated to the state.

Figure 3. Hunting Licenses & PR Allocation: 2000 to 2014¹



Source: USFWS, Pittman-Robertson Allocation to States, 2014; CDFW LRB 2014.

The USFWS has projected a downturn in the total allocation of PR funding largely driven by the moderation in firearms and ammunition sales starting in 2014 across the country. The overall sum total of funds collected across the country, from which each state receives an apportionment, is likely to impart a larger influence on PR funding for the state of California than any change in total hunting license sales. Revenues from license sales and PR funds are

not anticipated to decline by a magnitude sufficient to significantly impact state habitat management programs that support hunting recreation.

PR funds are used to support CDFW positions both statewide and in regions, for research projects to determine demographic factors, movement corridors, habitat use, for law enforcement purposes, and for habitat projects (often focused on single-species but ultimately benefitting many other species, including non-game species) through contracts or grants with both public agencies and private non-profit organizations. CDFW's major wildlife areas, 21 of them, receive funding from the PR program and it supports ongoing habitat management and hunting and other public use related activities on those areas.

The funding that supports CDFW's various game species conservation and habitat programs is based primarily on tag or stamp sales from those programs, with annual program funding of approximately \$10 million. Although unlikely to occur for the reasons stated above and in REC-1, even if the Proposed Program resulted in a reduction in hunting license and tag sales, and that reduction resulted in reduced revenue to CDFW, for the reasons that follow, there would be no significant impact on game management and wildlife area programs, or the capability to gather the monitoring data needed to develop annual hunt programs.

If it were to occur, such a decline in revenue would likely affect deer hunters and hunters of the smaller upland game species (e.g., quail and dove) more so than other hunters. Should a reduction occur, CDFW would need to re-prioritize available funding and programs to be most efficient with the funds available. In reality, this re-prioritization already occurs as there currently are not adequate funds to effectively manage the approximately 1,000,000 acres administered by CDFW, let alone influence or support habitat management and improvement on all the public lands in the state.

In addition, habitat improvement projects implemented by CDFW typically are only a portion of the total project cost for larger scale projects (e.g., restoration of the Rush Fire area in Lassen County). Consequently, at the scale of ecosystems or total wildland acreage in the state, the level of impact from a funding decline resulting from the Proposed Program will be less than significant on an annual basis. As to wetland habitats for waterfowl, the level of hunting participation for waterfowl, and the consequent conservation of wetlands, will not be affected by the Proposed Program, because a requirement to use nonlead ammunition already exists.

In addition, many ecosystem restoration or enhancement projects are funded by other agencies or private grants in partnership to provide sufficient funding to complete and monitor the project. Although there is no evidence of any habitat improvement projects on California's forests, ranges, and deserts that have significantly increased game species populations, CDFW does actively work with other agencies and organizations to develop and maintain water sources for wildlife. These projects tend to make otherwise marginal habitats more inhabitable by adding water sources such that wildlife travel time to water sources decreases and can increase wildlife populations. Such projects are not anticipated to be at risk if hunting participation decreases because most occur in the desert and for bighorn sheep.

For the reasons set forth above, as compared to the existing conditions, the Proposed Program is anticipated to result in less than significant impacts to CDFW's ability to participate in ecosystem management and habitat improvement efforts. In addition, as compared to implementation of the statewide requirement that becomes effective not later than July 1, 2019 by statute (i.e., the "no project" alternative), only Phases 1 and 2 of the Proposed Program result in any impact, and those impacts would be temporary.

BIO-4: Impacts from wounding.

This Draft ED considers whether significant impacts may occur to hunted species (big-game and upland game) as a result of the proposed action. A concern has been expressed that there could be increased wounding loss of game with the use of nonlead ammunition. The existing scientific information suggests that wounding rates for firearms while waterfowl hunting are approximately 20 percent (USDI, 2013); those for upland species (specifically doves) are approximately 14-15 percent (Pierce et al., 2014); and those for big-game species range from 0-14 percent (Aebischer et al., 2014; Fuller, 1990). Two studies (Batha et al., 2010; Knott et al., 2009) specifically compared the performance of copper and lead bullets in big-game hunting. Both studies concluded that copper bullets are equally effective as lead bullets in terms of accuracy and lethal performance, leading to the conclusion that wounding rates for big-game species should not increase due to the use of nonlead ammunition. Aebischer et al. (2014) reported similar results regarding accuracy and lethal performance with a 3 percent wounding rates on a study of four managed wild deer species in the U.K.

Because the 20 percent wounding rate identified for waterfowl hunting is based on the use of nonlead ammunition, no differences in wounding rates for these species is anticipated due to the regulatory proposal. Pierce et al. (2014) reports a 14-15 percent combined wounding rate amongst dove hunters firing lead and steel shot (2 different gauges); the study goes on to conclude that "field analysis detected no difference in doves bagged per shot, wounded per shot, bagged per hit, or wounded per hit among the 3 ammunition types." Data collected to date indicates no significant change in wounding rates between lead and nonlead (steel in this case) for dove hunters; more data is needed to make a same finding for other upland species.

Several studies (Burke et al., 1976; Lohfeld, 1979; Nettles et al., 1976) were conducted to assess deer "survivability" of wounds (including those inflicted by hunters). Each study involved performing necropsies on hunter killed and/or collected deer (killed for study purposes). Nettles (1976) collected 1002 white-tailed deer from throughout the Southeast United States, of which 76 (7.6 percent) showed previous signs of injury. Both Burke et al (1976) and Lohfeld (1979) reports conclude less than 1 percent of the deer examined showed signs of previous debilitating hunting wounds.

Based on the available data (maximum figure where ranges are given) regarding wounding rates and CDFW annual harvest estimates (Table 3, supra), the number of wounded animals left in the field for the various species groups would be as follows: up to 5,206 of all species of big-game; up to 460,695 of all species of upland game, and up to 355,677 of all species of waterfowl. CDFW was unable to locate any literature or data which would provide a wounding

estimate relative to the take of bobcat. CDFW also has no public reports or any records of wounded animals being found in the field during/after hunting seasons in numbers even approaching these estimates; in fact, CDFW receives few reports involving individual wounded animals from any cause found in the field.

Wounding rates are ultimately the product of many factors, including shooter proficiency, caliber (or shot size) used, shot distance, and species being hunted. (Aebischer et al., 2014.) Hunters can (and do) decrease the probability of wounding an animal by practicing with their weapon(s) and carefully choosing their weapon type, caliber (or shot size and choke for shotguns), and shot distance. The available data indicate that, as compared to existing conditions, there will be no significant changes in wounding rates by requiring hunters to use nonlead ammunition to take wildlife as opposed to standard lead bullets (or shot).

In addition, as compared to the statewide requirement that becomes effective not later than July 1, 2019 by statute (i.e., the “no project” alternative), the less than significant effects of the Proposed Program’s phase-in will be short-term.

e. Hazards and Hazardous Material

i. Introduction

This section addresses an issue raised by public comments received during the scoping process (both for the proposed regulatory action and draft environmental document preparation) regarding the increased potential for wildfires resulting from the required use of nonlead ammunition for hunting purposes. None of the other potential impacts regarding the release of hazardous materials into the environment, creating hazards to flight operations for airports, or interfering with other emergency operations would apply to the Proposed Project.

ii. Regulatory Setting

Wildland fire protection in California is the responsibility of either the state, local government, or the federal government. Local responsibility areas include incorporated cities, cultivated agriculture lands, and portions of the desert. Local responsibility area fire protection is typically provided by city fire departments, fire protection districts, counties, and by the California Department of Forestry and Fire Protection (CAL FIRE) under contract to local government.

Government Code chapter 6.8 of part 1 of division 1 of title 5 defines responsibilities for CAL FIRE and for the local agency. In summary, Government Code sections 51178 and 51181 define the CAL FIRE Director’s responsibility to identify very high fire hazard severity zones, transmit this information to local agencies, and to periodically review the recommendations. In part, sections 51178.5 and 51179 define the local agency’s responsibility to make the recommendation available for public review and to designate, by ordinance, very high fire hazard severity zones in its jurisdiction.

iii. Environmental Setting

The Baseline and Program Area discussions at Chapter 1, Section d., and Chapter 2, Section a.iii., supra, provide the environmental setting for the Proposed Program generally. As to hazards and wildfire in particular, man-made and natural wildland fires are a hazard throughout most of California, in part due to its Mediterranean climate and typically dry summers. Man-made causes of wildland fires include but are not limited to sparks from engines or other machinery, discarded cigarettes, arson, or campfires that were not properly extinguished. Lightning is the typical cause of natural wildland fires.

CAL FIRE has identified approximately over 31 million acres of state responsibility areas and provided facilities (i.e., control centers, fire stations, etc.) within these responsibility areas to support fire prevention and control. (CAL FIRE, 2009.) Areas within California that are outside of the state responsibility areas (SRAs) are protected by local (i.e., city or county) or federal agencies. Federal agencies that may be responsible for fire protection on federal lands in California include the U.S. Forest Service and the Bureau of Land Management. Local, state, and federal agencies also provide hazardous material response within their responsibility areas to control and clean-up spills of hazardous materials. Moderate, high, and very high risk wildland fire areas in SRAs have been identified based on fuel, terrain, weather, and other relevant factors. (CAL FIRE, 2007.) CAL FIRE has also developed maps that indicate fire hazard severity zones throughout California for local or other protection areas. (CAL FIRE, 2007.) In addition, CAL FIRE identifies wildland fire risks by county. As an example, a large portion of Yuba County, especially eastern Yuba County, is identified as a very high fire hazard zone in SRAs. (CAL FIRE, 2007.)

Local fire departments in California are responsible for fire protection and hazardous response in areas (typically urbanized areas) that are outside of SRAs and outside of federal lands. As an example, local fire protection and hazardous response within Yuba County are primarily provided by the City of Marysville's fire department though other smaller, volunteer fire districts, such as the Smartville Fire Protection District, may also provide some protection or response. (Yuba County, 2005; City of Marysville, 2010.) The City of Marysville's fire department protects an area of 85 square miles that is comprised of urban, agricultural, and wildland areas. (City of Marysville, 2010.) The Smartville Fire Protection District is primarily a volunteer force of twelve, with a Battalion Chief. (Yuba County, 2005.)

iv. Impact Analysis

A literature search to identify available relevant scientific data was the primary method used to determine impacts related to increases in wildfire ignition due to the phasing of nonlead ammunition for hunting purposes. The principal source of wildfire ignition sources in California are maintained by CAL FIRE and reported in annual "Redbooks." Only one scientific study (referenced below) was located describing fire ignition characteristics resulting from the use of nonlead ammunition. For purposes of this section, a significant impact is considered to be a greater than 5 percent increase in the number of wildfires in California attributed to the use of firearms for hunting purposes.

Other impacts related to hazards and hazardous materials were eliminated from further consideration in the Initial Study and are not discussed here.

HAZ-1: Increased risk of ignition and associated risk of loss, injury, or death from wildfire.

This Draft ED considers whether potentially significant impacts may occur regarding the exposure of people or structures to significant risk of loss, injury, or death from wildfire as a result of the proposed action. CALFIRE (2012) reports show that California experienced 4,655 wildfires attributed to one of 11 separate causes in 2012. Although "shooting" (of any kind) was not listed as one of those causes it could reasonably be included in the "miscellaneous" category. During that time-frame, approximately 14 percent (671) of all wildfires were attributed to this category. Anecdotal data on wildfires experienced in Idaho and Utah during 2012 indicated that from between 3-35 percent could be attributed to target shooting rather than from sport hunters. (Winter, 2012.) Extrapolating that data to the CAL FIRE causal data indicates that from 20-235 of the total 4,655 fires in 2012 could be attributed to "shooting" events. While it is possible that some late season fires may result from firearms used while sport hunting, it is more probable that most of these fires (early and late season) are a result of target shooters who generally fire many more rounds than hunters.⁴

A recent laboratory/controlled conditions study (Finney et al., 2013) concluded that steel jacketed (which are not legal for hunting big game in California) and solid copper bullets fired at an oblique angle into a steel plate caused ignition in oven-dried peat in a steel trap under hot and dry conditions. The authors suggested this was possibly due to these bullets' larger fragment size and the overall "hardness" of the materials when compared to lead.

However, there is no evidence that the study's conditions were typical of hunting conditions in California. The study was conducted under controlled conditions, such that the ricocheting fragments/bullets would land in a "laboratory apparatus" a metal/steel bin, or "bullet trap" containing 4" of oven-dried peat moss, traveling a distance that appears to be between 1-2 feet. The authors acknowledged that the dryness of the peat was an important factor increasing ignition risk and that ignition did not occur with lower temperatures (<65 F) and increased humidity (mid-20%). While some of the conditions associated with higher ignition risk occur in some of California's wildlands, it is unlikely that the combination of deep dry peat moss, high temperatures and extremely low humidities will occur simultaneously during the time of year where most big game hunting occurs in California. Additionally, there is no evidence that firing into an obliquely angled steel plate represents typical hunting conditions.

In addition, it should be noted the study referenced above pertained only to rifle bullets and not to nonlead loads fired from shotguns. The smaller size of the projectile (shotgun pellets) and the low muzzle velocities associated with this weapon type may mitigate against the heating identified with nonlead rifle bullets. In addition, most shotgun shells are constructed to encase the pellets in a plastic "wad" to minimize deformation against the barrel, and thus in addition to lower velocity, less metal to metal contact would result in lower heat generation

⁴ The majority of hunters limit their shooting to attempting to take animals, whereas target shooters have no reason to similarly limit shots fired and their purpose for shooting is to shoot.

from the projectiles moving through the barrel. Moreover, the target zone (mainly slightly to severely above a perpendicular plane) for game animals taken with shotguns, most commonly birds that have flushed, would serve to slow down projectile speeds and allow more time for cooling before hitting any ground based ignition sources.

No information currently exists indicating that the use of nonlead ammunition for sport hunting purposes will significantly increase wildfire events in California. Information that is available suggests that relatively low levels of wildfires are caused by shooting of all types, with target shooting identified as the cause in most of the cases. This activity remains unaffected by the project because the regulatory proposal is to mandate the use of nonlead ammunition for take of wildlife and not for target shooting. Due to the conditions under which nonlead ammunition is used while sport hunting and the relatively low incidence of wildfire than can realistically be attributed to sport hunters, the potential increase in the frequency of wildfires is considered to be less than significant as compared to existing conditions.

In addition, as compared to the statewide implementation of the nonlead requirement that will occur by statute not later than July 1, 2019 (i.e., the “no project” alternative), impacts associated from the Proposed Program’s phase-in of nonlead ammunition will be short-term.

f. Hydrology (Water Quality)

i. Introduction

This chapter presents an overview of impacts from the Proposed Program to hydrological resources (water quality). Due to the size of the area potentially affected by the Proposed Program, this section focuses primarily on the public and open lands as managed by city, state, and federal agencies; however, privately-operated and owned areas are briefly discussed.

ii. Regulatory Setting

CWA

The CWA is the primary federal law that protects the quality of the nation’s surface waters, including lakes, rivers, and coastal wetlands. The key sections pertaining to water quality regulation for a Proposed Program are Sections 303, 401 and 402. (33 U.S.C. §§ 1313, 1341, 1342.) The State Water Resources Control Board (SWRCB) and its nine Regional Water Quality Control Boards (RWQCBs) implement Sections 303, 401, and 402 at the state level. CWA Section 404, which regulates the discharge of dredge and fill materials to the waters of the United States, is discussed in Chapter 3, Section d, Biological Resources.

Section 303(d)

Under CWA Section 303(d) (33 U.S.C. § 1313(d)) states are required to identify “impaired water bodies” (those not meeting established water quality standards), identify the pollutants causing the impairment, establish priority rankings for waters on the list, and develop a schedule for development of control plans to improve water quality. The USEPA then approves the state’s recommended list of impaired waters, or adds to and/or removes water bodies from the list.

Each RWQCB must update the Section 303(d) list every two years. Water bodies on the list have no further assimilative capacity for the identified pollutant, and the Section 303(d) list identifies priorities for development of pollution control plans for each listed water body and pollutant.

The pollution control plans triggered by the CWA Section 303(d) list are called Total Maximum Daily Loads (TMDLs). The TMDL is a “pollution budget” designed to restore the health of a polluted body of water and ensure the protection of beneficial uses. The TMDL also contains the target reductions needed to meet water quality standards and allocates those reductions among the pollutant sources in the watershed (point sources, nonpoint sources, and natural sources). (40 C.F.R. § 130.2.) The current effective USEPA-approved 303(d) list for water bodies in California is the 2008–2010 list approved on November 12, 2010.

Section 401

Section 401 of the CWA (33 U.S.C. § 1341) allows for evaluation of water quality when a proposed activity requiring a federal license or permit could result in a discharge to waters of the U. S. In California, the SWRCB and its nine RWQCBs issue water quality certifications. Each RWQCB is responsible for implementing section 401 in compliance with the CWA and its water quality control plan (also known as a Basin Plan). Applicants for a federal license or permit to conduct activities that may result in the discharge to waters of the United State (including wetlands), must also obtain a section 401 water quality certification to ensure that any such discharge will comply with the applicable provisions of the CWA. Compliance with Section 401 is required for all projects that have a federal component and may affect state water quality.

CWA Section 402 (33 U.S.C. § 1342) regulates point-source discharges to surface waters (other than dredge or fill material) through the NPDES, administered by the USEPA. The NPDES program provides for both general permits (those that cover a number of similar or related activities) and individual permits for discharges to the waters of the U.S. This regulation is implemented at the state level and is described further below.

State Laws, Regulations, and Policies

Porter-Cologne Water Quality Act

The California Porter-Cologne Water Quality Control Act (Porter-Cologne Act) was passed in 1969 and together with the federal CWA, provides regulatory guidance to protect water quality and water resources. The Porter-Cologne Act established the SWRCB and divided California into nine regions, each overseen by a RWQCB. The Porter-Cologne Act established regulatory authority over waters of the state, which are defined as “any surface water or groundwater, including saline waters, within the boundaries of the state.” (Wat. Code, § 13050.) More specifically, the SWRCB and its nine RWQCBs have jurisdiction over any surface or groundwater to which a beneficial use may be assigned. The Porter-Cologne Act also assigned responsibility for implementing CWA sections 303, 401, and 402 to the SWRCB and RWQCBs. The Porter-Cologne Act requires the development and periodic review of Basin Plans for the protection of water quality in each of the state’s nine regions. The Porter-Cologne Act requires each RWQCB

to formulate and adopt a Basin Plan, for all areas within the region. (Wat. Code, § 13240.) A Basin Plan is unique to each region and must identify beneficial uses, establish water quality objectives for the reasonable protection of the beneficial uses, and establish a program of implementation for achieving the water quality objectives.

Fish and Game Code Section 5650 - Water Pollution: Prohibited Materials

Pursuant to Fish and Game Code section 5650, “it is unlawful to deposit in, to permit to pass into, or place where it can pass into the waters of the State any of the following: any petroleum, acid, coal or oil tar, lampblack, aniline, asphalt, bitumen, or residuary product of petroleum, or carbonaceous material or substance.” “... any refuse, liquid or solid, from any refinery, gas house, tannery, distillery, chemical works, mill or factory of any kind.” “... any substance or material deleterious to fish, plant life, mammals, or bird life.” Every person who violates section 5650 is subject to a civil penalty of not more than \$25,000 for each violation.

Local Laws, Regulations and Policies

The discharge of firearms is generally prohibited within the city limits of most, if not all, cities within California. Cities may, through their local ordinance and use permit process, authorize the discharge of these weapons at approved firing ranges (usually indoor for firearms and limited to handguns and small caliber rifles). Ranges at which rifles and/or shotguns are typically used may be found on county, state, or federal lands; private ranges usually operate under the authority of a county use permit and are subject to all other relevant state and federal laws/regulations.

Although hunting seasons are authorized on a state-wide basis, local ordinances prohibiting the discharge of deadly weapons effectively prohibits hunting and nuisance wildlife control activities using a firearm within city limits and on county properties deemed unsuitable for hunting. Additionally, private property owners have the authority to prohibit firearms use on their lands, regardless of authorized seasons and dates established by the Commission, at their discretion.

iii. Environmental Setting

The Baseline and Program Area discussions at Chapter 1, Section d., and Chapter 2, Section a.iii., supra, provide the environmental setting for the Proposed Program generally. As to hydrology specifically, California contains approximately 171,425 miles of rivers (46,166 miles of perennial rivers/streams and 125,259 miles of non-perennial rivers/streams) and approximately 2.9 million acres of wetlands. (CalEPA, 2013.) Water manipulation in California began in earnest with the influx of gold miners in 1849 that diverted streams for hydraulic mining operations and built miles of flumes and ditches to sluice gold. (DWR, 2014.) Due to California's burgeoning population and rain/snowfall distribution, the State Water Project was implemented in 1935 to control flooding and direct water to agriculture and population centers. Management of California's waterways is the primary responsibility of the Department of Water Resources; however numerous other entities including the Bureau of Reclamation, Bureau of Land Management and US Forest Service (wild and scenic rivers), and various other

organizations ("stream watchers," "Riverkeepers," and "Friends of the River") also play a role in the management of rivers and streams.

It has been estimated that up to 90 percent of the historical wetlands in California have been lost since European settlement of California occurred. (CalEPA, 2014.) A wide variety of wetlands (seasonal, emergent, estuarine, vernal pool, permanent) are found in California, but because most of California's rivers have been contained, wetlands seldom experience natural seasonal flooding. (Smith et al., 1991.) Because of the level of historical loss and the high diversity in wildlife species these areas support, most remaining wetlands are highly managed areas which also may support recreational opportunities including hunting. Through its ownership in fee title, leases, easements, and/or management agreements, CDFW manages approximately 82,260 acres of coastal wetlands, approximately 155,673 acres of interior wetlands, and 66,785 acres of riparian habitats. (CDFW, 2014.) The remaining wetlands are mostly managed by federal agencies such as the BLM, FWS, USFS or are in private ownership.

iv. Impact Analysis

Although a number of different substances (including copper) are currently approved as "non-toxic" for waterfowl hunting (USFWS, 2014), comments were received during the regulatory and draft environmental document scoping process regarding a potential impact to water quality resulting from an increased deposition of copper into the environment due to hunting activities.

To assess this potential impact, a literature search was conducted to evaluate the significance of potential environmental effects that might occur to determine impacts from increased copper deposition on water quality, and resulting impacts to wildlife and their habitats due to phasing the nonlead ammunition requirement no later than July 1, 2019. Unfortunately, although numerous criteria are proposed for protecting the health of agricultural crops, aquatic life, terrestrial invertebrates, poultry, laboratory white rats, and humans, no such criteria are available for avian and mammalian wildlife. (Eisle, 1998.) For the purposes of this chapter, a significant impact would be one that substantially degrades water quality through, for example, an increase in base-line water copper concentration levels as a result of copper deposited in the environment by sport hunters during authorized hunting seasons.

HYD (WATER QUALITY)-1: Impacts to species from reduced lead and increased other metals (primarily copper) in the environment.

Copper is a ubiquitous, essential element considered to be both a micronutrient and a toxin. (EPA, 2011.) Compounds such as copper sulfate have been widely used in the United States since the 1700s as a fungicide, algicide, root killer, and herbicide. (NPIC, 2014.) Copper concentrations are usually elevated in the vicinity of human activities where compounds such as copper sulfate are widely and intensively used in confined geographic areas to control nuisance species of aquatic plants and invertebrates, diseases of terrestrial crop plants and ectoparasites of fish and livestock. (Eisler, 1998.)

Copper impacts on water quality depend on the amount deposited, the form in which it is deposited, the type of water it is deposited in ("soft" water is more likely to result in copper toxicity issues than "hard" water) and the species which consumes the copper. Copper deposited in the environment from hunting activities most likely will be in the form of elemental copper (from solid copper or other materials coated with copper) or from copper in an amalgamation of other materials (frangible bullets).

The prohibition on the use of lead for waterfowl hunting in California was phased-in with the start of the 1987-1988 hunting season, taking effect nation-wide starting with the 1991 hunting season. A variety of shot types and materials have been approved by the USFWS as nontoxic, including copper-clad iron, tungsten-iron-copper-nickel and other materials coated in copper, nickel, tin, zinc chloride, zinc chrome and fluoropolymers. (USFWS, 2014.) Since 1991, copper has been extensively deposited in waterways in the form of spent shotgun pellets without any detectable increase in the levels of copper in those waters or documented negative impacts to wildlife species inhabiting those waterways. Most of the increased deposition of copper resulting from the proposed action will be on upland or forested habitats where water is not a dominant feature of the environment.

Environmental impacts associated with increased copper deposition from hunting activities are deemed "less than significant" as compared to existing conditions for the following reasons:

1. Increases in copper deposited in the environment by big-game and/or upland game hunters using nonlead ammunition will not be in the form that causes water quality issues (solid copper v. "ionic" copper available in compounds such as copper sulfate);
2. Copper has been approved as a non-toxic alternative to lead for waterfowl hunting since 1987. Extensive research was conducted at that time leading to the non-toxic designation; since that time no negative impacts to water quality or wildlife and wildlife habitats from any hunting use has been suggested, let alone documented.

In addition, as compared to the statewide implementation of the nonlead requirement that will occur by statute not later than July 1, 2019 (i.e., the "no project" alternative), impacts associated from the Proposed Program's phase-in of nonlead ammunition will be short-term.

g. Recreation

i. Introduction

This section presents an overview of significant environmental impacts related to the Proposed Program's potential effect on recreational activities. In doing so, and although this section focuses primarily on the publically-owned lands managed by federal and state agencies, the discussion below also identifies relevant privately-owned areas. With an eye to the specific requirements set forth in section 781.5 of title 14 of the California Code of Regulations and the provisions of CEQA generally that also apply, this section then identifies impacts to those recreational activities caused by the Proposed Program and compares those impacts to significance criteria to make a significance finding.

ii. Regulatory Setting

Chapter 1, section d.5 (Areas Restricted in Use of Lead Ammunition), *supra*, describes the extent of existing requirements to use nonlead ammunition, including but not limited to the largest contiguous area where nonlead ammunition is required.

iii. Environmental Setting

Chapter 1, section d and Chapter 2, section a.iii., *supra*, describe generally the level of hunting activity in California, as well as the current level of lead and other metals in the environment related to the take of wildlife, and is incorporated by reference here.

iv. Impact Analysis

This Draft ED evaluates the extent to which the Proposed Program will disrupt existing recreational activities in a manner that results in direct or indirect potentially significant changes in the physical environment. The methodology used to assess the Proposed Program's impacts to recreation resource impacts includes the following:

- Assess the baseline amount of hunting activity;
- Identify changes in recreational hunting activity caused by the Proposed Project;
- Evaluate the reasonably foreseeable projected changes in direct expenditures caused by the Proposed Program; and
- Consider the direct and indirect environmental impacts resulting from those changes.

Generally, short-term loss of recreational opportunities can occur by disrupting use of or access to required equipment, recreation areas or facilities. A long-term effect could occur if a recreational opportunity is eliminated as a result of the Proposed Program's implementation.

As set forth above in this Draft ED, under certain circumstances, such as the ones involved in the Proposed Program and pursuant to the Commission's CRP, the Commission has the discretion to deviate from the CEQA Guidelines' Appendix G checklist and develop custom thresholds that more accurately consider the relevant scientific and factual data involved in the Proposed Program. In the case of recreation resources, this Draft ED adapts the Appendix G significance criteria to assist in better evaluating impacts given the Proposed Program's specifics, and do so with as much specificity as possible.

Note also that CEQA's definition of environmental impacts does not include socioeconomic effects, unless they contribute to a physical impact. (*See, e.g.*, CEQA Guidelines, § 15358 (stating that "effects" analyzed under CEQA must be related to a physical change); CEQA Guidelines, § 15360 (defining "environment" to mean the physical conditions which exist within the area which will be affected by a proposed project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance); CEQA Guidelines, § 15131(a) (stating that although economic or social effects of a project shall not be treated as significant effects on the environment, an EIR may trace a chain of cause and effect from a proposed decision on a project through anticipated economic or social changes resulting from

the project to physical changes caused in turn by the economic or social changes); *Lighthouse Field Beach Rescue v. City of Santa Cruz* (2005) 131 Cal. App. 4th 1170, 1206 (effects to recreational users of beach stemming from revisions to off-leash dog use of beach are social effects, and CEQA is not concerned with direct social effects that do not contribute to a secondary physical impact).) Here, a potentially significant impact would occur if the Proposed Program causes a change in hunting activities due to the increased cost or unavailability of nonlead ammunition, which change results in significant direct or indirect physical changes to the environment including changes in land uses or reduced maintenance of habitat areas. An example of such an impact would be if the Proposed Program resulted in a reduction in hunter activity that affected local economics to a degree that blight occurred as a result of changed land uses.

REC-1: Impacts to hunting activities due to the increased cost or unavailability of nonlead ammunition, which impacts result in direct or indirect physical changes to the environment including changes in land uses or reduced maintenance of habitat areas.

This Draft ED considers whether, in the event that retail availability of nonlead ammunition fails to meet the demand of California hunters, a change in hunting based recreation in California will occur as a result of the Proposed Program, which change will result in significant direct or indirect physical changes to the environment. This impact discussion relies in part on the analysis in Impact BIO-3, but supplements that analysis with additional detail describing the potential impact of the Proposed Program on hunting activity. For further detailed analysis on this topic, see also Appendix G “Standardized Regulatory Impact Assessment,” and Appendix H “December 31, 2014 Letter from the California Department of Finance.”

This impact analysis compares the Proposed Program’s impacts to that of existing conditions. However, as with the other impacts discussed in this Draft ED, as compared to the statewide implementation of the nonlead requirement that will occur not later than July 1, 2019 (i.e., the “no project” alternative), the Proposed Program’s impacts will be short-term.

Given the divergent viewpoints regarding the commercial availability of nonlead ammunition, the Initial Study concluded that potentially significant impacts to recreation may occur as a result of: 1) requiring hunters to use nonlead ammunition that may not be available for purchase, which, in turn, may reduce hunting activity in the state; 2) hunters choosing not to participate in their chosen recreational activity due to higher costs – either through purchasing more expensive nonlead ammunition or purchasing new guns, barrels or chokes – to comply with the new regulatory requirements.

To further evaluate the Initial Study’s conclusions and the potential for direct or indirect impacts to the physical environment, the following analysis looks in more detail at the Proposed Program’s reasonably expected impact on existing hunting activity.

Existing Hunting Activity

Current trends regarding existing hunting activity are set forth in Chapter 1.d., Chapter 2.a.iii., and Chapter 3.d.iv., *supra*, and are discussed in additional detail below.

Commission regulations provide for hunting of about 40 different species of wildlife and California's hunters pursue this variety of game and nongame mammals and birds on hunting trips often comprised of multiple days. The number of hunt days and potential changes in the number of hunt days by species or area in response to the Proposed Program is the key metric for assessing changes in hunting activity. This is because, even with the general downward trend in license sales (Figure 1, supra), hunting activity on a per hunter basis may increase or decrease due to a variety of factors. Proposed Program implementation will not affect the hunt days of the more than 70,500 hunters that pursue waterfowl since waterfowl hunting is currently subject to federal restrictions on the use of lead shot. (USFWS, 1991.) Nor will the Proposed Program affect the hunting activity of roughly 47,700 deer hunters that hunt within the condor range and are currently subject to state prohibitions on the use of lead ammunition. Using USFWS (2011a) estimates, hunters in California spend about 4.9 million days afield and expend about \$380 million. After deducting the number of deer hunters in the condor range and the number of waterfowl hunters, potentially 3.5 million hunter days, and \$285 million in expenditures may be affected by the Proposed Program. However, as the proposed regulations phase-in the nonlead requirement, hunters may be affected should they choose to hunt in the newly regulated areas or for the species that are designated for non-lead method of take each year of the implementation schedule.

Anticipated Cost Increases and Limitations on Ammunition Availability, the Resulting Effects on Hunting Activity, and Direct or Indirect Significant Effects on the Physical Environment.

Upon initial consideration, changes in the ammunition performance and the availability of hunting opportunities may affect recreational hunting by substantially increasing costs and/or difficulties in acquiring the required nonlead ammunition. A reduction in the level of hunting activity, as determined by the numbers of hunters and/or the number of hunt days, seemingly could reduce hunting expenditures to a range of businesses during a hunt trip and to ammunition manufacturers and retailers. As component costs increase, potentially doubling in the case of ammunition or if a new firearm must be purchased to accommodate non-lead ammunition, the increase in costs may initially appear to be substantial enough for some to feel priced-out of hunting.

However these incremental costs appear less substantial when put in context of total annual expenditures, as well as hunters' previous investment in outdoor sports equipment. Current hunter spending on ammunition is about four percent of total equipment and trip expenditures. (USFWS, 2011a.) The projected increases in compliance costs as the new regulations are estimated to result in an average annual increase of \$184 to cover nonlead ammunition and additional firearm and recalibration costs. These costs would now comprise 7 percent of the total annual expenditure of \$2,557 per hunter (as reported in USFWS survey data) adjusted for 2013 dollars. Hunters typically have also already invested thousands of dollars in firearms, scopes, specialized vehicles, and auxiliary equipment used for hunting. Considering the projected cost increases in the context of a hunter's total annual expenditure investments in durable hunting equipment diminishes the likelihood that cost increases of the anticipated magnitudes would be substantial enough for hunters to greatly reduce their participation in hunting.

Nonetheless, if the Proposed Program causes hunters to decrease their number of hunt days this would result in decreased hunter spending on equipment and ammunition in preparation for hunting, on fuel and food while en route to hunting lands, and on food, additional equipment, and accommodations in the vicinity of the hunt site. Any reduction in hunter trip and equipment expenditures would tend to reduce the subsequent rippling of that spending throughout the local and state economy, potentially impacting total economic output, jobs, and tax revenues. Although socioeconomic impacts are not cognizable under CEQA, this Draft ED considers that potential economic ripple affect with an eye towards indirect effects, such as changes in land uses or blight resulting from reduced revenue, which land use changes or blight would be physical changes in the environment. In addition, if the reduction in hunting activity is associated with a reduction in license and tag/stamp sales, then that reduction in sales decreases revenue to CDFW, which revenue contributes to funding habitat management on CDFW lands (see Impact BIO-3).

Availability and Cost of Nonlead Ammunition

Conflicting information regarding market availability and overall cost has been presented by proponents and opponents of the law and has informed the Commission's development of the phasing of the proposed program. For example, one study, sponsored by the NSSF (Southwick Associates, 2014), predicts that hunting participation in California may drop by as much as 36 percent as a result of the proposed regulations. However, another study sponsored by Audubon California, Defenders of Wildlife, and the Humane Society of the United States (Thomas, 2014) concluded that hunting participation would not be substantially affected because nonlead ammunition is already commercially available and a two year transition period will be adequate to allow manufacturers to adjust for the anticipated increase in demand.

Research conducted by CDFW on behalf of the Commission indicates that while many different nonlead bullets and cartridges have been certified by the Commission and are advertised for sale by different manufacturers, many are actually limited in availability for purchase either in sporting goods stores that typically sell ammunition or from on-line vendors. Furthermore, bullets and cartridges for calibers considered to be "uncommon" are essentially unavailable for purchase by California hunters. Even if nonlead ammunition is available for purchase, the ammunition may not be available to meet the volume of demand created by Fish and Game Code section 3004.5. Additionally, costs are often higher for nonlead ammunition of all calibers. Finally, according to NSSF sponsored outreach (Southwick Associates, 2014), ammunition manufacturers have indicated they will not be sufficiently increasing production of nonlead ammunition to meet the demand the legislation will create in California. Interestingly, the same analysis illustrates California's demand for new nonlead products, which presumably would result in new markets. (Southwick Associates, 2014).

However, because of existing uncertainty over the future availability and cost of nonlead ammunition, CDFW, on the Commission's behalf, evaluated a range of potential reductions in hunting activity: 5 percent, 10 percent, and a drop of 13 percent based on the report by Southwick Associates. (Southwick Associates, 2014.) Table 4 shows the projected changes in hunter direct expenditure, hunt days, total economic output, and total economic and fiscal

impact. If hunting is reduced by 10 percent in response to the Proposed Program, the economic and fiscal impacts due to reduced hunting recreation would exceed \$50 million in a one year period.

Table 4. Economic Impact Assessment of the Proposed Program (\$2013)

Significance Assessment: Twelve Month Period after Full Implementation				
Projected % Reduction in Hunting ¹	Projected Change in Hunter Direct Expenditure	Projected Change in Hunt Days	Total Economic Output	Total Economic and Fiscal Impacts
5%	\$ (13,539,407)	(173,582)	\$ (27,363,142)	\$ (29,381,073)
10%	\$ (27,078,815)	(347,164)	\$ (54,726,284)	\$ (58,762,146)
13%	\$ (35,202,459)	(451,314)	\$ (71,144,170)	\$ (76,390,790)
¹ A range of potential percentage reductions in hunting activity of 5%, 10% & 13% are projected to estimate the economic impact of the proposed program.				

Hunter Reaction to Cost Increases

To determine the most reasonably foreseeable percentage change in hunting activity, CDFW, on the Commission's behalf, considered available data illuminating the extent to which incremental cost increases for, or decreased in availability of, nonlead ammunition, new firearms and/or recalibration costs will change the level of hunting activity. This data includes the condor range experience from 2008 to the present, the response to federally mandated requirements for using nonlead ammunition for waterfowl, and the price elasticity of hunting demand. CDFW also surveyed research on the determinants of the demand for hunting that examined the price elasticity of demand, income elasticity of demand, and how socio-demographic characteristics of the population relate to hunting demand. As set forth below, this analysis concludes that it is reasonable to expect hunter reaction to cost increases will result in a less than 5 percent reduction in hunting activity.⁵

- Condor Range Experience 2008 to present

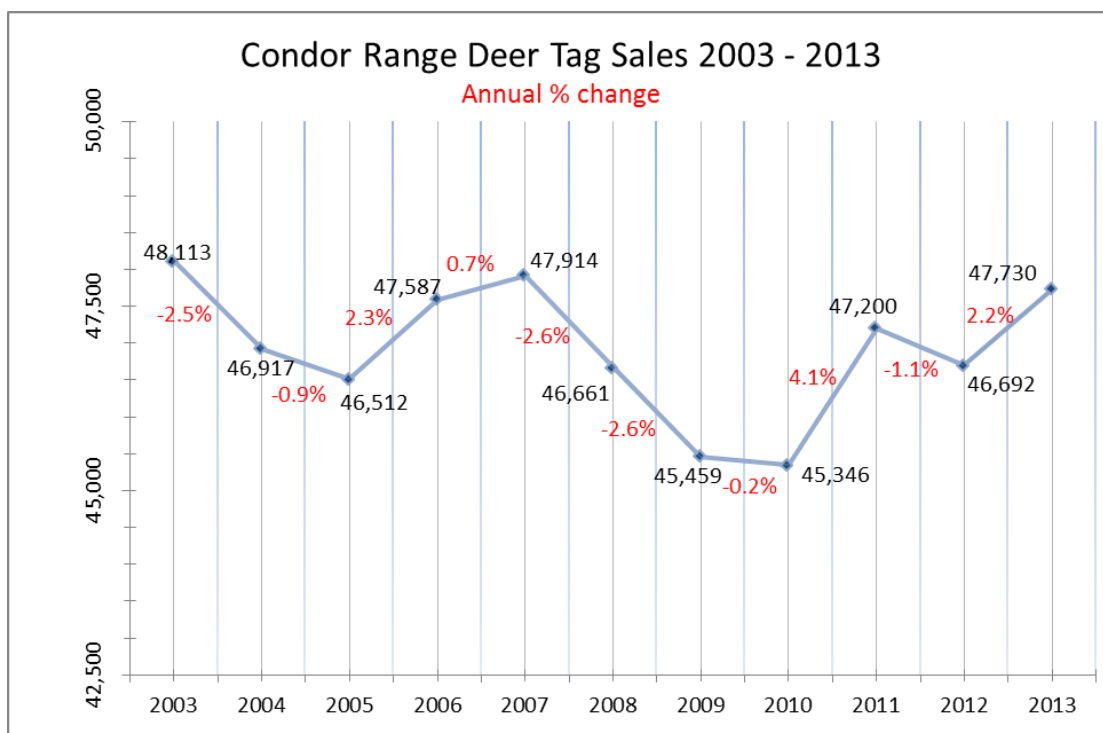
Legislative analysis of the 2007 Condor bill considered whether hunting activity could decline by as much as 25 percent based on stated preferences from surveys. (Assem. Com. On Water, Parks and Wildlife on Assemb. Bill No. 821 (2006-2008 Reg. Sess) Apr. 10, 2007.⁶) However, tag sales and harvest report data have shown no significant drop in tag sales. Within the deer zones comprising the condor range, the number of tags authorized has not changed since implementation of the ban (<http://www.dfg.ca.gov/wildlife/hunting/deer/deerhunt.html>). In 2007, prior to the restriction, tags sold in the D zones within the condor range totaled 26,818. Since 2008, the average number of tags sold annually is 26,943. These zones are entirely within the condor zone. Zone A's southern half is partly within the condor zone and partly north of the condor zone. Zone A tags issued in 2007 were 33,160. Since 2008, Zone A has issued an

⁵ In a letter dated December 31, 2014, the Department of Finance concluded that the Proposed Program's total estimated impact does not exceed Finance's major regulation threshold of \$50 million. See Appendix H.

average of 30,644 tags (range 29,300-31,529). Consequently, deer tags sold in the condor range have increased in the D zones and decreased in the A zone.

Neither the increase nor the decrease in tag sales can be attributed to the nonlead requirement's implementation because a significant portion of the A zone was unaffected by the nonlead requirement; and perhaps more significantly, because of the external factors affecting hunters during 2008-2013 associated with the economic downturn (and its effects), high fuel prices, and drought.

Figure 4. Hunting Activity Condor Range Pre- and Post-2008 Regulation



Sources: LRB and WLB.

- Federally Mandated Waterfowl Nonlead Requirement

In 1991 the use of nonlead ammunition to hunt waterfowl was required across the entire country. Many states, including California, phased the requirement in stages. Although the number of hunters that purchased stamps during 1981-1991 declined, it is not possible to separate the effect of the phase-in of nonlead ammunition from the effect of reductions in season length and bag limits. Initially some hunters reported dissatisfaction with the performance of nonlead alternatives, particularly steel shot. Over the course of a few years,

⁶ "The National Shooting Sports Foundation notes that recent surveys of hunters show that as many as 25% of hunters would either quit hunting big game or hunt less in California if a ban were adopted. A decrease in hunting could result in a loss of revenue to DFG from hunting license and tag sales, taxes on ammunition sales, and other economic contributions associated with hunting."

ammunition manufacturers responded and developed a wide variety of nonlead shot alloys such as: tungsten-bronze-iron, tungsten-iron, and tungsten-tin-bismuth. Steel shot shotgun shell loads have undergone significant improvements as well. Overall it is reported that the required compliance across the country triggered industry to respond with new products that improved performance and brought costs down. (Ross, 2014.) Since 1991, levels of hunter participation in waterfowl hunting in California remain stable.

Public concern was expressed during 2014 that the cost, availability, and performance of nonlead ammunition in California will not necessarily follow the model experienced in the nationwide ban of lead ammunition for waterfowl hunting. Performance (lethality) has already been addressed in this document above (see BIO-4). CDFW acknowledges that the market response for the Proposed Program may differ from that experienced nationally in response to nonlead requirements for waterfowl hunting because the current prohibition will only occur in California. The cost and availability of nonlead ammunition remains uncertain. This uncertainty is increased by the fact that the Proposed Program occurs at a time when, for the past few years, the overall availability of ammunition, lead or nonlead, has been at historically low amounts. This low availability is believed to have been due to concerns about the potential for future laws and regulations limiting firearm and ammunition use.

- Price Elasticity of Demand for Hunting

On the Commission's behalf, CDFW reviewed published research on the demand for hunting, particularly the "price elasticity of demand" for hunting or in other words, how hunters may change their number of hunt days in reaction to changes in the component costs of hunting. Hunting demand is found to be quite price inelastic; that is to say that the level of hunting does not respond much to changes in the price of things that comprise a small share of the total cost of hunting activities. High price elasticity of demand was demonstrated during the condor range implementation in the fact that hunters did not change their amount of hunting more than the costs increases induced by the nonlead program. A small increase in a recurring cost (e.g. licenses, ammunition, fuel costs, etc.) appears to be put in context of each hunter's previous investment in hunting equipment and total annual trip expenses. Other factors that influence the level of hunting, such as levels of personal income, leisure time, competing alternate forms of recreation, and the socio-demographic characteristics of the population were also examined.

The research supports the conclusion that hunting is an activity that is price inelastic, a unique activity with no like substitutes, and is driven by tradition. (Poudyal, 2008; American Sportfishing Association, 2007; Sun et al., 2005; Derek Murray Consulting Associates, 2006; Mäler et al., 2005.) The determinants of the long and short-term trends in hunting in the state are more strongly correlated to the socio-demographic characteristics of the population, shifts from rural to urban residency and access to suitable hunting habitat than to relatively small changes in the costs of hunting recreation.

After considering the data summarized above along with the analysis in the Standardized Regulatory Impact Assessment (Appendix G) conducted during the rulemaking process, this

Draft ED concludes that it is reasonable to assume an anticipated decline in hunting activity of less than 5 percent annually during the Proposed Program's implementation. This less than five percent rate of decline in hunting is consistent with published research on the demand for hunting, the findings on the price elasticity of demand for hunting, and accords with the state's experience following the condor range lead ammunition prohibitions established in 2008. This less than 5 percent rate of decline would be additive to the current rate of decline in hunting activity that would occur if current trends continue. For example, if license sales are currently declining at an average rate of approximately 0.2 percent annually from 2000 to 2013 and that rate of decline continues, implementation of the Proposed Program will increase the rate of decline by less than 5 percent to such that the total decline will still not exceed 5 percent.

It should be noted that the less than 5 percent reduction in hunting activity attributable to the Proposed Program will not be distributed evenly across all hunting activity. For example, the nonlead ammunition requirement in the condor range affects only about a quarter (25.8 percent) of California's deer hunters and a much smaller percentage of the state's total hunters. Current supplies of nonlead ammunition appear adequate to meet the volume of those hunters' demand.

Direct or Indirect Significant Effects on the Physical Environment

In the event that manufacturers are unable to meet the increasing demand for any particular nonlead ammunition as the regulations are phased in statewide, imbalances in supply and demand may make it more difficult for California hunters to obtain suitable ammunition. Although the reduction in hunting activity attributable to the Proposed Program is anticipated to be less than 5 percent, under these conditions a larger percentage of hunters may reduce their hunting activity or decide not to participate altogether.

BIO-3, incorporated by reference here, discusses in detail the risk that reduced hunting activity would reduce revenue to CDFW, and the potential for any such reduction in revenue significantly impact CDFW's ecosystem management or habitat improvement activities. BIO-3 concludes that, as compared to existing conditions, the potential impact on ecosystem management or habitat improvement activities from the Proposed Program is less than significant. Although it is possible that a reduction in hunting activity may have a ripple effect in local economies, given the size of the anticipated reduction in hunting activities relative to hunting and other economic activity in general, this Draft ED concludes that, as compared to existing conditions, it is speculative to conclude that those ripple effects will result in changes in land use or fiscal impacts on local governments that would result in significant physical changes in the environment. In addition, as compared to the statewide implementation of the nonlead requirement that will occur by statute not later than July 1, 2019 (i.e., the "no project" alternative), impacts associated from the Proposed Program's phase-in of nonlead ammunition will be short-term.

Chapter 4: OTHER STATUTORY CONSIDERATIONS

a. Introduction

Although this Draft ED is prepared pursuant to the Commission's CRP as a functional equivalent document, the Draft ED employs the organization of an EIR for its impact analysis. Consistent with that convention, this chapter presents discussions of irreversible impacts, significant and unavoidable impacts, growth-inducing impacts, and cumulative impacts consistent with the requirements of CEQA and the CEQA Guidelines specifically for an EIR.

b. Irreversible Impacts

CEQA Guidelines section 15126.2 subdivision (c) requires that an EIR, specifically, identify any irreversible impacts, also referred to as irreversible environmental changes that may be caused by a proposed project including current or future commitments to using non-renewable resources, secondary, or growth-inducing impacts that commit future generations to similar uses. Section 15126.2, subdivision (c), of the CEQA Guidelines states that significant irreversible environmental changes associated with a proposed project may include the following:

- Uses of non-renewable resources during the initial and continued phases of the project which may be irreversible because a large commitment of such resources makes removal or nonuse thereafter unlikely;
- Primary impacts and, particularly, secondary impacts (such as highway improvement that provides access to a previously inaccessible area) that commit future generations to similar uses; and
- Irreversible damage, which may result from environmental accidents associated with the project.

The irretrievable commitment of nonrenewable resources would occur as a result of the Proposed Program as follows. Implementation of the Program would involve increased use of nonlead ammunition, which would involve the use of fossil fuels and other non-renewable resources for the manufacture of that ammunition. However, the total amount of fossil fuels used is anticipated to be similar to what would otherwise be used for manufacture of lead ammunition, and as such is not considered to be a large commitment of resources.

Manufacture of nonlead ammunition could also require extraction of additional non-renewable mineral resources, specifically copper and iron ore. Yet, the amount of additional copper and iron ore required to manufacture nonlead ammunition is anticipated to be low relative to the total availability of these resources, and as such is not considered a large commitment of resources. Furthermore, by phasing-in the nonlead ammunition requirement, the Program does not make hunting, take of wildlife, or use of any ammunition compulsory. Also, the Program is not anticipated to have secondary impacts that commit future generations to similar uses or result in irreversible damage from accidents.

c. Significant and Unavoidable Impacts

This Draft ED's analysis of Proposed Program effects did not identify any significant impacts which could be reduced to a level of less-than-significant through implementation of stand-alone mitigation measures; rather, because the Proposed Program consists of proposed statewide regulations, measures to reduce or avoid impacts were incorporated directly into the proposed regulations were feasible. As a result, adverse impacts were found to be less-than-significant (i.e. the proposed regulations would ensure that impacts are not significant).

d. Growth Inducement

Section 15126.2(d) of the state's CEQA Guidelines requires an EIR, specifically, to include a detailed statement of a proposed project's anticipated growth-inducing impacts. The analysis of growth-inducing impacts must discuss the ways in which a proposed project could foster economic or population growth or the construction of additional housing in the project area. The analysis must also address project-related actions that, either individually or cumulatively, would remove existing obstacles to population growth. A project would be considered growth inducing if it induces growth directly (through the construction of new housing or increasing population) or indirectly (increasing employment opportunities or eliminating existing constraints on development). Under CEQA, growth is not assumed to be either beneficial or detrimental.

The Proposed Program would not involve new development or infrastructure installation that could directly induce population growth. Additionally, the Program would not involve construction of new housing or create a demand for additional housing. CDFW has received no additional funding to administer the Proposed Program and the proposed amendments to the regulations have been designed to accommodate the fact that no significant additional staff are anticipated to administer the Program. Furthermore, the Proposed Program would not displace any existing housing units or persons. Finally, the manufacture of nonlead ammunition is not anticipated to generate a sufficient increase in economic activity in communities near manufacturing locations such that they would experience substantial population growth.

Therefore, the Proposed Program would have a less than significant impact on population growth or housing demand.

e. Cumulative Impacts

A cumulative impact refers to the combined effect of "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts." (CEQA Guidelines, § 15355.) As defined by the state of California, cumulative impacts reflect "the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time." (CEQA Guidelines,

§ 15355, sub. (b).) Under CEQA, an EIR, specifically, must discuss the cumulative impacts of a project when the project's incremental contribution to the group effect is "cumulatively considerable." An EIR does not need to discuss cumulative impacts that do not result in part from the project evaluated in the EIR.

In order to meet the adequacy standard established by section 15130 of the CEQA Guidelines, an EIR's analysis of cumulative impacts must contain the following elements.

- An analysis of related future projects or planned development that would affect resources in the project area similar to those affected by the proposed project.
- A summary of the environmental effects expected to result from those projects with specific reference to additional information stating where that information is available.
- A reasonable analysis of the combined (cumulative) impacts of the relevant projects.

It must also evaluate a proposed project's potential to contribute to the significant cumulative impacts identified, and discuss feasible options for mitigating or avoiding any contributions assessed as cumulatively considerable. The discussion of cumulative impacts is not required to provide as much detail as the discussion of the effects attributable to the project alone. Rather, the level of detail should be guided by what is practical and reasonable.

i. Methods Used in Analysis

The level of detail of a cumulative impact analysis considers a proposed project's geographic scope and other factors (e.g., a project's construction or operation activities) to ensure that the level of detail is practical and reasonable. Because of the broad geographic range of CDFW's Program, involving numerous hunting locations scattered statewide, this section provides a broad discussion of cumulative impacts by subject area rather than mention of all individual projects contributing to the possible cumulative effect. After reviewing the relevant resource areas as analyzed in this Draft ED, this document concludes that recreation is the only cumulative impact for which there is any substantial evidence of a potentially significant cumulative impact. Thus, this discussion focuses on evaluating the potential for significant recreational cumulative impacts.

ii. Cumulative Impacts Analysis

CUM-1 – Other projects that may reduce hunting opportunity, which, in combination with the Proposed Program's impacts, would affect habitat.

This analysis considers whether various projects throughout the state may, over time, cumulatively reduce hunting opportunity in a manner that will result in a direct or indirect physical change in the environment. Such projects might include land use development that modify ranch and other lands that may currently be available for hunting. Such projects might also include the Commission's annual bag limits, which control hunting opportunities within the state.

Although this Draft ED considers land conversion as a potential source of cumulative impacts, it is speculative to conclude when or how any reduction in hunting opportunities attributable to the Program will combine with reductions attributable to development throughout the state in a manner that will result in a physical change in the environment. In fact, it is possible that development will unfold in conjunction with the setting aside of open spaces that provide for hunting opportunities and that current opportunities on public lands will continue.

Alternatively, it is possible that development will limit hunting opportunities in a manner that combines with the reduced hunting opportunities resulting from the Proposed Program, but that the combined reduction in hunting opportunities will not result in reduced revenues: (1) to local economies, such that land use changes occur; or (2) to CDFW, such that CDFW's habitat improvement or ecosystem management activities are adversely affected. Additionally, land conversion has been, and will continue to be, an ongoing factor affecting hunting opportunity.

As to the Commission's annual bag/quota limits, those limits may increase or decrease annually, reflecting the Commission's consideration of numerous factors associated with CDFW recommendations for harvest levels based on available data. Even if a reduction in recreational hunting did occur as a result of the Proposed Program, it is unclear to what level this would affect the overall availability of game animals. Therefore, while it is possible that future bag limits could be lower and therefore may cause a reduction of hunting opportunity, it is equally possible that future bag limits could be higher and provide more hunting opportunity. In addition, as described in Chapter 3, the Proposed Program's potential impact to the environment is largely beneficial, and any adverse impact due to impacts on the environment from changes in land use or reduced revenue for habitat improvements or ecosystem management are unlikely to occur.

For these reasons, the Proposed Project's contribution to cumulative impacts, and the cumulative impacts, are found to be less than significant.

Chapter 5: ALTERNATIVES

a. Introduction

Although this Draft ED is prepared pursuant to the Commission's CRP as a functional equivalent document, the Draft ED employs the organization of an EIR for its impact analysis. Thus, this chapter presents an alternatives discussion consistent with CEQA and the CEQA Guidelines requirements for an EIR, specifically.

This chapter describes the alternatives considered for the proposed phasing-in of the nonlead ammunition requirement and evaluates their environmental impacts as compared to the Proposed Program. The purpose of the alternatives analysis in this ED is to describe a range of reasonable alternatives to the project that can feasibly attain most of the identified Program objectives, but reduce or avoid one or more of the project's significant impacts. A more detailed description of the CEQA and CRP requirements for alternatives analysis is provided in the section immediately below. The chapter then continues with a description of the alternative development process, alternatives that were considered, and alternatives that were considered but dismissed. The chapter closes with a discussion regarding the environmentally superior alternative.

b. Regulatory Requirements

CEQA requires that an EIR, specifically, evaluate a reasonable range of alternatives to the proposed project, including the No Project Alternative. The No Project Alternative allows decision makers to compare the impacts of approving the action against the impacts of not approving the action. While there is no clear rule for determining a reasonable range of alternatives to the proposed project, CEQA provides guidance that can be used to define the range of alternatives for consideration in the environmental document.

The range of alternatives under for an EIR, specifically, must meet most of the basic project objectives, should substantially lessen one or more of the significant impacts of the proposed project (although the alternative could have greater impacts overall), and must be potentially feasible. (Cal. Code Regs., tit. 14, § 781.5(g).) In determining whether alternatives are potentially feasible, the Commission was guided by the general definition of feasibility found in CEQA Guidelines section 15364: "capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors." In accordance with CEQA Guidelines section 15126.6 subdivision (f), the Lead Agency should consider site suitability, economic viability, availability of infrastructure, general plan consistency, other regulatory limitations, and jurisdictional boundaries in determining the range of alternatives to be evaluated in an EIR. An EIR must briefly describe the rationale for selection and rejection of alternatives and the information that the Lead Agency relied upon in making the selection. It should also identify any alternatives that were considered by the Lead Agency but were rejected as infeasible during the scoping process and briefly explain the reason for their exclusion. (CEQA Guidelines, § 15126.6, subd. (c).) These guidelines were used in developing the alternatives for this ED and their evaluation as described below.

c. Alternatives Development Process

This Draft ED is based on the statutory requirements in Fish and Game Code section 3004.5 relating to the phase-in, as practicable, of the requirement to use nonlead ammunition statewide, prior to but no later than July 1, 2019.

In developing these alternatives, the Commission sought to obtain public input through a range of outreach and involvement strategies. Beginning in January 2014, CDFW, on the Commission's behalf, initiated an intensive public outreach effort designed to solicit ideas from both hunters and nonhunters on the least disruptive manner to phase-in the transition from traditional lead to nonlead ammunition consistent with section 3004.5. The rulemaking process as required by CEQA began on October 31, 2014 when the IS/NOP for the Program was published for review. Additionally, an internet page on CDFW's website was established to alert individuals of current Program information and upcoming scoping meetings, and to solicit comments on the Program itself. A mailing list was also created to inform interested parties of the renewed environmental review of the Program and to provide direction on how and when to provide comments. This list included hunters, non-profit organizations, ammunition manufacturers, and members of the general public. A public scoping meeting was held to allow additional opportunity for public input. Suggestions and comments received from each of these activities informed the development of alternatives for the Program. A summary of the comments received through the formal scoping process is available in Appendix C.

Concurrent with the activities described above, CDFW and other entities have conducted studies and prepared technical documents to develop a more detailed understanding of the Program activities and potential effects on the environment. These and other investigations, together with the public involvement process described above, collectively offered helpful insights for the Commission's consideration and use in the development of the project alternatives.

A range of alternatives is presented below that address some of the potential impacts of the Proposed Program. Alternatives were developed with consideration of the Program's goals and objectives (i.e., purpose and need), the significant environmental impacts of the Program, and potential feasibility. These alternatives seek to achieve similar goals as the Proposed Program, though they may achieve these goals to a greater or lesser extent.

i. Program Objectives

The Program was developed to achieve the following objectives:

- Promulgate new regulation and amendments to the Commission's previous regulations as necessary to effectively implement Fish and Game Code section 3004.5 requiring the Commission to require nonlead ammunition as soon as practicable and not later than the July 1, 2019 date on which the requirement becomes effective statewide;
- Fulfill the Commission's responsibilities to make complex public policy and biological decisions on behalf of the people of California and to regulate the taking

or possession of birds, mammals, fish, amphibian, and reptiles to the extent and in the manner prescribed in chapter 2, article 1 of the Fish and Game Code;

- Facilitate the phase-in of nonlead ammunition in the manner that is least disruptive for hunters; and
- Ensure that the development of the regulations considers economic impacts, practical considerations for implementation, and technological capabilities existing at the time of implementation, doing so in a manner that can be administered and enforced by CDFW, consistent with CDFW's mission to manage California's diverse fish, wildlife, and plant resources, and the habitats upon which they depend, for their ecological values and for their use and enjoyment by the public.

ii. Significant Environmental Impacts of Proposed Project

The analysis of Program effects did not identify any significant impacts which could be reduced to a level of less-than-significant through implementation of mitigation; rather, measures to reduce or avoid impacts were incorporated directly into the draft updated regulations where feasible given the scope of the Commission's jurisdictional authority with respect to the regulation of ammunition. As a result, adverse impacts were found to be less-than-significant (i.e., the proposed regulations would ensure that impacts are not significant).

iii. Significant and Unavoidable Environmental Impacts of Proposed Program

This Draft ED concludes that the Proposed Program will not result in significant and unavoidable environmental impacts.

d. Alternatives Considered

The following alternatives have been evaluated for their potential feasibility and their ability to achieve most of the Program objectives while avoiding, reducing, minimizing, or substantially lessening significant impacts identified for the Proposed Program. These alternatives (with the exception of the No Program Alternative) were determined to be feasible or potentially feasible, and would generally meet the Program objectives.

The degree to which these alternatives substantially lower the significant impacts identified for the Proposed Program is discussed below. All relevant subject areas are analyzed for each alternative, though at a more general level than for the Proposed Program.

- Early Implementation Alternative
- Modified Phasing Implementation Alternative
- No Project Alternative

i. Early Implementation Alternative

Characteristics of this Alternative

The Early Implementation Alternative consists of full implementation of section 3004.5 by July 1, 2015 (or as early as the rulemaking process would allow).

Impact Analysis

Biological Resources

Early implementation of the requirement to use nonlead ammunition increases beneficial impacts on biological resources. Using an early implementation date will immediately reduce lead introduced to the environment through hunting activities. Ingestion of lead fragments of pellets in carcasses and gut piles by scavenging wildlife should be reduced or eliminated with associated reductions in blood lead levels and potential lead poisoning in predatory and scavenging birds. (Kelly et al., 2011.)

Hazards and Hazardous Materials

This alternative may result in a less than significant additional potential for an increased risk of ignition and associated risk of loss, injury, or death from wildfire. This alternative would lead to increased use of nonlead ammunition at an earlier date, which in turn increases the risk of ignition from nonlead bullets. However, as discussed in Chapter 4, given the conditions under which nonlead ammunition is used while sport hunting and the relatively low incidence of wildfire that can realistically be attributed to sport hunters, the potential increase in the frequency of wildfires under this alternative is considered to be less than significant.

Hydrology (Water Quality)

With early implementation of the prohibition on the use of lead ammunition, there is potential for increased copper deposition in waterways due to an increased use of copper ammunition at an earlier date. However, this impact is anticipated to be less than significant. Increases in copper deposited in the environment by big-game and/or upland game hunters using nonlead ammunition will not be in a form that causes water quality issues (solid copper v. “iconic” copper available in compounds such as copper sulfate). Additionally, copper coated non-toxic bullets have been approved as an alternative to lead for waterfowl hunting since 1987. Extensive research conducted at that time suggests no negative impacts to water quality or wildlife and wildlife habitats from any hunting use of copper ammunition. Therefore, this alternative would have a less than significant impact on water quality.

Recreation

This early implementation of the requirement to use nonlead ammunition would result in the highest risk of impacts to recreational activities. Ammunition in general is in short supply both in California and nationwide, leading to shortages and backorders for even traditional ammunition. (Southwick Associates 2014.) Based on the limited capacity of manufacturers to

increase production, and although this alternative was potentially feasible, this Draft ED concludes that it is likely not practicable to meet the demand for nonlead ammunition in California as early as 2015. Therefore, this alternative has potential for significant disruption of hunting-based recreation and the greatest risk of impacting recreation in a manner that results in a direct or indirect effect on the environment.

Cumulative Impacts

In combination with other potential sources of cumulative impacts, the early implementation alternative would create the greatest risk for cumulative impacts to recreational opportunities, and, as a result, the greatest risk of cumulative environmental impacts from decreased local revenue from hunting activity that results in land use changes and decreased funding for habitat improvements and ecosystem management. However, as described in this Draft ED, it is unlikely that the Proposed Program will result in adverse impacts on the environment and, in fact, the Proposed Program is likely to result in beneficial impacts. Furthermore, there is no substantial evidence of specific development or other projects that would occur as early as 2015 that would create stresses on hunting opportunity and that would combine with those of the early implementation alternative to create a significant cumulative impact.

ii. Modified Phasing Implementation Alternative

Characteristics of this Alternative

This alternative would accomplish the transition to nonlead ammunition in two phases as opposed to the three outlined in the proposed project. The Modified Phasing Implementation Alternative would advance the implementation process by combining phases 1 and 2 of the proposed project with an effective date of July 1, 2015. Full implementation would remain at July 1, 2019. Therefore, hunters on CDFW lands, bighorn sheep hunters, and hunters using a shotgun to take specified upland game birds, small game mammals, nongame birds, and any wildlife for depredation purposes, would be required to use nonlead ammunition after July 1, 2015.

Impact Analysis

Biological Resources

The modified phasing alternative may lead to an increased beneficial impact on biological resources. Although not as immediate as the Early Implementation Alternative, this alternative increases the required use of nonlead ammunition on July 1, 2015, as compared to the Proposed Program, and will therefore lead to reduced lead introduced in the environment through hunting activities and other take of wildlife at an earlier date. Ingestion of lead fragments of pellets in carcasses and gut piles by scavenging wildlife should be reduced with associated reductions in blood lead levels and potential lead poisoning in predatory and scavenging birds. (Kelly et al., 2011.)

Hazards and Hazardous Materials

This alternative may result in additional potential for an increased risk of ignition and associated risk of loss, injury, or death from wildfire. This alternative would lead to increased use of nonlead ammunition at an earlier date, which in turn increases the risk of ignition from steel jacketed and solid copper bullets. However, as discussed in Chapter 4, given the conditions under which nonlead ammunition is used while sport hunting and the relatively low incidence of wildfire that can realistically be attributed to sport hunters, the potential increase in the frequency of wildfires under this alternative is considered to be less than significant.

Hydrology (Water Quality)

With modified phasing-in of the prohibition on the use of lead ammunition, there is potential for increased copper deposition in waterways due to an increased use of copper ammunition at an earlier date. However, this impact is anticipated to be less than significant. Increases in copper deposited in the environment by big-game and/or upland game hunters using nonlead ammunition will not be in a form that causes water quality issues (solid copper v. “iconic” copper available in compounds such as copper sulfate). Additionally, copper coated non-toxic bullets have been approved as a non-toxic alternative to lead for waterfowl hunting since 1987. Extensive research conducted at that time suggests no negative impacts to water quality or wildlife and wildlife habitats from any hunting use of copper ammunition. Therefore, this alternative would have a less than significant impact on water quality.

Recreation

Because nontoxic shot has been required for waterfowl hunting nationwide since 1991, nonlead shotshells in waterfowl sizes are thought to be widely available. (Thomas, 2014.) For this reason, it is potentially practicable to phase-in take of wildlife with a shotgun using waterfowl-sized shot in 2015. Because of extremely limited supplies of nonlead .22 and .17 rimfire ammunition, small game and nongame species could still be taken with traditional lead ammunition until July 1, 2019. While it may be practicable to implement the transition in two phases, substantial uncertainty remains regarding the adequacy of supply to meet this increased demand in 2015. Given this uncertainty in the supply of nonlead ammunition, this alternative has the potential for significant disruption of hunting-based recreation, and therefore a potentially significant impact on recreation.

Cumulative Impacts

When combined with the impacts of land development, the modified phasing alternative creates some risk for cumulative impacts to recreational opportunities, and, as a result, some risk of cumulative environmental impacts from decreased local revenue from hunting activity that results in land use changes as well as decreased funding for habitat improvements and ecosystem management. However, as described in this Draft ED, it is unlikely that the Proposed Program will result in adverse impacts on the environment and, in fact, the Proposed Program is likely to result in beneficial impacts. Furthermore, there is no substantial evidence of specific development projects that would occur as early as 2015 that would create stresses

on hunting opportunity and that would combine with those of the early implementation alternative to create a significant cumulative impact.

iii. No Project Alternative

Characteristics of this Alternative

Under the No Program Alternative, the Commission will take no action currently regarding phasing-in of the prohibition on lead ammunition, and the implementation of the prohibition will occur on July 1, 2019 as required by Fish and Game Code section 3004.5.

Impact Analysis

Biological Resources

A July 1, 2019 implementation date may cause an additional adverse effect on the environment. Lead poisoning has been documented as a cause of mortality in waterfowl, has been documented in terrestrial birds, and has been seen in predatory birds such as bald and golden eagles and California condors. Although the benefit of removing ammunition as a source of lead in the environment is difficult to quantify, decreasing the amount of lead deposited into the environment from any source is expected to be beneficial for wildlife species, including special status raptors. By delaying the implementation of the requirement to use nonlead ammunition, there is a potentially significant impact on biological resources due to the increased insertion of lead into the environment until the July 1, 2019 statutory prohibition takes effect.

Hazards and Hazardous Materials

Because this alternative does not include any early phasing-in of the prohibition on lead ammunition, there is no additional risk of ignition and associated risk of loss, injury, or death from wildfire compared to the risk that will exist once the statewide requirement becomes effective July 1, 2019 by statute. Therefore, this alternative would have a less significant impact on wildfire hazards.

Hydrology (Water Quality)

Because this alternative does not include any early phasing-in of the prohibition on lead ammunition, there is no potential for increased copper deposition compared to what will exist once the statewide requirement becomes effective July 1, 2019 by statute. Therefore, this alternative would have a less than significant impact on water quality.

Recreation

July 1, 2019 implementation would minimize the impacts on recreation as compared to the proposed project. This alternative would give ammunition manufacturers the maximum amount of time to increase production of nonlead ammunition in anticipation of the increased demand by California hunters after July 1, 2019.

Cumulative Impacts

The no project alternative presents the lowest risk of creating impacts that, when combined with the impacts of land development, would create cumulative recreation related impacts that result in significant land use changes caused by decreased local revenue from hunting activity and decreased funding for habitat improvements and ecosystem management. However, as described in this Draft ED, it is also unlikely that the Proposed Program will result in adverse impacts on the environment and, in fact, the Proposed Program is likely to result in beneficial impacts.

e. Alternatives Considered and Dismissed

The following alternatives were considered but ultimately were not carried forward for detailed analysis because they did not meet most of the Program objectives, were determined to be infeasible, or did not avoid or substantially reduce one or more significant impacts of the Proposed Program.

The following alternatives were considered but ultimately were not carried forward for detailed analysis because they did not meet most of the Program objectives, were determined to be infeasible, or did not avoid or substantially reduce one or more significant impacts of the Proposed Program.

- Early implementation of the nonlead requirement within the California condor range was considered as a measure to further reduce the exposure of the birds to lead from spent ammunition. Nonlead ammunition is currently required for the take of big game mammals, nongame birds, and nongame mammals within the condor range. (Fish & G. Code, § 3004.5.) Full implementation of the requirement in this portion of the state would require only the addition of upland game birds such as wild turkeys, pheasants, band-tailed pigeons, quail and doves to the list of species requiring nonlead ammunition. Federally approved nontoxic shot is currently widely available in sizes suitable for waterfowl. These shot sizes are also effective for larger upland game species such as turkeys, pheasants, grouse and pigeons. However, nontoxic shot sizes suitable for smaller upland game species such as dove, quail and snipe are not widely available. Hunters in the California condor range currently account for nearly 36 percent of the total hunting effort for California quail and almost 25 percent of the total effort for mourning dove statewide. (CDFW, 2011.) In view of the limited availability of non-toxic shot in smaller sizes and the large numbers of hunters that would be affected, this alternative was determined to be particularly disruptive to hunting based recreation and therefore was not subject to further analysis.
- Implementing the phase-in of nonlead ammunition by specific calibers was also considered as a possible way of easing the transition to nonlead ammunition. Over 48 different calibers of nonlead centerfire rifle ammunition are available either online or at sporting goods stores in California. (Thomas, 2014.) However, not all of these calibers are equally available. Some, like .308 Winchester, .30-06 Springfield, and .223

Remington, are relatively easy to find, while others, like .22 long rifle, .243 Winchester, and .338 Winchester, are much less common. Some uncommon calibers may never be commercially available in nonlead versions. Under this alternative, the more popular, easier to find calibers would be phased in first, with the less common calibers phased in during the latter part of the program. This approach was intended to provide manufacturers more time to increase production of the less popular calibers. However, it was dropped from further consideration because of the difficulties it presented for enforcement staff and the inequity it created among hunters solely as a result of which caliber rifle they happened to possess.

f. Environmentally Superior Alternative

The Early Implementation Alternative is considered the environmentally superior alternative. That alternative offers the greatest benefit to the environment by achieving the greatest reduction in the use of lead ammunition at the earliest possible date. The anticipated impact to hazards and hazardous materials and hydrology (water quality) would continue to be less than significant. Notwithstanding the benefits to wildlife from reducing the use of lead ammunition, the Early Implementation Alternative would have the greatest impact on recreational opportunities, and as a result has the greatest risk of: (1) reducing local revenue, which in turn could result in land use changes; and (2) reducing revenue to CDFW that could be used for habitat improvement or ecosystem management. Although it is unlikely those environmental impacts associated with reduced recreational opportunities would be significant, the Early Implementation Alternative would not meet most of the Commission's Objectives for the Proposed Program. As described above, based on the limited capacity of manufacturers to increase production, and although this alternative was potentially feasible, this Draft ED concludes that it is likely not practicable to meet the demand for nonlead ammunition in California as early as 2015. Therefore, this alternative has potential for significant disruption of hunting-based recreation.

Chapter 6: *Report Preparation.*

This chapter lists the individuals involved in preparing this EIR:

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Appendix A

Proposed Regulatory Language

Amend Division 1, Subdivision 2, to read as follows:

Subdivision 2. Game ~~and Furbearers~~, Furbearers, Nongame, and Depredators

Section 250.1, Title 14, CCR, will be added as follows:

§ Section 250.1. Prohibition on the Use of Lead Projectiles and Ammunition Using Lead Projectiles for the Take of Wildlife.

(a) Purpose. This regulation phases in the requirements of Fish and Game Code Section 3004.5, which prohibits the use of any lead projectiles or ammunition containing lead projectiles when taking any wildlife with a firearm on or after July 1, 2019.

(b) Definitions.

(1) A projectile is any bullet, ball, sabot, slug, buckshot, shot, pellet or other device that is expelled from a firearm through a barrel by force.

(2) Nonlead ammunition is any centerfire, shotgun, muzzleloading, or rimfire ammunition containing projectiles certified pursuant to subsection (b)(3) or subsection (f).

(3) Shotgun ammunition containing pellets composed of materials approved as nontoxic by the U.S. Fish and Wildlife Service, as identified in Section 507.1 of these regulations, is considered certified.

(4) A nonlead projectile shall contain no more than one percent lead by weight, as certified pursuant to subsection (b)(3) or subsection (f).

(c) General Provisions.

(1) Except as otherwise provided in this section, it is unlawful to possess any projectile containing lead in excess of the amount allowed in subsection (b)(4) and a firearm capable of firing the projectile while taking or attempting to take wildlife.

(2) The possession of a projectile containing lead in excess of the amount allowed in subsection (b)(4) without possessing a firearm capable of firing the projectile is not a violation of this section.

(3) Nothing in this section is intended to prohibit the possession of concealable firearms containing lead ammunition, provided that the firearm is possessed for personal protection and is not used to take or assist in the take of wildlife.

(d) Phased Approach to Prohibit the Use of Lead Ammunition for the Take of Wildlife. The use of lead projectiles is authorized until the effective dates described in subsections (d)(1), (d)(2), and (d)(3).

(1) Effective July 1, 2015, it shall be unlawful to use, or possess with any firearm capable of firing, any projectile(s) not certified as nonlead when taking:

(A) Nelson bighorn sheep as authorized by Fish and Game Code Section 4902; or

(B) All wildlife in any wildlife area or ecological reserve, as described in sections 551, 552 and 630 of these regulations.

(2) Effective July 1, 2016, it shall be unlawful to use, or possess with any shotgun capable of firing, any projectile(s) not certified as nonlead as described in subsection (b)(3) when taking:

(A) Upland game birds as included in Fish and Game Code Section 3683, except for dove, quail, snipe, and any game birds taken under the authority of a licensed game bird club as provided for in sections 600 and 600.4 of these regulations;

(B) Resident small game mammals as defined in Section 257 of these regulations;

(C) Fur-bearing mammals as defined by Fish and Game Code Section 4000;

(D) Nongame mammals as defined by Fish and Game Code Section 4150;

(E) Nongame birds as defined by Fish and Game Code Section 3800; or

(F) Any wildlife for depredation purposes, regardless of whether the take is authorized by a permit issued pursuant to sections 401 or 402 of these regulations.

(3) Effective July 1, 2019, it shall be unlawful to use, or possess with any firearm capable of firing, any projectile(s) not certified as nonlead when taking any wildlife for any purpose in this state.

(e) Condor Range. [This subsection shall be repealed effective July 1, 2019]

Methods of take. Notwithstanding subsection (c)(3), it is unlawful to use, or possess with any firearm capable of firing, any projectile or ammunition containing any projectile not certified as nonlead when taking or attempting to take any big game as defined in section 350, nongame birds, or nongame mammals, in the area defined as the "California condor range" in subsection (a) of Fish and Game Code Section 3004.5.

(f) Nonlead Projectile and Ammunition Certification Process.

(1) Any person or manufacturer requesting to have their projectile(s) or ammunition certified as nonlead shall submit the information identified in subsection (2) below to the Department of Fish and Wildlife's Wildlife Branch in Sacramento. The department shall certify or reject the request within 60 business days of receipt.

(2) Information required for consideration of certification:

(A) Name of manufacturer of projectile or ammunition, address, and contact information;

(B) For projectile certifications, information shall include the following: caliber, weight in grains, product trade name or marketing line (if established), product or catalog number (SKUs or UPCs are acceptable), composition, percent content of lead by weight, and detailed unique identifying characteristics;

(C) For ammunition certifications, information shall include the following: caliber, cartridge designation, weight in grains of the projectile, product trade name or marketing line (if established), product or catalog number (SKUs or UPCs are acceptable), composition of projectile, percent content of lead by weight of projectile, detailed unique identifying characteristics of the projectile, and any unique identifying characteristics of the cartridge;

(D) Signed statement verifying all information provided is accurate; and

(E) Digital color image of the projectile(s) or ammunition.

(3) The department shall determine, based on the information supplied, whether the projectile contains no more than one percent of lead by weight.

(4) The department shall update the list of certified projectiles and ammunition not less than once annually and make it available on the department's web site.

(5) The department shall decertify and remove from the list any projectile(s) or ammunition it determines does not meet the standards set forth in this section.

Note: Authority cited: Sections 200, 202, 203 and 3004.5, Fish and Game Code. Reference: Sections 200, 202, 203, 203.1, 207, 2055, 3004.5, 3683, 3800, 4000, 4150, and 4902, Fish and Game Code.

Section 311, Title 14, CCR, will be amended as follows:

§ 311. Methods Authorized for Taking Resident Small Game.

The take or attempted take of any resident small game with a firearm shall be in accordance with the use of nonlead projectiles and ammunition pursuant to Section 250.1. Only the following may be used to take resident small game:

(a) Shotguns 10 gauge or smaller using shot shells only and incapable of holding more than three shells in the magazine and chamber combined. If a plug is used to reduce the capacity of a magazine to fulfill the requirements of this section, the plug must be of one piece construction incapable of removal without disassembling the gun.

(b) Shotgun shells may not be used or possessed that contain shot size larger than No. BB, except that shot size larger than No. 2 may not be used or possessed when taking wild turkey. All shot shall be loose in the shell.

(c) Muzzle-loading shotguns.

(d) Falconry.

(e) Bow and arrow (see Section 354 for archery equipment regulations).

(f) Air rifles powered by compressed air or gas and used with any caliber of pellet, except that wild turkey may only be taken with a pellet that is at least 0.177 caliber.

(g) In addition to the methods listed in (a), (b), (c), (d), (e), and (f) above, firearm rifles and pistols may be used for taking rabbits and squirrels only; except in Los Angeles County where rifles and pistols may not be used.

(h) In San Diego and Orange counties only, rabbits may be taken at any time during the open season by means of box traps. Such traps shall not exceed 24 inches in any dimension, shall be tended at least once every 24 hours, and shall show the name and address of the trap owner. All rabbits taken under this section shall be immediately killed and become a part of the daily bag limit.

(i) Electronic or mechanically-operated calling or sound-reproducing devices are prohibited when attempting to take resident game birds.

(j) Coursing dogs may be used to take rabbits.

(k) Archers hunting during any archery season may not possess a firearm while in the field engaged in archery hunting during an archery season.

(l) The use of live decoys is prohibited when attempting to take resident game birds.

(m) Pistols and revolvers may be used to take sooty and ruffed grouse in those counties only and for the season described in Section 300(a)(1)(E).

(n) Crossbows, except for provisions of Section 354(d) and (g).

(o) Dogs may be used to take and retrieve resident small game.

Note: Authority cited: Sections 200, 202 and 203, Fish and Game Code. Reference: Sections 200 and ~~203~~, 203 and 3004.5, Fish and Game Code.

Section 353, Title 14, CCR, will be amended as follows:

§ 353. Methods Authorized for Taking Big Game.

~~(a) Except for the provisions of subsections 353(b) through (h), Title 14, CCR, big game (as defined by Section 350, Title 14, CCR) may only be taken by rifles using centerfire cartridges with softnose or expanding projectiles; bow and arrow (see Section 354, Title 14, CCR, for archery equipment regulations); or wheellock, matchlock, flintlock or percussion type, including "in-line" muzzleloading rifles using black powder or equivalent black powder substitute, including pellets, with a single projectile loaded from the muzzle and at least .40 caliber in~~

~~designation. For purposes of Section 353, a “projectile” is defined as any bullet, ball, sabot, slug, buckshot or other device which is expelled from a firearm through a barrel by force.~~

(a) 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 which is expelled from a firearm through a barrel by force.

(c) Except for the provisions of the following subsections (d) through (j), big game may only be taken by rifles using centerfire cartridges with softnose or expanding projectiles; bow and arrow (see Section 354 of these regulations for archery equipment regulations); or wheellock, matchlock, flintlock or percussion type, including “in-line” muzzleloading rifles using black powder or equivalent black powder substitute, including pellets, with a single projectile loaded from the muzzle and at least .40 caliber in designation.

~~(b)(d)~~ 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.

~~(e)(e)~~ Pistols and revolvers using centerfire cartridges with softnose or expanding projectiles may be used to take deer, bear, and wild pigs.

~~(d)(f)~~ Pistols and revolvers with minimum barrel lengths of 4 inches, using centerfire cartridges with softnose or expanding projectiles may be used to take elk and bighorn sheep.

~~(e)(g)~~ Except as provided in subsection 354(j) of these regulations, crossbows may be used to take deer and wild pigs only during the regular seasons.

~~(f)(h)~~ Under the provisions of a muzzle loading rifle only tag, hunters may only possess muzzle-loading rifles as described in subsection ~~353(a)(c)~~ equipped with open or “peep” type sights only except as described in subsection ~~353(k)(l)~~.

~~(g)(i)~~ Under the provisions of a muzzle loading rifle/archery tag, hunters may only possess muzzle loading rifles with sights as described in subsection ~~353(f)(h)~~ archery equipment as described in Section 354 of these regulations; or both. For purposes of this subsection, archery equipment does not include crossbows, except as provided in subsection 354(j) of these regulations.

~~(h) Methods of take within the California condor range. Except as otherwise provided, it is unlawful to use or possess projectiles containing more than one percent lead by weight while taking or attempting to take any big game (as defined in Section 350, Title 14, CCR) in those areas described in Section 3004.5, Fish and Game Code.~~

~~(1) Except as otherwise provided, it is unlawful to possess any projectile containing lead in excess of the amount permitted in subsection 353(h) and a firearm capable of firing the projectile while taking or attempting to take any big game within the area described in subsection 353(h). The possession of a projectile containing lead in excess of the amount allowed in subsection 353(h) without possessing a firearm capable of firing the projectile is not a violation of this section.~~

~~(j)~~(j) Except as otherwise provided, while taking or attempting to take big game under the provisions of ~~Section 353~~this section or Section 354, ~~Title 14, CCR of these regulations~~, it is unlawful to use any device or devices which: 1) throw, cast or project an artificial light or electronically alter or intensify a light source for the purpose of visibly enhancing an animal; or 2) throw, cast or project an artificial light or electronically alter or intensify a light source for the purpose of providing a visible point of aim directly on an animal. Devices commonly referred to as “sniper scopes”, night vision scopes or binoculars, or those utilizing infra-red, heat sensing or other non-visible spectrum light technology used for the purpose of visibly enhancing an animal or providing a visible point of aim directly on an animal are prohibited and may not be possessed while taking or attempting to take big game. Devices commonly referred to as laser rangefinders, “red-dot” scopes with self-illuminating reticles, and fiber optic sights with self-illuminating sight or pins which do not throw, cast or project a visible light onto an animal are permitted.

~~(j)~~(k) Unless provided in these regulations or any other law, it is unlawful to possess a loaded muzzle-loading firearm in any vehicle or conveyance or its attachments which is standing on or along or is being driven on or along any public road or highway or other way open to the public.

For the purposes of this section, a muzzle-loading firearm shall be deemed to be loaded when it is capped or primed or has an electronic or other ignition device attached and has a powder charge and projectile or shot in the barrel or cylinder.

~~(k)~~(l) Upon application to the department, the department may issue a Disabled Muzzleloader Scope Permit, free of any charge or fee, to any person with a physical disability, as defined in ~~353(h)~~subsection (m), which prevents him/her from being able to focus on the target utilizing muzzle-loading rifles equipped with open or “peep” sights. The Disabled Muzzleloader Scope Permit authorizes the disabled hunter to use a 1X scope on a muzzle-loading rifle, as described in subsection ~~353(f)~~(h), with a muzzle-loading rifle only tag.

(1) Applications for a Disabled Muzzleloader Scope Permit as specified in Section 702 of these regulations shall be submitted to the department at the address specified on the application and shall include:

(A) Applicant's name

(B) Applicant's physical address

(C) Applicant's date of birth

(D) Applicant's Driver's License or DMV Number

(E) Applicant's telephone number

(F) Applicant's signature

(G) Medical Physician's or Optometrist's name

(H) Medical Physician's or Optometrist's business address

(I) Medical Physician's or Optometrist's business telephone number

(J) Medical Physician's State medical license number or Optometrist's State license number

(K) A description of the visual disability requiring this permit

(L) Medical Physician's or Optometrist's signature

(M) Signature of the authorizing department employee and date issued

(2) The applicant must have a valid hunting license for the year for which he/she is applying.

(3) Proof of meeting eligibility requirements may be met by providing a previously issued Disabled Muzzleloader Scope Permit.

(4) The valid Disabled Muzzleloader Scope Permit shall be in the hunter's immediate possession while hunting and shall be shown on demand to any person authorized to enforce this regulation.

(5) The Disabled Muzzleloader Scope Permit is valid from July 1 through June 30 of the following year or if issued after July 1 of the license year, it is valid beginning on the date issued through to the following June 30

~~(4)~~(m) For the purposes of this section a visual disability means a permanent loss, significant limitation, or diagnosed disease or disorder, which substantially impairs the vision of a hunter, preventing the hunter from viewing and aligning the sights of a muzzle-loading rifle with the target in order to hunt deer.

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.

Repeal Section 355, Title 14, CCR:

§ 355. Ammunition Authorized for Taking Big Game and Nongame Birds and Nongame Mammals in Condor Range.

~~In addition to those conditions provided for in sections 353 and 475, only centerfire rifle, centerfire pistol, muzzleloading, shotgun slug, and rimfire ammunition using projectiles certified pursuant to this section as containing no lead (as defined by subsection 353(h)) shall be used for the taking of big game and nongame birds and nongame mammals in condor range (see subsection 353(h)).~~

~~(a) Ammunition Certification Process. Any person or manufacturer of ammunition or projectiles wishing to have their ammunition or projectiles certified for hunting big game or nongame birds and nongame mammals in condor range shall submit the information identified in subsections (b)(1) (5) to the California Department of Fish and Game, Wildlife Programs Branch, Sacramento. The Department shall accept or reject the request within 60 days of receipt. The ammunition or projectiles whose request has been accepted will be added to the list entitled "Certified ammunition and projectiles for hunting big game and nongame birds and nongame mammals in condor range" maintained by the Department.~~

~~(b) Information required for consideration of certification:~~

~~(1) Name of Manufacturer of ammunition or projectile, address, and contact information.~~

~~(2) For ammunition certifications, information shall specify as to caliber, cartridge designation, and projectile. Projectile specifications shall include unique identifying characteristics and percent content of lead by weight.~~

~~(3) For projectile certifications, information shall specify as to unique identifying characteristics and percent content of lead by weight.~~

~~(4) Signed statement verifying that all information provided is accurate.~~

~~(5) Digital color image of projectile or ammunition.~~

~~(c) The Department shall determine, based on information supplied, if the projectile contains less than the percent lead content by weight as defined in 353(h).~~

~~(d) The Department shall update the list of certified ammunition and projectiles no less than once annually and make it available to hunters.~~

~~(e) The Department shall decertify and remove from the list any projectiles or ammunition if information is received that it does not meet the standards set forth in subsection (b) within 60 days of receipt.~~

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

Section 464, Title 14, CCR, will be amended as follows:

§ 464. Raccoon.

(a) Seasons and Areas:

(1) Raccoon may be taken from July 1 through March 31 in the following area: All of Imperial County and those portions of Riverside and San Bernardino counties lying south and east of the following line: Beginning at the intersection of Highway 86 with the north boundary of Imperial County; north along Highway 86 to the intersection with Interstate 10; east along Interstate 10 to its intersection with the Cottonwood Springs Road in Section 9, T6S, R11E, S.B.B.M.; north

along the Cottonwood Springs Road and the Mecca Dale Road to Amboy; east along Highway 66 to the intersection with Highway 95; north along Highway 95 to the California-Nevada state line.

(2) November 16 through March 31 in the balance of the state.

(b) Bag and Possession Limit: No limit.

(c) Method of Take:

(1) When taking raccoon after dark, pistols and rifles not larger than .22 caliber rimfire and shotguns using shot no larger than No. BB are the only firearms which may be used during this night period. (This regulation supersedes Sections 4001 and 4002 of the Fish and Game Code.) (See Sections 264 and 264.5 for light regulations.)

(2) The take or attempted take of any raccoon with a firearm shall be in accordance with the use of nonlead projectiles and ammunition pursuant to Section 250.1.

(d) Dogs may be permitted to pursue raccoons in the course of breaking, training or practicing dogs in accordance with the provisions of Section 265 of these regulations.

Note: Authority cited: Sections 200, 202, 203 and 4009.5, Fish and Game Code. Reference: Sections ~~200-203.1, 200, 202, 203, 203.1, 206, 207, 211-222, 4000-4004~~ 215, 220, 3004.5, 4000, 4001, 4002, 4003, 4004, and 4009.5, Fish and Game Code.

Section 465, Title 14, CCR, will be amended as follows:

§ 465. Methods for Taking Furbearers.

Furbearing mammals may be taken only with a firearm, bow and arrow, or with the use of dogs, or traps in accordance with the provisions of Section 465.5 of these regulations and Section 3003.1 of the Fish and Game Code. The take or attempted take of any furbearing mammal with a firearm shall be in accordance with the use of nonlead projectiles and ammunition pursuant to Section 250.1.

Note: Authority cited: Sections 200, 202, 203, 3003.1 and 4009.5, Fish and Game Code. Reference: Sections ~~200-203.1, 200, 202, 203, 203.1, 206, 207, 211-221, 215, 220, 3003.1, 4000-4004~~ 3004.5, 4000, 4001, 4002, 4003, 4004, and 4009.5, Fish and Game Code.

Section 475, Title 14, CCR, will be added as follows:

§ 475. Methods of Take for Nongame Birds and Nongame Mammals.

Nongame birds and nongame mammals may be taken in any manner except as follows:

(a) Poison may not be used.

(b) Recorded or electrically amplified bird or mammal calls or sounds or recorded or electrically amplified imitations of bird or mammal calls or sounds may not be used to take any nongame bird or nongame mammal except coyotes, bobcats, American crows and starlings.

(c) Fallow deer, sambar deer, axis deer, sika deer, aoudad, mouflon, tahr and feral goats may be taken only with the equipment and ammunition specified in Section 353 of these regulations.

(d) Traps may be used to take nongame birds and nongame mammal only in accordance with the provisions of Section 465.5 of these regulations and sections 3003.1 and 4004 of the Fish and Game Code.

(e) No feed, bait or other material capable of attracting a nongame mammal may be placed or used in conjunction with dogs for the purpose of taking any nongame mammals. Nothing in this section shall prohibit an individual operating in accordance with the provisions of Section 465.5 from using a dog to follow a trap drag and taking the nongame mammal caught in that trap.

~~(f) Methods of take within the California condor range. Except as otherwise provided, it is unlawful to use or possess projectiles containing more than one percent lead by weight while taking or attempting to take any nongame birds or nongame mammals in those areas described in Section 3004.5, Fish and Game Code.~~

~~(1) For purposes of Section 475, a "projectile" is defined as any bullet, ball, sabot, slug, buckshot, shot, pellet or other device which is expelled from a firearm through a barrel by force.~~

~~(2) Except as otherwise provided, it is unlawful to possess any projectile containing lead in excess of the amount permitted in subsection 475(f) and a firearm capable of firing the projectile while taking or attempting to take any nongame bird or nongame mammal within the area described in subsection 475(f). The possession of a projectile containing lead in excess of the amount allowed in subsection 475(f) without possessing a firearm capable of firing the projectile is not a violation of this section.~~

(f) The take or attempted take of any nongame bird or nongame mammal with a firearm shall be in accordance with the use of nonlead projectiles and ammunition pursuant to Section 250.1 of these regulations.

Note: Authority cited: Sections 200, 202, 203, 355, 3003.1, 3800 and 4150, Fish and Game Code. Reference: Sections 200, 202, 203, 203.1, 207, 355, 356, 2055, 3003.1, 3004.5, 3800 and 4150, Fish and Game Code.

Section 485, Title 14, CCR, will be amended as follows:

§ 485. American Crow.

(a) Shotgun, Falconry, and Archery Seasons, and Bag and Possession Limits.

	(1) Seasons	(2) Daily Bag and Possession Limits
Season:	The first Saturday in December and extending for 124 consecutive days	Bag Limit: 24 crows per day Possession Limit: double the daily bag limit
(3) Area:	Statewide: see closure area (d) below	

(b) Crows may only be taken by shotguns 10 gauge or smaller using shot shells only and incapable of holding more than three shells in the magazine and chamber combined, bow and arrow, and falconry. The take or attempted take of any crows with a firearm shall be in accordance with the use of nonlead projectiles and ammunition pursuant to Section 250.1. Crows may not be hunted from aircraft.

(c) No person shall kill or cripple a crow pursuant to this section without making a reasonable effort to retrieve the bird, and retain it in their actual custody at the place where taken or between that place and either: (1) their automobile or principal means of land transportation; or (2) their personal abode or temporary or transient place of lodging; or (3) a migratory bird preservation facility; or (4) a post office; or (5) a common carrier facility.

(d) Crows may not be taken in the following areas:

(1) Within the boundaries of the Trinity and Mendocino National Forests south of Highway 36.

(2) North and east of a line beginning at the mouth of the Eel River; south along the Eel River to the town of Alton; east on Highway 36 from the town of Alton to Highway 89 west of Chester; south and east on Highways 89 and 395 to Interstate 15 near Hesperia; south on Interstate 15 to Interstate 10; and east on Interstate 10 to the California-Arizona border.

(e) See Section 472(d) for the take of American crows causing depredation.

Note: Authority cited: Sections 355, 356 and 3800, Fish and Game Code. Reference: Sections 355, 356, 3004.5, and 3800, Fish and Game Code.

Appendix B

Notice of Preparation and Initial Study Checklist

Notice of Preparation

Notice of Preparation

To: All State Agencies

From: Eric Loft, Branch Chief

CDFW - Wildlife Branch

(Address)

1812 9th St., Sacramento, CA 95811

Subject: Notice of Preparation of a Draft Environmental Impact Report

The California Fish and Game Commission will be the Lead Agency and will prepare an environmental impact report for the project identified below. We need to know the views of your agency as to the scope and content of the environmental information which is germane to your agency's statutory responsibilities in connection with the proposed project. Your agency will need to use the EIR prepared by our agency when considering your permit or other approval for the project.

The project description, location, and the potential environmental effects are contained in the attached materials. A copy of the Initial Study (☒ is ☐ is not) attached.

Due to the time limits mandated by State law, your response must be sent at the earliest possible date but not later than 30 days after receipt of this notice.

Please send your response to Mr. Craig Stowers at the address shown above. We will need the name for a contact person in your agency.

Project Title: Prohibition on the Use of Ammunition Containing Lead for the Take of Wildlife with a Firearm

Project Applicant, if any: _____

Date October 28, 2014

Signature



Title

Branch Chief

Telephone

916-445-3555

Reference: California Code of Regulations, Title 14, (CEQA Guidelines) Sections 15082(a), 15103, 15375.

Appendix G

Environmental Checklist Form

NOTE: The following is a sample form and may be tailored to satisfy individual agencies' needs and project circumstances. It may be used to meet the requirements for an initial study when the criteria set forth in CEQA Guidelines have been met. Substantial evidence of potential impacts that are not listed on this form must also be considered. The sample questions in this form are intended to encourage thoughtful assessment of impacts, and do not necessarily represent thresholds of significance.

1. Project title: Prohibition on the Use of Ammunition Containing Lead for the Take of Wildlife
2. Lead agency name and address:
California Fish and Game Commission
1416 9th Street, Room 1320
Sacramento, CA 95814
3. Contact person and phone number: Eric Loft, Chief, Wildlife Branch (916) 445-3555
4. Project location: Statewide
5. Project sponsor's name and address:
California Department of Fish and Wildlife
1416 9th Street, Room 1208
Sacramento, CA 95814
6. General plan designation: NA 7. Zoning: NA
8. Description of project: (Describe the whole action involved, including but not limited to later phases of the project, and any secondary, support, or off-site features necessary for its implementation. Attach additional sheets if necessary.)
AB 711 (Chap. 742, Statutes of 2013) requires the Fish and Game Commission to promulgate regulations by July 1, 2015 that phase in the use of nonlead ammunition for the take of wildlife with a firearm in California. The statute requires nonlead ammunition to be used for the take of all wildlife in the state by July 1, 2019. See attached sheet for project description.
9. Surrounding land uses and setting: Briefly describe the project's surroundings:
The project occurs on wildlands in California that are open for hunting and the take of wildlife with a firearm.
10. Other public agencies whose approval is required (e.g., permits, financing approval, or participation agreement.)
NA

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

- | | | |
|--|---|---|
| <input type="checkbox"/> Aesthetics | <input type="checkbox"/> Agriculture and Forestry Resources | <input type="checkbox"/> Air Quality |
| <input checked="" type="checkbox"/> Biological Resources | <input type="checkbox"/> Cultural Resources | <input type="checkbox"/> Geology /Soils |
| <input type="checkbox"/> Greenhouse Gas Emissions | <input checked="" type="checkbox"/> Hazards & Hazardous Materials | <input type="checkbox"/> Hydrology / Water Quality |
| <input type="checkbox"/> Land Use / Planning | <input type="checkbox"/> Mineral Resources | <input type="checkbox"/> Noise |
| <input type="checkbox"/> Population / Housing | <input type="checkbox"/> Public Services | <input checked="" type="checkbox"/> Recreation |
| <input type="checkbox"/> Transportation/Traffic | <input type="checkbox"/> Utilities / Service Systems | <input type="checkbox"/> Mandatory Findings of Significance |

DETERMINATION: (To be completed by the Lead Agency)

On the basis of this initial evaluation:

- ☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
- ☐ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
- ☒ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
- ☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
- ☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signature



Date

10/31/14

Signature

Date

EVALUATION OF ENVIRONMENTAL IMPACTS:

- 1) A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).
- 2) All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.
- 3) Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.
- 4) "Negative Declaration: Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from "Earlier Analyses," as described in (5) below, may be cross-referenced).
- 5) Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:
 - a) Earlier Analysis Used. Identify and state where they are available for review.
 - b) Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.
 - c) Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.
- 6) Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.
- 7) Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.
- 8) This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.
- 9) The explanation of each issue should identify:
 - a) the significance criteria or threshold, if any, used to evaluate each question; and
 - b) the mitigation measure identified, if any, to reduce the impact to less than significance.

SAMPLE QUESTION

Issues:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
I. AESTHETICS -- Would the project:				
a) Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
II. AGRICULTURE AND FOREST RESOURCES: In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. -- Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Production (as defined by Government Code section 51104(g))?				
d) Result in the loss of forest land or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
de) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
III. AIR QUALITY -- Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Create objectionable odors affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
IV. BIOLOGICAL RESOURCES -- Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?				
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
V. CULTURAL RESOURCES -- Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
VI. GEOLOGY AND SOILS -- Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
VII. GREENHOUSE GAS EMISSIONS --				
Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
VIII. HAZARDS AND HAZARDOUS MATERIALS - Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
IX. HYDROLOGY AND WATER QUALITY --				
Would the project:				
a) Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
j) Inundation by seiche, tsunami, or mudflow?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
X. LAND USE AND PLANNING - Would the project:				
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
XI. MINERAL RESOURCES -- Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
XII. NOISE -- Would the project result in:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
XIII. POPULATION AND HOUSING -- Would the project:				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
XIV. PUBLIC SERVICES				
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
XV. RECREATION --				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
XVI. TRANSPORTATION/TRAFFIC -- Would the project:				
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
XVII. UTILITIES AND SERVICE SYSTEMS -- Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
could cause significant environmental effects?				
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Comply with federal, state, and local statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
XVIII. MANDATORY FINDINGS OF SIGNIFICANCE --				
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Note: Authority cited: Sections 21083, 21083.05, Public Resources Code. Reference: Section 65088.4, Gov. Code; Sections 21080, 21083.05, 21095, Pub. Resources Code; *Eureka Citizens for Responsible Govt. v. City of Eureka* (2007) 147 Cal.App.4th 357; *Protect the Historic Amador Waterways v. Amador Water Agency* (2004) 116 Cal.App.4th at 1109; *San Franciscans Upholding the Downtown Plan v. City and County of San Francisco* (2002) 102 Cal.App.4th 656.

Revised 2009

Project Description

Assembly Bill 711 (Chapter 742, Statutes of 2013) was signed by the Governor on October 11, 2013 and became effective January 1, 2014. As enacted, Fish and Game Code section 3004.5 requires full implementation of the statute's ban on the use of nonlead ammunition by July 1, 2019; after this date, nonlead ammunition will be required when taking any wildlife with a firearm statewide. In addition, section 3004.5 requires that by July 1, 2015, the Fish and Game Commission (Commission) must promulgate regulations that phase in the statute's requirements, and that, if any of the statute's requirements can be implemented practicably, in whole or in part, in advance of July 1, 2019, the Commission shall implement those requirements.

Beginning in January 2014, the California Department of Fish and Wildlife (Department) initiated an intensive public outreach effort designed to solicit ideas from both hunters and nonhunters on the least disruptive way to phase in the transition from traditional lead to nonlead ammunition consistent with section 3004.5. The Department shared a "starting point" proposal with the public at a total of 16 outreach meetings throughout the state, from Susanville to San Diego. This starting point proposal, as modified by public input received at these meetings, formed the basis for the proposed regulatory language adding a new Section 250.1 to Title 14, California Code of Regulations. The draft regulations constitute the proposed project for the purposes of this environmental document. See Appendix A for the draft regulatory text.

By way of background, ammunition falls into several broad categories including centerfire, rimfire, shotshells, and balls or sabots used in muzzleloading weapons. Centerfire ammunition is available in a variety of sizes (calibers) for both rifles and pistols and is most commonly used for the take of big game animals. Rimfire ammunition is available in smaller sizes, primarily .22 and .17 caliber, and is used most commonly for the take of small game mammals and the control of nongame "varmint" species such as ground squirrels. Shotgun ammunition comes in a variety of gauges and a range of shot or pellet sizes. Shotshells are most commonly used for waterfowl and upland game birds, although larger shot sizes (size 0 or 00 buckshot) and shotgun "slugs" may be used for the take of big game species. Balls and sabots are typically used for the take of big game species using muzzleloading rifles.

The proposed regulations' phasing reflects the relative availability (by both type and volume) of nonlead rifle and shotgun ammunition. Nonlead shotgun ammunition has been required for the take of ducks and geese nationwide since 1991 and nonlead shotshells in waterfowl sizes are widely available. These shells are suitable for the take of larger upland game birds such as pheasants, grouse, band-tailed pigeons and wild

turkeys. They may also be effective for the take of small game mammals, furbearing mammals, and nongame species. Nonlead shotgun shells in smaller shot sizes for dove, quail, and snipe are produced, but are currently not available in the volume necessary to supply the more than 170,000 quail and dove hunters in the state. Nonlead centerfire rifle ammunition is available in the more commonly used big game calibers such as .270, .30-06, and .308. Nonlead ammunition has been required for the take of big game mammals in the condor range since 2008 and the volume of nonlead ammunition has been sufficient to supply the 48,000 deer hunters within the condor range.

Phase 1

Effective July 1, 2015, nonlead ammunition will be required when taking all wildlife on state Wildlife Areas and Ecological Reserves. These Department lands constitute approximately 925,000 acres in California, with high ecological values and some of these areas are popular with hunters. In addition, nonlead ammunition will be required for hunters taking Nelson bighorn sheep in California's desert areas. This requirement will affect a small number of hunters; in 2014 only 14 tags were issued for bighorn sheep statewide. A similar number is anticipated for the 2015 season.

Phase 2

Effective July 1, 2016, nonlead ammunition will be required when taking upland game birds with a shotgun, except for dove, quail, and snipe, and any game birds taken under the authority of a licensed game bird club as provided in sections 600 and 600.4, Title 14, California Code of Regulations. In addition, nonlead ammunition will be required for the take of resident small game mammals, furbearing mammals, nongame mammals, nongame birds, and any wildlife for depredation purposes, with a shotgun statewide. However, in light of the uncertainty regarding the retail availability of nonlead centerfire and rimfire ammunition in smaller calibers, it will still be legal to take small game, furbearing, and nongame mammals, as well as nongame birds and wildlife for depredation purposes with traditional lead rimfire and centerfire ammunition during phase 2.

Phase 3

Pursuant to Fish and Game Code section 3004.5, effective July 1, 2019, only nonlead ammunition may be used when taking any wildlife with a firearm for any purpose in California.

Nonlead Implementation - Initial Study

Impact Significance Analysis

A. Less Than Significant Impact

1. IV(a) - Biological Resources. Beneficial and less than significant impacts may occur to species identified as a candidate, sensitive, or otherwise special status as a result of the proposed action. Whereas hunting activity is regulated generally by regulations for specific hunt programs, the proposed action is limited to the phasing in of a ban on lead ammunition that will become effective, regardless, as of July 1, 2019. Thus, the proposed action may benefit listed and special status species such as bald and golden eagles by reducing the potential ingestion of lead from carcasses and gut piles from animals killed with lead ammunition.

2. VIII(h) - Hazards and Hazardous Materials. Less than significant impacts may occur regarding the exposure of people or structures to significant risk of loss, injury, or death from wildfire as a result of the proposed action. A study completed by the US Forest Service in August, 2013 (Research Paper RMRS-RP-104; A Study of Ignition by Rifle Bullets) concludes that steel jacketed and solid copper bullets could reliably cause ignition possibly due to their larger fragment size and the overall "hardness" of the materials when compared to lead. However, most of the ignitions were the result of test firing bullets directly into a steel target, which caused the bullet to fragment and the fragments to then fall into a deep bed of peat (a very fine and dry organic material). These conditions are not often encountered in actual hunting situations; the targets are soft-bodied and tend to dampen fragmenting and heating of bullets as they travel to the target, and the substrates into which those fragments may fall are also not typical of conditions found while hunting.

In addition, it should be noted the study referenced above pertained only to rifle bullets and not nonlead loads fired from shotguns. The smaller size of the projectile (shotgun pellets) and the low muzzle velocities associated with this weapon type may mitigate against the heating identified with nonlead rifle bullets. Moreover, the target zone (mainly slightly to severely above a perpendicular plane) would serve to slow down projectile speeds and allow more time for cooling before hitting any ground based ignition sources.

B. Potentially Significant Impact

XV(b) - Recreation. Although not specifically suggested by the Appendix G Initial Study Checklist, the Department notes that in the event that retail availability of nonlead ammunition fails to meet the demand of California hunters, a potentially significant impact on hunting based recreation in California may occur as a result of the proposed action. Conflicting information regarding market availability and overall cost has been presented by proponents and opponents of the law and has informed the Department's

development of the proposed action. For example, one study, sponsored by the National Shooting Sports Foundation (Southwick Associates 2014), predicts that hunting participation in California may drop by as much as 36% as a result of the proposed regulations. However, a second study sponsored by Audubon California, Defenders of Wildlife, and the Humane Society of the United States (Thomas, 2014) concluded that nonlead ammunition was already commercially available and a two year transition period was adequate to allow manufacturers to adjust for the anticipated increase in demand.

Research by the California Department of Fish and Wildlife indicates that while many different nonlead bullets and cartridges have been certified by the Fish and Game Commission and are advertised for sale by different manufacturers, very few of them are actually available for purchase either in sporting goods stores that typically sell ammunition or from on-line vendors. Furthermore, bullets and cartridges for calibers considered to be "uncommon" are essentially unavailable for purchase by California hunters. Additionally, costs are often substantially higher for nonlead ammunition of all calibers. All indications from ammunition manufacturers suggest they will not be increasing production of nonlead ammunition and most likely will not be able to meet the demand the legislation will create in California.

For these reasons, potentially significant impacts to recreation may occur as a result of: 1) requiring hunters to use nonlead ammunition that may not be available for purchase, which, in turn, may reduce hunting activity in the State; 2) hunters choosing not to participate in their chosen recreational activity due to the substantially higher costs – either through purchasing more expensive nonlead ammunition or purchasing new weapons, barrels or chokes – to comply with the new regulatory requirements.

Appendix C

Scoping Report

Environmental Document for the Phasing of Nonlead Ammunition Requirement

Adding Section 250.1, Amending Sections 311, 353, 464, 465, 475, and 485, as well as Repealing Section 355 of Title 14 of the California Code of Regulations

**Prepared by the California Department of Fish and Wildlife for the California Fish and Game
Commission**

January 2015

Introduction

On October 11, 2013, the Governor signed Assembly Bill 711 (AB 711), which became effective January 1, 2014. (Stats. 2013, ch. 742, § 2, amending Fish & G. Code, § 3004.5.) In general, as enacted, Section 3004.5 requires the use of nonlead ammunitions statewide no later than July 1, 2019 when taking any wildlife with a firearm. More specifically as to the advanced phasing that is a subject of the proposed program, Section 3004.5 requires that by July 1, 2015, the Commission must promulgate regulations that phase-in the statute's requirements, and that, if any of the statute's requirements can be implemented practicably, in whole or in part, in advance of July 1, 2019, the Commission shall implement those requirements. (Fish & G. Code, § 3004.5, subd. (i)).

The Proposed Program is the phasing-in of the requirement to use nonlead ammunition for the take of wildlife no later than July 1, 2019. In the first phase, effective July 1, 2015, nonlead ammunition will be required when taking all wildlife on state Wildlife Areas and Ecological Reserves. In addition, nonlead ammunition will be required for hunters taking Nelson bighorn sheep in California's desert areas. In phase two, effective July 1, 2016, nonlead ammunition will be required when taking upland game birds with a shotgun, except for dove, quail, and snipe, and any game birds taken under the authority of a licensed game bird club as provided in sections 600 and 600.4 of title 14 of the California Code of Regulations. In addition, nonlead ammunition will be required for the take of resident small game mammals, furbearing mammals, nongame mammals, nongame birds, and any wildlife for depredation purposes, with a shotgun statewide. In the final phase, effective July 1, 2019, pursuant to Fish and Game Code section 3004.5 only nonlead ammunition may be used when taking any wildlife with a firearm for any purpose in California.

Initial Study and Notice of Preparation (NOP)

An NOP for the Proposed Program was prepared and circulated on October 31, 2014. The NOP included the Initial Study which provided a project description and a preliminary, relatively brief

environmental impact analysis for the Proposed Program. This started a 30-day scoping period, which ended on December 1, 2014.

Scoping Meeting Notification

CDFW noticed stakeholders about the NOP, scoping period, and scheduled scoping meeting through the following methods:

- Posting in the State Clearinghouse
- Hard copy mailing of the NOP to a list of 80 individuals and affected stakeholders
- Email notice of the NOP with a link to access online was sent to the Commission's listserv of 185 recipients, including agencies, organizations, and individuals that have shown interest in the project
- Information was posted on CDFW's public notice website

Scoping Meeting

CDFW conducted one scoping meeting, held from 1:00 P.M. to 3:00 P.M. on Friday, November 14, 2014 at CDFW's Wildlife Branch located at 1812 9th Street, Sacramento CA 95811. The meeting was intended to solicit input from the public and interested public agencies regarding the nature and scope of the environmental impacts to be addressed in the Draft Environmental Document (Draft ED).

At the beginning of the meeting, staff made a brief presentation in order to provide an overview of the existing program, the legal background leading to this Draft ED, the objectives and range of information to be included in the Program, and the CEQA process generally.

An interactive session followed, where CDFW staff was available to receive comments, answer questions and provide information about the Program. During the scoping meeting, participants also were encouraged to submit written comments, or to submit additional comments by mail or email before close of the comment period on December 1, 2014. Approximately 11 members of the public attended the scoping meeting. Any written comments received during the scoping period are also summarized in this report.

Other Public Involvement Strategies

In addition to soliciting and collecting comments on the project during the scoping period, CDFW and the Commission conducted an extensive, pre-notice public outreach effort between January and October of 2014; the dates and location of these meetings is listed in the table below. In addition to 16 public workshops and meetings held throughout the state listed in the table below, CDFW also contacted representatives of the ammunition manufacturing and distribution sectors for their input on the proposed phasing. A meeting with ammunition retailers was held at the Yolo Basin Wildlife Area on September 3, 2014. Letters requesting input from major ammunition manufacturers were sent on August 26, 2014, to Barnes Bullets, Inc., Federal Premium Ammunition, Hornady Manufacturing, Kent Cartridge, Magtech Ammunition Company, Inc., Nosler, Remington Arms Company, LLC, Weatherby, Inc., and Winchester Ammunition. Finally, CDFW also sought public input at international sporting goods

shows and at meetings of the National Wild Turkey Federation in Vacaville, Ducks Unlimited in Corning, and the Director's Hunting Advisory Committee in Sacramento.

PUBLIC OUTREACH MEETINGS

<u>Date</u>	<u>Meeting Type and Location</u>
January 11, 2014	International Sportsmen's Exposition, Sacramento
January 15, 2014	Wildlife Resources Committee (WRC) Meeting, Van Nuys
March 1, 2014	National Wild Turkey Federation, Vacaville
March 18, 2014	Director's Hunting Advisory Committee, Sacramento
March 28-29, 2014	Fred Hall Show, Del Mar
April 15, 2014	Public Workshop, Ventura
June 3, 2014	Public Workshop, Eureka
July 19, 2014	Ducks Unlimited Meeting, Corning
July 19, 2014	Public Workshop, Redding
July 28, 2014	WRC Meeting, Sacramento
July 29, 2014	Public Workshop, Rancho Cordova
August 5, 2014	Public Workshop, San Diego
August 12, 2014	Public Workshop, Fresno
August 19, 2014	Public Workshop, Rancho Cucamonga
September 17, 2014	Regulation Recommendation at WRC, Sacramento
October 25, 2014	Public Workshop, Susanville

Scoping Comment Summaries

This section summarizes the range of scoping comments received through the scoping period. These comments raised issues that will be taken into consideration by CDFW and the Commission in preparation of the Draft ED. The summary of comments presented in this section is organized by topic area. This organization does not represent the relative importance among comments or topic areas, but rather is intended to facilitate presentation of comments in an orderly manner.

In total, 50 written comments from 45 unique individuals were received through the scoping process. This included a total of 49 emails from 45 unique individuals, and 1 hard-copy letter from an individual who also submitted an email. A single letter or email often contained more

than one scoping-related comment; these have been separated out and grouped accordingly. Comments given orally at the scoping meeting are also included below. Copies of written comments received are provided in Appendix F of the Draft ED.

General Comments

One email asked for clarification of the statutory language, specifically related to an exemption for government agencies that were using firearms in carrying out their statutory duties.

One email asked that the law be retracted unless there was scientific data supporting the claim of benefits to wildlife.

Eleven emails stated their support of the prohibition on non-lead ammunition. Commentators supported the prohibition for a variety of reasons. Some noted the benefit to the environment and the benefit to human health from lowering lead levels in the environment. Others requested an earlier implementation date to avoid any additional harm to wildlife from delays. A few commentators requested the ban in its entirety be implemented in 2015.

Nine commentators asked for the Commission to not implement the law.

One commentator suggested an accelerated phase-in alternative to be analyzed in the environmental document. This would phase-in the use of nonlead ammunition for big-game caliber ammunition 4 years earlier than in the program presented at the scoping meeting, and phase-in small-game caliber ammunition 2 years faster. The commentator noted their belief that ammunition was available to support this phase-in scheme, and that this would diminish the risks to wildlife from lead ammunition. If this suggested alternative was not analyzed, the commentator asked that the environmental document analyze the risks of not using the accelerated phase-in.

One commentator suggested that these regulations would be exempt from CEQA as the implementation of AB 711 is not a discretionary action and would have a net beneficial impact on the environment.

Two comments (one via email and one via letter) asked for public health advisories warning hunters about the potential human health impacts from consuming game meat shot with lead ammunition. Additionally, one of the commentators asked that the environmental document analyze the potential human health impacts from consumption of lead ammunition.

Two commentators asked about the incentives for hunters that would be included as stated in the Governor's signing statement to AB 711.

One commentator asked for the environmental document to provide additional scientific data to support the law.

One commentator asked that the regulations include criteria explaining the Director's discretion under AB 711 not to implement the nonlead ammunition ban.

One commentator asked that the draft environmental document set forth clear significance standards.

Biological Resources Comments

Two comments expressed doubts that the use of nonlead ammunition would lead to any increased benefit for wildlife.

Five commentators noted that nonlead ammunition was less effective than lead ammunition. The letters suggested that nonlead ammunition wounds or cripples game, but does not kill it. One pointed in particular to the effects of steel bullets on birds. Additionally, one letter suggested that hunter education was needed regarding the proper use of non-lead ammunition to avoid it being used ineffectively and leading to wounded and lost game.

One commentator suggested that decreased hunting would lead to an increase in depredation and deleterious effects on wildlife habitat.

One commentator suggested that decreased hunting would lead to an increase in the rodent population and in rodent-borne diseases.

Five comments discussed the budget impacts and loss of revenue that could occur if hunting in the state decreases. They suggested this could lead to lower levels of enforcement, less money for wildlife management, and have an adverse impact on businesses in the state.

One email supported a finding of a less than significant impact on biological resources. The commentator stated that the only impact on biological resources would be beneficial, and therefore less than significant.

Hazards and Hazardous Material Comments

Two comments dealt with the potential for increased wildfires. One commentator suggested the impact on wildfires would be less than significant because sparks occurred from target practice and thus it was a moot point as related to the use of nonlead ammunition in hunting. The second commentator stated the use of nonlead ammunition could lead to an increase in wildfires.

Hydrology (Water Quality) Comments

Oral comments presented at the scoping meeting requested further analysis of the toxicity of alternative ammunitions, in particular the increased risk of copper toxicity around water sources.

Recreation Comments

One commentator stated that the ban on lead ammunition would be very disruptive to the hunting community.

Fourteen comments expressed concerns that this requiring use of nonlead ammunition would lead to increased costs for hunters due to the increased cost of nonlead ammunition. Some emails stated the cost of ammunition would be prohibitive to participation in hunting, and would prevent the younger generation from participating. Some requested that the implementation be delayed in order to alleviate this cost.

Fourteen commentators expressed concern that nonlead ammunition would not be available to meet hunting demands. These comments fell into a few categories. Many commentators suggested that nonlead ammunition alternatives were not readily available for purchase. Some were concerned that nonlead ammunition did not exist for the types of guns they used when hunting, and they would therefore be required to purchase new firearms. Air guns, muzzleloaders, and antique shotguns were specifically mentioned. Other comments stated it was unlikely that ammunition manufacturers would be able to increase their production of nonlead ammunition in order to meet new demand in California.

One commentator stated the suggested impact on recreation was exaggerated and speculative given that the hunting community was a low percentage of the state's population, and that the relative expense of ammunition was low compared to the total overall cost of hunting.

One commentator noted the limited hunting opportunities for disabled hunters and how this could be affected by the use of nonlead ammunition.

Note: No comments were received that pertained directly to Aesthetics, Agriculture and Forestry Resources, Air Quality, Cultural Resources, Geology/Soils, Greenhouse Gas Emissions, Land Use/Planning, Mineral Resources, Noise, Population/Housing, Public Services, Recreation, Transportation/Traffic, Utilities/Service Systems, or Mandatory Findings of Significance

Appendix D

Scoping Meeting Notice



State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
Director's Office
1416 Ninth Street, 12th Floor
Sacramento, CA 95814
www.wildlife.ca.gov

EDMUND G. BROWN JR., Governor
CHARLTON H. BONHAM, Director



November 4, 2014

NOTICE OF PUBLIC SCOPING MEETING

To Whom It May Concern:

The California Department of Fish and Wildlife (CDFW) is preparing a draft environmental document to address potential impacts resulting from the implementation of the statewide ban on lead ammunition for the take of wildlife with a firearm. Pursuant to CEQA Guidelines Section 15082 (c), a public scoping meeting will be held to identify potentially significant effects on the environment that may result from the proposed regulations, as well as any feasible mitigation measures that should be addressed in the draft environmental document. CDFW has prepared an Initial Study and Notice of Preparation for the proposed action. These documents can be accessed on our web page at:

<https://www.wildlife.ca.gov/Notices>

The scoping meeting is scheduled from 1:00 P.M. to 3:00 P.M. on Friday, November 14, 2014 at CDFW's Wildlife Branch located at 1812 9th Street, Sacramento, CA 95811. If you are unable to attend the meeting, comments may be provided by e-mail to Craig Stowers (craig.stowers@wildlife.ca.gov) or by letter to the following address:

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

Conserving California's Wildlife Since 1870

Appendix E

Materials Provided During Scoping Meeting

Phasing in the Use of Nonlead Ammunition

Public Scoping Meeting

November 14, 2014

Sacramento, CA



Overview

- ☐ The law and signing message
- ☐ Summary of public outreach
- ☐ DFW perspective on availability
- ☐ Starting point proposal and revisions
- ☐ Proposed timeline for environmental review



Highlights of the law and signing message

- ☐ Maintain existing Condor zone restrictions
- ☐ Maintain current nonlead certification process
- ☐ Establish regulations by July 2015 that phase-in requirements
- ☐ Full implementation by 2019
- ☐ Implement as soon as *practicable*
- ☐ In a manner *least disruptive* to hunters



Outreach to date

1. January 11 – International Sportsmen’s Expo
2. January 15 – WRC Meeting, Van Nuys
3. March 1 - Natl. Wild Turkey Fed., Vacaville
4. March 18 – Director’s Hunting Advisory Committee, Sacramento
5. March 28-29 – Fred Hall Show, Del Mar
6. April 15 – Public Workshop, Ventura
7. June 3 – Public Workshop, Eureka
8. July 19 – DU Meeting, Corning
9. July 19 – Public Workshop, Redding
10. July 28 – WRC Meeting, Sacramento
11. July 29 – Public Workshop, Rancho Cordova
12. August 5 – Public Workshop, San Diego
13. August 12 - Public Workshop, Fresno
14. August 19 – Public Workshop, Rancho Cucamonga
15. Sept. 17 – Regulation Recommendation at WRC, Sacramento
16. Oct, 25 – Public Workshop, Susanville



CDFW perspective on availability

- ☐ Ammunition in general is in short supply
- ☐ Product vs retail availability
- ☐ Nontoxic shot in sizes used for waterfowl is widely available
- ☐ Nontoxic shot in smaller sizes is produced but is not widely available
- ☐ Nonlead centerfire ammunition is generally available, but concerns about available volume
- ☐ Nonlead rimfire ammunition extremely limited
- ☐ Starting point phasing reflects this perspective



Comments received to date

Specific comments on phasing:

1. Postpone implementation until manufacturers can develop available and affordable substitutes
2. A longer phase-in period would be more fair
3. Defer nonlead requirement on public lands to 2016 or 2019
4. Delay the ban for licensed game bird clubs



Comments received (cont.)

5. Allow an exception for older firearms
6. Allow muzzleloaders to continue to use lead
7. Require full implementation in 2015
8. Complete phase-in of nonlead by 2016
9. Build in as much flexibility as possible
10. Post list of comments on DFW web page



DFW starting point and revised proposal

*Original: 2015 - Nonlead ammunition
required for:*

- CDFW Wildlife Areas and Ecological Reserves
- Nelson bighorn sheep

Revised:

- No changes from starting point proposed



DFW starting point and revised proposal

Original: 2016 - Nonlead ammunition required for:

- Larger (most) game birds, including turkeys (waterfowl size shot)
- Dove, quail, and snipe excluded
- Small game mammals (by shotgun)
- Non-game, depredation and furbearers (by shotgun)

Revised:

- *Except on Licensed Game Bird Clubs (2019)*



Environmental review timeline

- ☐ October 31, 2014 – Initial Study/NOP filed
- ☐ November 14, 2014 – Public Scoping Meeting
- ☐ December 1, 2014 – NOP comments due
- ☐ January 5, 2015 – Draft Environmental Document
- ☐ February 19, 2015 – Draft ED comments due
- ☐ March 26, 2015 – Final Environmental Document
- ☐ April 8, 2015 – FGC adoption hearing in Santa Rosa



Comments?

Comments may be e-mailed to:

Craig.Stowers@wildlife.ca.gov

or

Department of Fish and Wildlife
1812 9th Street
Sacramento, CA 95811
Attention: Craig Stowers



Appendix F

Written Comments Received During Scoping Period

From: [Ed Bradley](#)
To: [Stowers, Craig@Wildlife](mailto:Stowers_Craig@Wildlife)
Subject: AB 711 Impact Significance Analysis
Date: Friday, November 07, 2014 9:55:08 AM

Dear Mr. Stowers,

I appreciate the opportunity to comment on the AB 711 report. The last section, Section B, Potentially Significant Impact, adequately sums it up for me personally. I am a 73 year old California native and an upland game hunter for over 50 years. The shotguns I have used for my hunting are quality, vintage guns purchased in the 1960s. None of these shotguns are safe to use with the currently available steel shot. Bismuth and some other non lead shells are not readily available and can cost as much as \$75.00 per box of 25. Even if these shells could be found on local dealer's shelves, the price is prohibitive.

I mentioned in an earlier comment that in 50 years of upland game hunting, I have only seen a game warden in the field one time. I think AB 711 is unenforceable! If hunting participation drops significantly in the state, the California Dept. of Fish and Wildlife budget will be substantially impacted. This will undoubtedly result in fewer field agents protecting California wildlife.

Finally, the participation of radical Animal Rights Organizations in the Commission's meetings is absurd! These groups have vowed to end all hunting in the United States, one state at a time. It is not surprising that some states have banned the activities of some of the AR groups, especially the HSUS.

Thank you for the opportunity to comment,

Ed Bradley

Temecula, CA
951-775-2898

From: [Scott McMorow](#)
To: [Stowers, Craig@Wildlife](#)
Subject: AB 711 Public Comment
Date: Thursday, November 06, 2014 6:55:24 PM

Dear President Sutton:

I respectfully request that the Commission not take an accelerated approach to implementing AB 711.

The Department of Fish and Wildlife's Notice of Preparation states that "that while many different nonlead bullets and cartridges have been certified by the Fish and Game Commission and are advertised for sale by different manufacturers, very few of them are actually available for purchase either in sporting goods stores that typically sell ammunition or from on-line vendors. Furthermore, bullets and cartridges for calibers considered to be "uncommon" are essentially unavailable for purchase by California hunters. Additionally, costs are often substantially higher for nonlead ammunition of all calibers. All indications from ammunition manufacturers suggest they will not be increasing production of nonlead ammunition and most likely will not be able to meet the demand the legislation will create in California."

Additionally, one study, sponsored by the National Shooting Sports Foundation (Southwick Associates 2014), predicts that hunting participation in California may drop by as much as 36% as a result of the proposed regulations.

Governor Brown wrote in his signing message for AB711 that incentives for hunters should be considered during the implementation of AB 711.

Please do not implement an accelerated roll out of AB 711. Instead, allow ammunition manufacturers, retail stores, and hunters the time needed to adjust to this legislation.

Respectfully,
Scott McMorow

From: [James Emley](#)
To: Soto_Mitch@Wildlife
Subject: AB 711
Date: Friday, November 14, 2014 7:50:58 AM

Hi Mitch, Here is the way they do it in hunting friendly states. Unlike the California Fish & Wildlife other states promote hunting and prosper because of it. Right now in Texas quite a few state parks are shut down to camping and Open to Hunting, Deer Hunting. California has given me bad leg joints because I am required to walk 3 miles in and 3 miles out to hunt around D-16 and how about trying to drag a 250# animal 3 miles? Ridiculous! How come the Department will not stock game birds? They used to but now the money is spent on enforcement, rangers who carry 9MM pistols and are wearing flack jackets. After the fires (San Felipe Wildlife area) quail hunting is a Joke, nothing out there but coyote scat! Why don't you all start managing wildlife instead of trying to figure out what new laws to enforce? The system is definitely broken and as most see it getting worse by the minute.

Regards,

James H. Emley
732 Chestnut St.
Escondido, CA 92025

----- Original Message -----

Subject: Gear Up for Great Texas Hunting and Fishing Ahead!

Date: Wed, 22 Oct 2014 11:01:00 -0500

From: Texas Parks and Wildlife Department <tpwd@service.govdelivery.com>

Reply-To: tpwd@service.govdelivery.com

To: jhegci@gmail.com

Get your license in time for an excellent Texas deer season and winter trout stockings.
Having trouble viewing this email? [View it as a Web page](#)



The outdoors is calling! From November deer hunting to winter trout stocking, now is your chance to take advantage of all Texas has to offer. Gear up for another great year of Texas hunting and fishing and buy your new license today!

Get your license [online](#) or by calling 1-800-895-4248.



Need a Place to Hunt or Fish?

Purchase your [Annual Public Hunting permit](#) (\$48) for access to more than

a million acres of public hunting land all year.

And visit a [Neighborhood Fishin' lake](#) for great fishing opportunities close to home. Lakes are stocked every two weeks, so there's nearly always a fresh supply of fish to take your bait.

Starting in early December, [trout will be stocked](#) in more than 100 locations statewide, including the 16 Neighborhood Fishin' lakes.

Be sure to check the 2014-2015 Outdoor Annual for Texas hunting and fishing regulations, season dates and bag limits. This year, find it [online](#) or by downloading the new, official [Outdoor Annual – Texas Hunting and Fishing Regulations App](#), available for iOS (Apple) and Android devices.

And check out the [deer hunting forecast](#) for season predictions from Texas Parks and Wildlife biologists.

Let the adventure begin!



TPWD Logo



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tpwd.texas.gov

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From: [Ted Carman](#)
To: Stowers_Craig@Wildlife
Subject: AB 711
Date: Monday, November 24, 2014 6:29:38 PM

Hello Craig,

I am afraid that I will be unable to afford to hunt or take my daughter, who has recently taken an interest in the outdoors, hunting if we are forced to switch to non lead ammo.

Please consider my situation.

Sincerely,

Ted Carman

From: [Steve Brott](#)
To: [Stowers, Craig@Wildlife](mailto:Stowers_Craig@Wildlife)
Subject: Ab711 opposition
Date: Monday, November 24, 2014 5:46:18 PM

I'd like to be able to list the reasons I oppose ab711, but I'd like to speak of the truth in the details re this bill.

This bill is aimed directly at the hunting community, the constituents of the CADFG. Remember us, the hunters, those who pay your paychecks. We are leaving in droves, leaving permanently, and eventually so will the CADFG. Either way, your cutting off your dick despite your face.

The lead ban will cost me more \$\$\$, but will cost you your job. Not really since you work for the state, my bad.

Re non lead ammo isn't the point. The point is CADFG doesn't stand with the hunting community on this issue. They stand with the HSUS, right?

The decisions handed out this last year alone from the our politicians on our guns, and now our own DFG.

Done with CA,
Steve Brott

Sent from my iPad

From: [T Vasquez](#)
To: [Stowers, Craig@Wildlife](mailto:Stowers_Craig@Wildlife)
Subject: AB711
Date: Monday, December 01, 2014 12:11:41 PM

Craig,
This in response to the email I received on Nov. 6, 2014.

Per that email, today is the last day I am able to respond.

Concerns on the ban of lead ammunition.
I do not think it is merited.

I have hunted for over 50 years.
After the ban on lead shot for waterfowl hunting, I have checked the contents of the gizzards and craws of almost every bird I have harvested and have yet found a lead projectile. I have never seen the data on the lead concentration of any of the dead animals that have reportedly died from ingestion of lead projectiles.

I think this is a step in elimination all hunting.

In the email a Project Description was given.
I did not see any mention of air gun gun pellets or the availability of 22 rimfire ammunition. I would say that there are more of these fired than jacketed bullets.
I do not think the ban, if carried out should include these.

I do think there will be more fires caused by striking rocks.
I do think there will be more animals wounded and lost which would lead to more animal shot.
With center fire rifles, if one hits the animal in the gut, the bullet does not normally stay in the gut. It normally passes all the way through.

Another thing that was not addressed, is that some hunters may move out of the state of California.

Concerned resident hunter
Thomas Vasquez

From: [norma_campbell](#)
To: Stowers_Craig@Wildlife
Subject: BAN ON LEAD AMMO
Date: Tuesday, November 25, 2014 10:30:44 AM

Think we have corresponded before on this issue and I know it will be discussed at the F&W meeting on 12-3-14. I hope you will be attending. I unfortunately cannot.

Really hope that all lead ammunition will be banned forever in California. We did it for paint and for gasoline, no one is unable to paint and no one had to quit driving because of the ban. Switching to another type of ammo should/will not cause someone to stop hunting.

Its just common sense, like I said before if you can afford all the needed things to hunt you can jolly well afford another kind of ammo.

Norma Campbell, President
Injured & Orphaned Wildlife (a 501 C 3 non-profit)
37 Decorah Lane
Campbell, California 95008

Nature uses as little as possible of anything. Man on the other hand uses as much as he can. Fully knowing he will have excess which he will waste.

Humans are the most territorial and destructive species on Earth.

From: [Joe Becker](#)
To: [Stowers, Craig@Wildlife](#)
Cc: [Allen Meurer Reg 4 LR](#); [CBHSAANewsEditor](#); [Craig Fritz](#); [Robert & Tammy Moore](#); [Jerry Maytum](#); [Joe & Sharon Wylie](#); [Wayne Raupe](#); [Bill Heins](#); [Gary & Sandy McCain](#); [Pam Severtson](#); [Eddie Boyd, Reg 3 LR](#); [John Waddles](#); [Gaines & Associates](#); [Bill Karr, Editor](#)
Subject: CEQA /Lead Ammo Info.
Date: Friday, November 14, 2014 10:55:47 AM

Good Day Craig:

Just seen in the WON 11/14/14 issue where today DFW is having a meeting on their proposed program for instituting the Non-Toxic Lead Ammo law after yours and the Commissions meetings from the past year on instituting this new law.

Believe that prior to the Commission and Department moving ahead on this unfounded scientific law, more information and science needs to be done. Am sure I do not have to tell you a biologist all that is going to be affected by moving forward on a law passed in our state which is unmanageable and way out in left field for your employer DFW. Today as our states sportsman were not invited nor had knowledge of todays meeting I attempted to pull up on my computer DFW's CEQA proposed outline of there future requirements for this anti Lead Ammo Law.

Please email back when possible these future plans for my use of Firearms in California as I use a Wild Cat Caliber and have to reload all my Ammunition personally. I am not going to purchase and load hundreds of rounds which are not legally usable in my shooting and be subjected to arrest.

Also would have been nice if this information would have be available a month ago, or the Commission and Director of DFG would stand up and tell the Legislature who passed this law it is not functional, like also should have been done on the Hound vs Bear Law. Your Department are the Scientists so to speak on Natural Resource Management, but sit back on your hands and then manage people not our states Renewable Natural Resources.

Sorry I am bitter and unhappy Craig, that is not my nature, at 79 as I watch this State and Country go backwards it bothers me.

Sincerely and God Bless;
Joe Becker

From: [Anthony Zinnanti](#)
To: Stowers_Craig@Wildlife
Subject: COMMENT FOR PUBLIC SCOPING MEETING RE NON-LEAD AMMUNITION
Date: Wednesday, November 12, 2014 1:56:13 PM

Dear California Department of Fish and Wildlife,

This comes pursuant to the e-mail from Mitch Soto and the opportunity to comment on the implementation of non-lead ammunition for the pending public scoping meeting. I am an attorney, hunter and reloader and I offer the following in my capacity as such. The scope of the public commenting was unclear. So, I will try to remain relevant to the implementation of the law versus the passage of the law.

Implementation of non-lead ammunition is going to require an additional hunter education component so as to educate with respect to the proper use of non-lead projectiles.

As is well documented, initial use of non-lead led to many complaints of wounding animals rather than taking animals. This is due to the function of non-lead projectiles. Specifically, when hand loading ammunition with non-lead, it is necessary to take internal measurements of the firearm chamber (i.e. with centerfire rifle) and make sure that the ogive of the bullet is at the proper distance from the landings.

This is taken from the Barnes Bullets website FAQ at <http://www.barnesbullets.com/information/bullet-talk/faq/>:

Do I seat TSX bullets .030 inch to .070 inch from the lands, starting at .050 inch off the lands, as recommended with other X-style bullets?

Yes. All-copper TSX Bullets typically give better accuracy when seated off the lands and grooves (the rifling in the barrel).

Additional research reveals that loading the cartridge so that the ogive is .050" off the landings is necessary for proper contact of the bearing surface on the solid copper bullet with the rifling for purposes of proper terminal ballistic function. While most rifles in use for hunting are production models, the internal chamber measurements can vary. The only true way to provide for the proper internal ballistic function is to (1) take measurements of the internal chamber of the particular rifle in use and (2) custom load bullet tips so that the ogive-to-landings distance is proper.

I spend a lot of time in the field during hunting season and I have had the opportunity to observe over several years what really goes on. You get a lot of hunting traffic on opening day and closing day, with a tremendous thinning of the crowd in between. When we look at the number of "hunters" we have to take into account just how involved these hunters are with the preparation and maintenance of equipment, not to mention their commitment to ethical hunting and experience with taking game.

Where most non-lead ammunition in use would be to general SAAMI specifications within a production rifle, there is tremendous variation in measurements and tolerances, which puts the proper function of non-lead ammunition at risk. The casual hunter may not be involved enough to (1) know about the issue, or (2) be

able to deal with the issue.

The result, however, is wounded and lost game.

As to the specific information about this issue and recommendation for dealing with it, I would contact Nosler and Barnes. As for detailed reloading information, Rolf Griesbach at Oak Tree Gun Club is a excellent source of information as he is a certified NRA reloading instructor. He can be reached at (661) 259-7441 Wednesday through Sunday.

In closing, this issue should be made a component - at least mention - in the course of hunter education courses. Further, it would obviously be a good idea to update hunters on this issue. I would suggest that - once the issue is adequately identified - production of an informational video to be put on the DFW website and proof of viewing the video being condition precedent to renewal of a hunting license.

Respectfully submitted,

Anthony D. Zinnanti, Esq. SBN 196778
LAW OFFICE OF ANTHONY D. ZINNANTI
An appellate and post-conviction practice
28005 Smyth Drive, #194
Valencia, California 91355
Telephone: (661) 287-6100
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From: [Mjasper](#)
To: Stowers_Craig@Wildlife
Subject: Comments Submissions-NOP-Lead Prohibition Implementation
Date: Saturday, November 29, 2014 4:41:27 PM
Attachments: [PIC-NOP Comment-11-29-14.pdf](#)

Hi Craig,

Could you please accept the attached as comments on the NOP for “Prohibition on the Use of Ammunition Containing Lead for the Take of Wildlife with a Firearm.”

If you can acknowledge receipt of this, it would be appreciated (email can't always be trusted!)

Thanks, and hope all goes well!

Marilyn

From: Soto_Mitch@Wildlife
To: Stowers_Craig@Wildlife
Subject: FW: AB 711
Date: Tuesday, November 18, 2014 11:11:09 AM

You didn't want all the email replies did you!?

-----Original Message-----

From: joe mello [<mailto:mojobmc@yahoo.com>]
Sent: Tuesday, November 11, 2014 8:05 PM
To: Soto, Mitch@Wildlife
Subject: Re: AB 711

I HOPE YOU ALL LOOSE YOUR JOBS AT DF&G (CF&W)" WHAT A JOKE THAT NAME IS how many millions did that name change cost? jus to make the dogooders happy"! DUE TO THIS TOTALLY B.S. AND UNFOUNDED AB 7 11 WHICH HAS A TOTALLY ANTI GUN/ ANTI HUNTER BACKING ! YOU HAVE ALLOWED THE DO GOODERS TO RUIN WHAT WAS LEFT OF HUNTING IN THIS STATE ! I ALONG WITH THOUSANDS OF OTHER HUNTERS WILL NO LONGER HUNT IN "KALIFORNIA"!!! WHAT A JOKE YOU AT THE DEPT HAVE BECOME! ENJOY YOUR LITTLE JOB WILL YOU CAN ! YOU WILL NO LONGER HAVE HUNTER REVENUE TO SUPPORT YOUR B.S. ! hey mayB you can get donations from the autobonsociety& spca to support you now ?"LOL"

On Thu, 11/6/14, Soto, Mitch@Wildlife <Mitch.Soto@wildlife.ca.gov> wrote:

Subject: AB 711
To: "mojobmc@yahoo.com" <mojobmc@yahoo.com>
Date: Thursday, November 6, 2014, 12:49 PM

The purpose of this email is to inform you that the California Department of Fish and Wildlife (CDFW) is preparing a draft environmental document regarding the regulation to implement the use of non-lead ammunition for the take of wildlife in California. The first attachment (Scoping Notice) is to provide information regarding a public scoping meeting and ways to get your comments to CDFW. The second attachment (nINOP-final package) contains an Initial Study (IS) to identify impacts, a detailed project description, and a preliminary analysis of the impacts identified in the IS. Thank you for your participation in this effort and we look forward to receiving your comments.

From: hswriter@frontiernet.net
To: [Stowers, Craig@Wildlife](mailto:Stowers_Craig@Wildlife)
Subject: Fw: Help Protect Wildlife from Lead Poisoning
Date: Saturday, November 22, 2014 6:41:34 PM

Look at this beautiful eagle that died from lead poisoning. Please oh please work to ban lead from ammunition.

A response would be deeply appreciated.

Sincerely,
Heidi Strand

----- Forwarded Message -----

From: Battle Creek Alliance <marily-lobo@hotmail.com>
To: hswriter@frontiernet.net
Sent: Saturday, November 22, 2014 5:53 PM
Subject: Help Protect Wildlife from Lead Poisoning



This beautiful golden eagle was brought to Shasta Wildlife, but died from lead poisoning.

Get the lead out!

Take action to ban lead from ammunition.

Although lead shot was banned for use in hunting waterfowl decades ago, it is still widely used in ammunition for upland hunting. The CA Dept. of Fish & Wildlife (CDFW) is accepting comments until Dec. 1st to enact a statewide ban of lead in ammunition.



Please take a minute to send a comment in support of a ban on lead in ammunition.

Comments may be sent to: craig.stowers@wildlife.ca.gov

Lead can poison many wildlife species

Eagles, hawks, and vultures are just some species at risk.

The golden eagle in the picture above could not stand on her feet and was underweight. Lead poisoning affects the gastrointestinal system and can cause numbness in the extremities. Carrion eaters are poisoned from ingesting other wildlife which was shot.

If a ban on lead in ammo is passed, less wildlife will die slow and painful deaths. Please send a comment to CDFW to say you want them to



get the lead out!

LINK TO MORE INFO

www.thebattlecreekalliance.org

[Forward this email](#)



This email was sent to hswriter@frontiernet.net by marily-lobo@hotmail.com | [Update Profile/Email Address](#) | Rapid removal with [SafeUnsubscribe™](#) | [Privacy Policy](#).



Battle Creek Alliance | PO Box 225 | Montgomery Creek | CA | 96065

From: [Joshua.Huntsinger](#)
To: Stowers_Craig@Wildlife
Subject: FW: Letter from State Department of Fish and Wildlife
Date: Thursday, November 06, 2014 2:30:32 PM
Attachments: [DOC110614.pdf](#)

Hi Craig,

As you may be aware, I employ several Wildlife Specialists who do a lot of depredation hunting of non-game species, and also species requiring Depredation Permits. Much of the work we do is accomplished using rimfire rifles. I have a huge concern related to AB 711, and the ability of my staff to perform their jobs in an effective, efficient, and humane manner.

Do you know if DFW has done any work to interpret the exemption found in F&G 3004.5(h) which states, " (h) This section does not apply to government officials or their agents when carrying out a statutory duty required by law." Will this exemption be clarified in the proposed regulation?

Thanks!

Josh Huntsinger
Placer County Agriculture Department
530-889-7372

-----Original Message-----

From: Ann Holman
Sent: Thursday, November 06, 2014 2:12 PM
Cc: Placer County Board of Supervisors
Subject: Letter from State Department of Fish and Wildlife

Attached is a letter received from the State of California, Natural Resources Agency, Department of Fish & Wildlife, draft environmental document to address potential impacts resulting from the State-wide ban on lead ammunition for hunting purposes.

From: [Tammy Cole](#)
To: [Stowers, Craig@Wildlife](#)
Subject: Getting the lead out
Date: Sunday, November 23, 2014 11:19:43 AM

I recognized this eagle as the one on the local news last week when he finally lost his battle for life here in Redding at Turtle Bay Exploration Park. So damned unnecessary! Lead ammunition not only causes the deaths of wild animals but of domestic animals and pets. It's an awful death and its cause should be outlawed. Now!

Tammy Cole
Anderson CA

From: [Robert Black](#)
To: [Stowers, Craig@Wildlife](mailto:Stowers_Craig@Wildlife)
Subject: LEAD AMMO BAN
Date: Monday, November 17, 2014 2:55:45 PM

Hello Mr. Stowers,

Being unable to attend the meeting scheduled for 11/14, I would appreciate any information you are allowed to provide on the draft environmental document which is supposed to address potential impacts resulting from the implementation of the statewide ban on lead ammunition.

Also, if the ban is based upon real evidence that lead ammunition is harmful to wildlife (other than the intended game), please provide a source where that evidence can be reviewed. In particular, separating the effects of shotgun pellets and rifle bullets. Of course, we sportsmen expect/assume that the ban was pushed through by anti-gun lobbies and shiny-eyed greenies with specious, uncorroborated evidence as opposed to being a justified action in response to sick or dead wildlife with lead-poisoning. If that is an incorrect expectation/assumption, please share your information.

Thank you for your consideration, Robert Black

From: [Leonard Cardosa](#)
To: Stowers_Craig@Wildlife
Subject: Lead Ammo Ban
Date: Thursday, November 13, 2014 9:55:22 PM

Craig Stowers
California Department of Fish and Wildlife
1815 9th Street
Sacramento, CA 95811

Re: Public Scoping Meeting on lead ammo ban--

I oppose the lead ammo ban that is being proposed for the taking of wildlife with a firearm in the State of California.

Lead ammo is not the problem, the problem is educating the shooting and hunting public to properly dispose of wildlife carcasses. To reduce the opportunity for consumption by wildlife. We need to educate the public to better dispose the field dressed leftovers.

Lead ammo is affordable to the shooting public and enables the younger generation to participate in our great outdoors. Non-lead ammo would further reduce the practicality of taking our youth out to shoot and hunt.

Non-lead ammo is more costly and some firearms are not capable of shooting non-lead ammo. Non-lead ammo may damage firearms or injure the shooter.

We the general public need more lead time for these important matters to be aware and participate in your decision making process. Short lead times for announcements is not practical and should cease immediately.

The lack of proper lead times for public input seems to be a tactic used by Fish and Wildlife to reduce public, consumer, taxpayer and hunter awareness and participation in these highly critical matters at meetings.

We should put the California Condor and all other "endangered species" in zoos like the Santa Barbara Zoo, so that they are better protected and the general public may enjoy them. People of all ages and mobility levels are able to visit zoo's and that is where we should provide wildlife for their enjoyment. Need to reduce our budget for keeping the condor and other "endangered species" in the wild. Put them in Zoo's

Thanks for your attention in this matter, I am a registered voter in the state of California and a licenses paying resident hunter and a licenses paying resident fisherman.
Sincerely,

Leonard Cardosa
7873 Sonoma Street
Ventura, CA 93004

From: Q
To: Stowers_Craig@Wildlife
Subject: lead ammo
Date: Thursday, November 13, 2014 5:11:31 PM
Attachments: [astro1.vcf](#)

I have a caliber that has no commercial non lead ammo. now what?
I have to go hunt, its my heritage.
I have other calibers, but I'm retired on a fixed income.
Are you going to provide my ammo needs?

This email is free from viruses and malware because avast! Antivirus protection is active.
<http://www.avast.com>

From: [norma_campbell](#)
To: [Stowers, Craig@Wildlife](#)
Subject: LEAD AMMUNITION BAN
Date: Thursday, November 13, 2014 10:29:07 AM

It is my feeling and opinion that Lead ammunition should be banned from any and all future hunting starting in 2015 in the State of California. We have banned Lead in our paint, our gasoline.

Why not ban it entirely from hunting where it gets into our waterways from dead/dying animals, from contaminating meat eaten by the hunters and their families and friends, and from killing other animals from secondary poisoning.

We who wish this ban are not trying to tell the hunters they cannot hunt, just to hunt with a conscience. For those that rally against the cost of non-lead ammunition, my feeling is that if they can afford the license, weapons, time off from work, transportation, fuel, food, proper clothing etc., they can afford non-lead ammunition.

Hunting is not a poor mans sport, regardless of the ammunition used.

Please pass a non-revocable Lead Ammunition ban as soon as possible and have it go into total effect year around within 2015.

Norma Campbell
37 Decorah lane
Campbell, California 95008-2424 408-559-7379

"All that is required for evil to prevail is for good men to do nothing"

From: [Lindsey Myers](#)
To: Stowers_Craig@Wildlife
Subject: Lead Ammunition
Date: Thursday, November 06, 2014 3:53:02 PM

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

Dear Craig:

This email is in response to the Notice of Public Scoping regarding implementation of the statewide ban of lead ammunition. Our Center (Central Sierra Environmental Resource Center) supports the banning of lead ammunition for taking wildlife with a firearm. Banning lead ammunition will help limit the amount of harmful lead that enters the environment every year.

Sincerely,

Lindsey Myers - CSERC Biologist

From: [Lindsey Myers](#)
To: Stowers_Craig@Wildlife
Subject: Lead Ammunition
Date: Thursday, November 06, 2014 3:53:02 PM

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

Dear Craig:

This email is in response to the Notice of Public Scoping regarding implementation of the statewide ban of lead ammunition. Our Center (Central Sierra Environmental Resource Center) supports the banning of lead ammunition for taking wildlife with a firearm. Banning lead ammunition will help limit the amount of harmful lead that enters the environment every year.

Sincerely,

Lindsey Myers - CSERC Biologist

From: evholloway@comcast.net
To: Stowers_Craig@Wildlife
Subject: lead ammunition
Date: Saturday, November 08, 2014 6:04:56 PM

Mr. Stowers,

It has been brought to my attention that Fish and Wildlife Service is considering banning lead ammunition for rifles in California. Although this premise sounds useful on the surface, it makes absolutely no practical sense in any area outside the habitat of the California Condor. Small game species are prolific in the Sacramento Valley and Northern California and there is no evidence that lead is killing them. Vehicles on the highway kill thousands of small game each night there's no effort to close the highways.

In my opinion, this is more of an anti-hunting ban. Furthermore without lead, rifles would become obsolete. Rifles have what's called rifling in there barrels. Steel ammunition will ruin the rifling. Therefore, banning lead will make hundreds of thousands of perfectly good rifles useless. Not to mention all the law bidding citizens with lead ammunition will instantly become criminals.

This is anti-hunting legislation and nothing more.

Thank You for your time

Eric Holloway
evholloway@comcast.net
530-682-3452

From: [Ken Prather](#)
To: Stowers_Craig@Wildlife
Subject: lead ban implementation concerns
Date: Tuesday, November 11, 2014 7:16:31 AM
Attachments: [nlNOP_final_package.pdf](#)

Dear Craig Stowers,

One issue that was not directly mentioned in the attached pdf file sent to me is the extreme adverse impact the lead ban will have on the CA hunters that use traditional muzzle loading and blackpowder cartridge rifles and smoothbores. These hunters invest millions of dollars in custom handmade original and reproduction firearms that are literally works of art, and are designed to shoot lead projectiles exclusively. Use of non-lead projectiles in these firearms can reduce the effectiveness of them, and even decrease the safety of their use. **And the saddest part is that any adverse enviro-impact of the use of lead in these "lower velocity" guns has actually not yet been proven. Slower lead projectiles do not fragment like their higher velocity cousins, and the slower projectiles most often pass thru the game animal. It is rare that you ever see a lead roundball lodged in the guts.**

A tradition that is over 400 years old is at risk of becoming extinct. This lead ban will make these guns virtually useless to the traditional hunter and the millions of dollars invested in these fine historical guns and the heritage of using them will be lost. The thousands of CA hunters that hunt with traditional muzzleloaders and blackpowder cartridge rifles and smoothbores, will have no reason to buy hunting licenses or participate. These men and women are arguably the finest skilled and safest humane hunters, and the most law abiding, and environmentally concerned sportsmen in the woods today. Fiscally, the impact will probably not be huge, but something will be lost in California forever-- Our heritage and our faith in government to do what is right and fair. And that is perhaps worth much more than money.

I have talked to some of these traditional hunters and many of them feel that this is a personal attack on an ancient and traditional freedom we have as Americans. Its just very sad I think and something we can easily fix by allowing the few that choose, to use these traditional American heritage guns as they were intended, since they do not appear to offer the same adverse environmental impact that modern guns do.

thanks for your consideration

sincerely,

Ken Prather

From: [Steve Little](#)
To: [Stowers, Craig@Wildlife](mailto:Stowers_Craig@Wildlife)
Subject: Lead Ban
Date: Thursday, November 06, 2014 2:15:30 PM

Craig,

The purpose of the lead ban is to prevent the California Condor from ingesting lead from game shot by hunters. The ban of leaded ammunition in the areas of the Condors range is justifiable. However a state wide ban of leaded ammunition in areas that are out of the California Condors range is not. I struggle to see the benefits for the Condor in Northern California. The Condor does not make its home and or feed in Northern California. With that statement in mind why would we create a lead ban in this portion of the state? Governor Brown states "a regulation that is least disruptive to the hunting community". A lead ban in Northern California is very disruptive to the hunting community and benefits nothing. Lead in Northern California is not the problem. Fish and Game have already sectioned California into zones. Use those zones to outline the Condors range and ban leaded ammunition in those zones. The entire State should not be bound to regulations that do not apply to them. It will not benefit the Condor or the hunting community. This state wide lead ban is political and not practical. It is being driven by lobbyist who are not active in the hunting community. This is purely a move to drive up the price of ammunition in a effort to support the anti gun agenda.

Steve Little

From: [Bill Harp](#)
To: [Stowers, Craig@Wildlife](mailto:Stowers_Craig@Wildlife)
Subject: Lead ban
Date: Thursday, November 06, 2014 9:51:53 PM

This law is has no scientific merits whats so ever. It's only effect is to push more people out of hunting just what the anti hunting people who rammed this bill thru's true intent was. Now saying that I have scoured every catalog for non lead .22 and every one doesn't have any in stock and a few had a footnote that added that they didn't know when or if they would get them in. With the factories working 24 hours a day with normal .22s production why would they stop to make such a limited run of non lead, they won't as it doesn't make economic sense. With the price of non obtainable non lead .22s at \$8.50 to \$10.00 a box not too many Dads will be taking their kids hunting with .22s. As a side note Thanks Fish and Game for not uttering a single word supporting us hunters during this bills debate, the silence was deafening. Your retired game wardens were the only people that said anything of the foolishness of this law as they couldn't be told to keep quite as you people on payroll were told to. Bill Harp

From: [JACK INGRAM](#)
To: Stowers_Craig@Wildlife
Subject: Lead Ban
Date: Friday, November 14, 2014 2:21:56 PM

Of course the lead ban will adversely effect recreation, hunting! Non lead alternatives are NOT readily available, especially to the upland hunter. The drastic increase in price for those shells that are available is substantial. Furthermore, those of us who use vintage shotguns WILL NOT be able to hunt with steel shot, the most common non lead alternative. Older shotguns will be ruined with steel ammo. These shotguns will in effect be useless. Why is the hunting community being punished? Please do not destroy hunting in this great state.

From: [Roger & Vicki Foszcz](#)
To: [Stowers, Craig@Wildlife](mailto:Stowers_Craig@Wildlife)
Subject: Lead Bullets
Date: Sunday, November 09, 2014 9:08:07 AM

With all due respect. It appears this bill was passed by “urban domination” and emotional response that will adversely affect and impose an economic burden on the residents of California the rest of the nation. Lead bullets have been used in hunting for centuries and the CDC has no documented cases of anyone eating game meat killed with lead. “Urbanites” live in an environment of concrete and asphalt and for the most part have no idea of firearm safety and their use as a tool in hunting. They have their local market that supplies all their needs, the police and fire departments to protect them and unfortunately have lost all sense of self-reliance which fuels their absurd ideas on the conservation and management of wildlife resources.

This is a bad bill and should be rescinded.

Respectfully,

Roger M. Foszcz
910 W. 11th St.
Port Angeles, WA 98363

360-457-8330

From: [JD Dye](#)
To: Stowers_Craig@Wildlife
Subject: lead bullets
Date: Monday, December 01, 2014 7:33:27 AM

Dear sir:

I fail to see any benefit to outlawing lead bullets any further than they already are. In fact the existing laws are not doing anything except harass sportsmen.

About the only benefit that is apparent to me is enhancing gun control. Actually control of any sort.

The impact forms I note are all no impact except for sportsmen.

It is my humble opinion that with no impact on 99% of the issues we do not need and more regulation on this subject.

Sincerely:

J. D. Dye

From: [Renee Ottzman](#)
To: Stowers_Craig@Wildlife
Subject: Lead in ammunition.....
Date: Sunday, November 23, 2014 1:09:14 PM

Dear Craig,

I'd like to add my support to "getting the lead out" of ammunition. Our wildlife is being threatened in just about every way possible, from habitat encroachment to lead poisoning. All of your efforts are very much appreciated in helping wild birds of prey live free of this hazard. Thanks for all you do.

Sincerely,
Renee Ottzman
Redding, CA

From: ednva@fronternet.net
To: Stowers_Craig@Wildlife
Subject: Lead in ammunition
Date: Tuesday, November 25, 2014 10:37:00 AM

Since lead is toxic I support measures intending to keep it out of our environment.

Virginia Phelps

From: [Chris Tarry](#)
To: [Stowers, Craig@Wildlife](mailto:Stowers_Craig@Wildlife)
Date: Thursday, November 06, 2014 2:32:23 PM

Hello Mr. Stowers.

What ever the outcome of this exercise, there should be provision for retraction of these no-lead regulations if, within a couple years time there are no calculable benefits derived. These regulations have been in effect in the condor range for some time already and if they were having a direct benefit there should be some available data to support the no-lead regulation. There should have been a dramatic reduction in lead content in blood samples, since not only has lead been banned in their range, but the most common lead bullets (.22 caliber) have been virtually unavailable the past couple years. By data I mean quantifiable sampling, not supposition based on limited observation by biased individuals. In the initial condor data, the supposition was that the source of lead was from bullet fragments, no studies of the Antimony content of said lead fragments was ever done. Additionally, the sample size (2 birds which might have had fragment in their gullets) with which the conclusion of lead ammunition being the cause of high levels of lead in condor blood is far too small to be statistically significant. If the DFG is not willing to put a retraction provision in place, then we can conclude that this exercise has nothing at all to do with the welfare of scavengers but is solely a means to constrict hunting and increase the expense to sportsmen. The name change to "Department of Fish and Wildlife," to me, is telling of the direction of that hunting is headed in California.

Sincerely,

Chris Tarry

From: [Ken Prather](#)
To: Stowers_Craig@Wildlife
Subject: non lead ban implementation issues
Date: Monday, November 10, 2014 10:07:33 AM
Attachments: [nlNOP_final_package.pdf](#)

Dear Craig Stowers,

One issue that was not directly mentioned in the attached pdf file sent to me is the extreme adverse impact the lead ban will have on the CA hunters that use traditional muzzle loading and blackpowder cartridge rifles and smoothbores. These hunters invest millions of dollars in custom handmade original and reproduction firearms that are literally works of art, and are designed to shoot lead projectiles exclusively. Use of non-lead projectiles in these firearms can reduce the effectiveness of them, and even decrease the safety of their use. **And the saddest part is that any adverse enviro-impact of the use of lead in these "lower velocity" guns has actually not yet been proven. Slower lead projectiles do not fragment like their higher velocity cousins, and the slower projectiles most often pass thru the game animal. It is rare that you ever see a lead roundball lodged in the guts.**

A tradition that is over 400 years old is at risk of becoming extinct. This lead ban will make these guns virtually useless to the traditional hunter and the millions of dollars invested in these fine historical guns and the heritage of using them will be lost. The thousands of CA hunters that hunt with traditional muzzleloaders and blackpowder cartridge rifles and smoothbores, will have no reason to buy hunting licenses or participate. These men and women are arguably the finest skilled and safest humane hunters, and the most law abiding, and environmentally concerned sportsmen in the woods today. Fiscally, the impact will probably not be huge, but something will be lost in California forever-- Our heritage and our faith in government to do what is right and fair. And that is perhaps worth much more than money.

I have talked to some of these traditional hunters and many of them feel that this is a personal attack on an ancient and traditional freedom we have as Americans. Its just very sad I think and something we can easily fix by allowing the few that choose, to use these traditional American heritage guns as they were intended, since they do not appear to offer the same adverse environmental impact that modern guns do.

thanks for your consideration

sincerely,

Ken Prather

From: [Pat Papasergia](#)
To: Stowers_Craig@Wildlife
Subject: Non Lead
Date: Thursday, November 06, 2014 6:20:08 PM

I think the steel shot is a good thing for waterfowl but not for upland bird hunting and big game hunting. I have used steel on game birds and it cripples a lot of birds. This lead ban is a joke. People have been killing animals with lead bullets for a long time and now people are living longer than ever before. Banning lead is not the answer. I think the Fish and Game, US forest and especially BLM should manage our land is stead of abusing them. Especially BLM and there over grazing. No cover for birds, and no food for the birds to eat. I think our hard earn tax money could be going to something else instead of waisting all this time in banning lead bullets. What about that lead paint we breathed at a child back in the day. Pretty amazing I am still here along with a lot of other people born in the fifties. Fish and Game should be fighting for us hunters instead of giving in to the way of the Environmentalist. Soon they will find something wrong with copper shot and bullets.

From a Concern Outdoorsman's

Pat Papasergia

From: [Susan Nash](#)
To: [Stowers, Craig@Wildlife](#)
Cc: [Tom Paulek](#)
Subject: NOP for statewide ban on lead ammunition for the take of wildlife with a firearm
Date: Friday, November 07, 2014 2:33:54 AM

I have read the initial study and have the following questions/comments.

1. Is this going to be an actual EIR, or a substitute environmental document?
2. Appendix A are the actual proposed regulations of which this is an initial study but did not see appendix A. This notice is defective and must be resent with Appendix A, the actual proposed regulations included —otherwise how can the public evaluate the initial study and make scoping comments?
3. Section 18(c), Mandatory findings of significance for impacts to humans, must be checked. Eating food shot with lead ammunition is harmful to humans.
4. Mitigation should include a warning to hunters in the hunting regulations and a prop. 65 warning on all lead ammunition.

I look forward to seeing the actual proposed regulations so that I can make further comments.

Sue Nash, President
Friends of the Northern San Jacinto Valley

Susan Nash
P.O. Box 4036
Idyllwild CA 92549
909-228-6710
snash22@earthlink.net

From: CAPisano@aol.com
To: Stowers_Craig@Wildlife
Subject: November 14, 2014 Meeting
Date: Friday, November 14, 2014 10:21:10 AM

Mr. Stowers,

It was disconcerting and with much surprise to read in a sporting newspaper yesterday that Dept. of Fish and Wildlife holding a Lead Ammunition Ban meeting today with little advanced info. I would have scheduled to attend and voice my opposition to the lead ban. The research is flawed and does not support the merits of the ban. Please note my opposition.

Chris Pisano
Orangevale, CA 95662

From: [Patricia Lind](#)
To: Stowers_Craig@Wildlife
Subject: poisoning of wildlife due to lead ammunition
Date: Sunday, November 23, 2014 9:02:42 AM

Hi Mr. Stowers

Europe has stopped all lead ammunition use for hunting due to danger of lead poisoning many years ago. Please help us do the same for the United States. It is a crime that lead bullets are still allowed in the US for hunting.

How many more beautiful birds of prey and endangered mammals must die before the Department of Fish and Wildlife takes action?

Please let me know what actions you can take to help us.

Pat Lind

4215 Fort Peck ST

Shasta Lake City, CA 96019

T: 530-275-5704

From: [Marily Woodhouse](#)
To: Stowers_Craig@Wildlife
Subject: Proposal to ban lead in ammunition
Date: Sunday, November 23, 2014 11:07:34 AM

Dear Mr. Stowers,
I'm writing to provide a comment on behalf of my organization, Battle Creek Alliance.
We support a ban on lead in ammunition and appreciate that your department is working on this.
As a wildlife rehabilitator, i've seen wildlife die from lead poisoning. It is an unnecessary and painful way to die.

Marily Woodhouse, Director
www.thebattlecreekalliance.org
(530) 474-5803

From: [Daniel Pollard](#)
To: Stowers_Craig@Wildlife
Subject: public comment period for the lead ammo ban (AB 711).
Date: Thursday, November 13, 2014 6:50:25 PM

The Department of Fish and Wildlife's Notice of Preparation states that "that while many different nonlead bullets and cartridges have been certified by the Fish and Game Commission and are advertised for sale by different manufacturers, very few of them are actually available for purchase either in sporting goods stores that typically sell ammunition or from on-line vendors. Furthermore, bullets and cartridges for calibers considered to be "uncommon" are essentially unavailable for purchase by California hunters. Additionally, costs are often substantially higher for nonlead ammunition of all calibers. All indications from ammunition manufacturers suggest they will not be increasing production of nonlead ammunition and most likely will not be able to meet the demand the legislation will create in California."

Additionally, one study, sponsored by the National Shooting Sports Foundation (Southwick Associates 2014), predicts that hunting participation in California may drop by as much as 36% as a result of the proposed regulations.

Governor Brown wrote in his signing message for AB 711 that incentives for hunters should be considered during the implementation of AB 711.

From: [Danny](#)
To: Stowers_Craig@Wildlife
Subject: public comment period for the lead ammo ban (AB 711).
Date: Thursday, November 13, 2014 6:51:24 PM

The Department of Fish and Wildlife's Notice of Preparation states that "that while many different nonlead bullets and cartridges have been certified by the Fish and Game Commission and are advertised for sale by different manufacturers, very few of them are actually available for purchase either in sporting goods stores that typically sell ammunition or from on-line vendors. Furthermore, bullets and cartridges for calibers considered to be "uncommon" are essentially unavailable for purchase by California hunters. Additionally, costs are often substantially higher for nonlead ammunition of all calibers. All indications from ammunition manufacturers suggest they will not be increasing production of nonlead ammunition and most likely will not be able to meet the demand the legislation will create in California."

Additionally, one study, sponsored by the National Shooting Sports Foundation (Southwick Associates 2014), predicts that hunting participation in California may drop by as much as 36% as a result of the proposed regulations.

Governor Brown wrote in his signing message for AB 711 that incentives for hunters should be considered during the implementation of AB 711.

From: [Chris Tarry](#)
To: [Stowers, Craig@Wildlife](mailto:Stowers_Craig@Wildlife)
Subject: RE:
Date: Thursday, November 06, 2014 4:14:11 PM

Thank you for your prompt response.

In that vein I would suggest that the environmental impacts will be as follows: Greatly increased pressure on the Delta levy system and California agriculture by ground squirrels resulting in increased incidence of delta flooding and great expense to the state, farmers and taxpayers over time; fewer hunters in the field causing greater population fluctuations of game and non game animals with possible deleterious affects on habitat. Tripling the already high cost of ammunition for depredation of burrowing rodents will greatly increase their number since virtually all effective baits have been banned in California. Increased numbers could possibly increase incidence of rodent borne disease as well.

Best regards,

Chris Tarry

From: Stowers, Craig@Wildlife [mailto:Craig.Stowers@wildlife.ca.gov]
Sent: Thursday, November 06, 2014 3:00 PM
To: Chris Tarry
Subject: RE:

Thank you for the email Mr. Tarry. While I will keep it here and ensure it is identified and responded to appropriately in the environmental document we are preparing I also suggest you send your email below directly to the Fish and Game Commission so it can be included in the public debate that will start at their December meeting. Our email to people today was solely to solicit comments on the impacts that needed to be identified and addressed in the environmental document to support the regulation, and not on the wisdom of implementing the regulation itself. Thank you again for the comment.

Craig Stowers
Environmental Program Manager
Game Conservation Program
California Department of Fish and Wildlife
Office: 916-445-3553
Fax: 916-445-4048

From: Chris Tarry [mailto:CTarry@davewilson.com]
Sent: Thursday, November 06, 2014 2:32 PM
To: Stowers, Craig@Wildlife
Subject:

Hello Mr. Stowers.

What ever the outcome of this exercise, there should be provision for retraction of these no-lead regulations if, within a couple years time there are no calculable benefits derived. These regulations have been in effect in the condor range for some time already and if they were having a direct benefit there should be some available data to support the no-lead regulation. There should have been a dramatic reduction in lead content in blood samples, since not only has lead been banned in

their range, but the most common lead bullets (.22 caliber) have been virtually unavailable the past couple years. By data I mean quantifiable sampling, not supposition based on limited observation by biased individuals. In the initial condor data, the supposition was that the source of lead was from bullet fragments, no studies of the Antimony content of said lead fragments was ever done. Additionally, the sample size (2 birds which might have had fragment in their gullets) with which the conclusion of lead ammunition being the cause of high levels of lead in condor blood is far too small to be statistically significant. If the DFG is not willing to put a retraction provision in place, then we can conclude that this exercise has nothing at all to do with the welfare of scavengers but is solely a means to constrict hunting and increase the expense to sportsmen. The name change to "Department of Fish and Wildlife," to me, is telling of the direction of that hunting is headed in California.

Sincerely,

Chris Tarry

From: [James Emley](#)
To: Soto_Mitch@Wildlife
Subject: Re: AB 711
Date: Saturday, November 15, 2014 10:57:15 AM

Hello Mitch,

One thing I forgot to mention about the Scoping Meeting. How can you possibly expect proper citizen involvement when the department sends out a notice dated November 4, 2014 and expects a response by November 14, 2014. This is not to be considered timely in any text. Do you expect hunter involvement? Well we are sure the department received little or none which means to me The Department of Fish & Wildlife is contributing to a haste and reckless decision about AB 711 and in no way cares about hunting or hunters but do care about the special interest groups have surely contributed their say so and financial support.

What the D.F.&W. should have done is to get the message out to the public in a timely manner for a true response and not what we consider to be a secret meeting which I am sure the outcome was or is that hunters are not concerned or considered to be a significant impact which is what this law is about any way, right? The timing did not allow sufficient time for me a working man to forward your email to all the different groups that are against AB711.

The D.F.&W. has failed the people of California. This is the 3rd. correspondence sent to you Mitch and as with most of Sacramento a response is never heard.

Regards,

James H. Emley

On 11/6/2014 12:45 PM, Soto, Mitch@Wildlife wrote:

The purpose of this email is to inform you that the California Department of Fish and Wildlife (CDFW) is preparing a draft environmental document regarding the regulation to implement the use of non-lead ammunition for the take of wildlife in California. The first attachment (Scoping Notice) is to provide information regarding a public scoping meeting and ways to get your comments to CDFW. The second attachment (n1NOP-final package) contains an Initial Study (IS) to identify impacts, a detailed project description, and a preliminary analysis of the impacts identified in the IS. Thank you for your participation in this effort and we look forward to receiving your comments.

From: [joe_mello](#)
To: Soto_Mitch@Wildlife
Subject: Re: AB 711
Date: Tuesday, November 11, 2014 8:07:44 PM

I HOPE YOU ALL LOOSE YOUR JOBS AT DF&G (CF&W)" WHAT A JOKE THAT NAME IS how many millions did that name change cost? jus to make the dogooders happy"! DUE TO THIS TOTALLY B.S. AND UNFOUNDED AB 7 11 WHICH HAS A TOTALLY ANTI GUN/ ANTI HUNTER BACKING ! YOU HAVE ALLOWED THE DO GOODERS TO RUIN WHAT WAS LEFT OF HUNTING IN THIS STATE ! I ALONG WITH THOUSANDS OF OTHER HUNTERS WILL NO LONGER HUNT IN "KALIFORNIA"!!!! WHAT A JOKE YOU AT THE DEPT HAVE BECOME! ENJOY YOUR LITTLE JOB WILL YOU CAN ! YOU WILL NO LONGER HAVE HUNTER REVENUE TO SUPPORT YOUR B.S. ! hey mayB you can get donations from the autobonsociety& spca to support you now ?"LOL"

On Thu, 11/6/14, Soto, Mitch@Wildlife <Mitch.Soto@wildlife.ca.gov> wrote:

Subject: AB 711
To: "mojobmc@yahoo.com" <mojobmc@yahoo.com>
Date: Thursday, November 6, 2014, 12:49 PM

The purpose of this email is to inform you that the California Department of Fish and Wildlife (CDFW) is preparing a draft environmental document regarding the regulation to implement the use of non-lead ammunition for the take of wildlife in California. The first attachment (Scoping Notice) is to provide information regarding a public scoping meeting and ways to get your comments to CDFW. The second attachment (nINOP-final package) contains an Initial Study (IS) to identify impacts, a detailed project description, and a preliminary analysis of the impacts identified in the IS. Thank you for your participation in this effort and we look forward to receiving your comments.

From: [joe_mello](#)
To: [Soto, Mitch@Wildlife](#)
Subject: Re: AB 711
Date: Friday, November 07, 2014 2:13:14 PM

WHAT A CROCK OF B.S.! the fws should worrie about how much revenue will be lost with this absurd ab711 ! hunters are banding together as of this year and will totally BOYCOTT hunting in calif & hunt out of state entirely ! think of the snow ball effect it will have on business ect let alone the loss of state sales taxes! this ab711 has ABSOULTLY no grounds no proof or reason except to limit the amount of amunition available & to drive the cost of it(nonlead ammo) so hi that most hunters will not be able to afford it at all !! the antigunners have pushed for this BOGUS BILL !! i myself WILL NOT USE IT !! non lead ammo is a proven "CRIPPLE MAKER" on most game ! think of the wounded (WASTED)& crippled game beacuse of this B.S. ammo ! i wil join the 100's of other hunters and no longer hunt in this state at all ! what a joke this absurd no reason bill is! so stick that in your report ! why dont you worrie about the 1000's of tons of lead that are in our water supplies from the use of lead fishing weights instead of a lonesume single bullet that mite be injested by a BUZZARD !! what a joke !! and now fws is going to make criminals out of hunters that refuse to use non lead ammo & continue to use lead core ammo that KILLS GAME not just wound or cripple (wasted game) ? wiseup fws ! maybe think about how much money/revenue was WASTED by jerry rainbow moonbeam brown on this bill & on his renameing fish&game dept (wasted millions) that you will now need beacuse of hunters NO LONGER hunting in "Kalifornia"! hope youall loose your cushie state jobs beacuse of this bogus ab711 joke !

On Thu, 11/6/14, Soto, Mitch@Wildlife <Mitch.Soto@wildlife.ca.gov> wrote:

Subject: AB 711
To: "mojobmc@yahoo.com" <mojobmc@yahoo.com>
Date: Thursday, November 6, 2014, 12:49 PM

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From: [SP-Tim Wei](#)
To: Soto_Mitch@Wildlife
Subject: Re: AB 711
Date: Thursday, November 06, 2014 2:18:10 PM

please advise how can I receive a transcript or record of the meeting.

自我的 iPhone

> 在 Nov 7, 2014, 4:28, "Soto, Mitch@Wildlife" <Mitch.Soto@wildlife.ca.gov> 写道:
>
> The purpose of this email is to inform you that the California Department of Fish and Wildlife (CDFW) is preparing a draft environmental document regarding the regulation to implement the use of non-lead ammunition for the take of wildlife in California. The first attachment (Scoping Notice) is to provide information regarding a public scoping meeting and ways to get your comments to CDFW. The second attachment (nINOP-final package) contains an Initial Study (IS) to identify impacts, a detailed project description, and a preliminary analysis of the impacts identified in the IS. Thank you for your participation in this effort and we look forward to receiving your comments.
> <nINOP_final package.pdf>
> <Scoping Notice 11-4-14.pdf>

From: [Louie Marietta](#)
To: Soto_Mitch@Wildlife
Subject: RE: AB 711
Date: Monday, November 10, 2014 7:56:01 AM

THIS LEAD FREE STUFF IS A JOKE . BOUGHT A NEW REMINGTON 22-250 AND BEEN WAITING FOR LEAD FREE AMMO FOR 15 MONTHS.

-----Original Message-----

From: Soto, Mitch@Wildlife [<mailto:Mitch.Soto@wildlife.ca.gov>]
Sent: Thursday, November 06, 2014 12:27 PM
To: Louie Marietta
Subject: AB 711

The purpose of this email is to inform you that the California Department of Fish and Wildlife (CDFW) is preparing a draft environmental document regarding the regulation to implement the use of non-lead ammunition for the take of wildlife in California. The first attachment (Scoping Notice) is to provide information regarding a public scoping meeting and ways to get your comments to CDFW. The second attachment (nINOP-final package) contains an Initial Study (IS) to identify impacts, a detailed project description, and a preliminary analysis of the impacts identified in the IS. Thank you for your participation in this effort and we look forward to receiving your comments.

From: [James Emley](#)
To: Soto_Mitch@Wildlife; contact@CPRA.org
Subject: Re: AB 711
Date: Sunday, November 16, 2014 8:17:52 AM

FORWARDING, REGARDS, JIM EMLEY

Hello Mitch,

One thing I forgot to mention about the Scoping Meeting. How can you possibly expect proper citizen involvement when the department sends out a notice dated November 4, 2014 and expects a response by November 14, 2014. This in not to be considered timely in any text. Do you expect hunter involvement? Well we are sure the department received little or none which means to me The Department of Fish & Wildlife is contributing to a haste and reckless decision about AB 711 and in no way cares about hunting or hunters but do care about the special interest groups have surely contributed their say so and financial support.

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The D.F.&W. has failed the people of California. This is the 3rd. correspondence sent to you Mitch and as with most of Sacramento a response is never heard.

Regards,

James H. Emley

On 11/6/2014 12:45 PM, Soto, Mitch@Wildlife wrote:

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From: [Robert Black](#)
To: [Stowers, Craig@Wildlife](#)
Cc: [Bob Francy \(bob.francy.b7id@statefarm.com\)](#); [Bob Krogh \(rbkrogh@gmail.com\)](#); [Greg Krogh \(gkrogh1@icloud.com\)](#); [Muehl, Michael](#); [ROB \(rblackpersonal@gmail.com\)](#); [tphoenix@cox.net](#); [Thomas Feguer forward_to_NetZero.net](#)
Subject: RE: LEAD AMMO BAN
Date: Tuesday, November 18, 2014 2:05:37 PM
Attachments: [COMMENT-NON-LEAD-AMMO.docx](#)

Thank you Mr. Stowers,

Please review the attachment and, if you can, add it to the comments already submitted. Since it concerns humane treatment of animals, it should strike a chord with even the anti-gun, anti-hunting lobbies and the SPCA. If it does not, then their agenda is exposed for what it is; banning hunting and firearms.

Thank you for your consideration, Robert Black

From: Stowers, Craig@Wildlife [<mailto:Craig.Stowers@wildlife.ca.gov>]
Sent: Tuesday, November 18, 2014 12:35 PM
To: Robert Black
Subject: RE: LEAD AMMO BAN

Mr. Black -

Thank you for the note. Here is a copy of the information we used to focus the conversation at the 11/14 meeting; we didn't really receive a lot of comments there (but the comment period does not close till 12/1) but the ones I remember had to do with an increased risk of fire; loss of revenue due to hunters not participating in the sport anymore; toxicity of alternative materials used for bullets and mandated under the new law; impact on hunters from not being able to use weapons that won't function with the alternatives.

The purpose of this meeting was to solicit ideas regarding what impacts should be addressed in the document. Once the document is prepared it will be subject to another round of public review before it is eventually certified (or not) by the Fish and Game Commission.

From: Robert Black [<mailto:robert.black@prccal.com>]
Sent: Monday, November 17, 2014 2:55 PM
To: Stowers, Craig@Wildlife
Subject: LEAD AMMO BAN

Hello Mr. Stowers,

Being unable to attend the meeting scheduled for 11/14, I would appreciate any information you are allowed to provide on the draft environmental document which is supposed to address potential impacts resulting from the implementation of the statewide ban on lead ammunition.

Also, if the ban is based upon real evidence that lead ammunition is harmful to wildlife

(other than the intended game), please provide a source where that evidence can be reviewed. In particular, separating the effects of shotgun pellets and rifle bullets. Of course, we sportsmen expect/assume that the ban was pushed through by anti-gun lobbies and shiny-eyed greenies with specious, uncorroborated evidence as opposed to being a justified action in response to sick or dead wildlife with lead-poisoning. If that is an incorrect expectation/assumption, please share your information.

Thank you for your consideration, Robert Black

(35) can't

IV. BIOLOGICAL RESOURCES -- Would the project:

a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

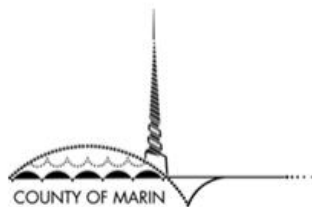
COMMENT: There is abundant ballistics information (speeds over distance, accuracy and bullet shape upon impact) on lead and jacketed-lead rifle ammunition while there is none currently available for ammunition made of other metals. In addition, there is an abundance of in-situ experience of sportsmen on the lethality and effectiveness of lead and jacketed lead rifle ammunition while there is little or none for "non-lead" ammunition. Therefore, there is a reasonable expectation that the use of non-lead ammunition will maim and torture large game animals such as deer, wild boar, elk and other species and it is therefore morally reprehensible to enact a ban on lead ammunition until the effectiveness of non-lead ammunition and, therefore, the humane treatment of game animals can be proven and documented publicly.

— wounding

From: [Hernandez, Ralph - CAO](#)
To: [Stowers, Craig@Wildlife](#)
Cc: [Eilerman, Dan](#); [Sears, Kathrin](#); [Alden, Leslie](#)
Subject: RE: Marin County's letter to support State-wide ban on lead ammunition use for hunting
Date: Monday, December 01, 2014 4:13:14 PM
Attachments: [image013.png](#)
[image014.png](#)
[image015.png](#)
[image016.png](#)
[image017.png](#)
[image018.png](#)
[image002.png](#)
[image004.png](#)
[image006.png](#)
[image008.png](#)
[image010.png](#)
[image012.png](#)
[AB 711_non_lead_ammunition_Support.pdf](#)

Mr. Stowers,

Please include in your comment collection the attached Marin County support letter for AB 711, which the Governor signed in October 2013.



.....
Ralph P. Hernandez
MANAGEMENT AND BUDGET ANALYST III

County of Marin
Office of the County Administrator
3501 Civic Center Drive, Suite 325
San Rafael, CA 94903
415 473 6406 T
415 473 4104 F
CRS Dial 711
rphernandez@marincounty.org

STAY CONNECTED:

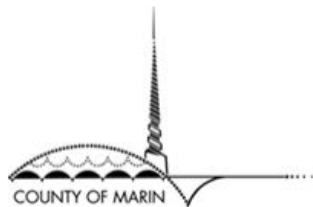


From: Hernandez, Ralph - CAO
Sent: Monday, December 01, 2014 3:36 PM
To: 'craig.stowers@wildlife.ca.gov'
Cc: Eilerman, Dan; Sears, Kathrin; Alden, Leslie

Subject: Marin County's letter to support State-wide ban on lead ammunition use for hunting

Mr. Stowers,

Attached please find the Marin County Board of Supervisor's letter supporting the State-wide ban on lead ammunition use for hunting. Please let me know if you have any questions.



Ralph P. Hernandez
MANAGEMENT AND BUDGET ANALYST III

County of Marin
Office of the County Administrator
3501 Civic Center Drive, Suite 325
San Rafael, CA 94903
415 473 6406 T
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rphernandez@marincounty.org

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97 cont



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San Rafael, CA 94903
415 473 7331 T
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www.marincounty.org/bos

Craig Stowers
California Department of Fish and Wildlife
1812 9TH Street
Sacramento, CA 95811

RE: State-wide ban on lead ammunition for hunting purposes

Dear Mr. Stowers

On behalf of the Marin County Board of Supervisors, I write to express our support for the State-wide ban on lead ammunition for hunting purposes.

Lead is a known toxin and its impacts on public health and the environment have been extensively studied. The Centers for Disease Control and Prevention warn that no safe level of lead exposure has been identified. Given our understanding of the threats from lead and our success in removing it from other sources, there is no rationale for allowing continued dispersal of lead from hunting ammunition to contaminate the environment when safer alternatives readily exist today.

Lead bullets used to shoot wildlife can fragment into hundreds of pieces that are small enough to be easily ingested by scavenging animals or by humans who consume the meat. Studies continue to document that animals and people who eat game meat shot with lead ammunition have higher blood lead levels than their counterparts who do not eat game meat. It is also well established that ingestion of lead causes serious health and behavior problems for children and adults, and it only takes a tiny amount of lead to have a devastating impact on California condors, bald eagles, golden eagles and others.

Viable alternatives to lead ammunition for hunting are widely available and just as effective. Marin County is pleased to support the State-wide ban on lead ammunition for hunting purposes.

Thank you for your consideration of our input.

Respectfully Submitted,

Kathrin Sears, President
Marin County Board of Supervisors

From: [Steven Bresolin](#)
To: [Stowers, Craig@Wildlife](mailto:Stowers_Craig@Wildlife)
Subject: Scoping Meeting.
Date: Friday, November 07, 2014 7:50:07 AM

Mr Stowers,

My name is Steve Bresolin, I am a life long resident of this state. This lead ban will cause myself and others I know to boycott California as soon as this law comes into effect. I have hunted this state since I was twelve and have steadily watched as the environmentalist take our precious resources away, bad deer management, horrible Mountain lion management, not to mention the bear hunting with hounds. These all lead to the demise of California Hunters, Part of the California Fish and Wildlife's plan I'm sure.

Hunting in this state will be a thing of the past since our Fish and Wildlife department is being ran by Anti-Hunting organizations, your department is nothing more than a PETA puppet on a string. Allowing ridiculous laws to be passed without even so much as a flinch from Fish and Wildlife.

My take on the ban on lead is a direct attack on hunters, we won't be able to get ammo to hunt or be able to afford to hunt with lead free ammo costing twice as much as lead ammo, and let's face it hunting license fees are going outrageously high, again the demise of the hunter. This is a well constructed plan by the Anti-Hunting movement to stop all hunting in California, or at the very least limit it severely. I will be taking my hunting to other states in 2019 and boycotting California, I will be on the hunting forums encouraging others to do the same. Congratulations to our governor for being the biggest PETA member there is.

Lead in case you or others did not know is natural occurring material, bullets very seldom even stay in the animal we are shooting, the fact is bullets rarely stay in the animal we are shooting so finding lead in a gut pile is BS propaganda spread by anti hunting groups. So how has this lead ban helped our Condor populations out??? It hasn't since this bird lays one egg every two years it kinda seems it has a self imposed limit on its population. I have turned primarily to airgun hunting over the years, and I can tell you lead free ammo for these is non-existent, and even then I hunt squirrel and small game and my pellets do not stay in the animal they pass right through so again low energy and still going through. I hope I made sense of this to you, I'm not a professional writer I'm a hunter that knows this is another jab at taking away hunting in California.

Thanks for your time,
Steve Bresolin

From: [James Emley](#)
To: [Stowers, Craig@Wildlife](mailto:Stowers_Craig@Wildlife)
Subject: Scoping Meeting
Date: Tuesday, November 11, 2014 3:52:32 PM

Dear Craig,

Very many of us in San Diego County find it sorrowing that a few special interest groups, audubon society, the humane society, ETC. have lobbied our government to produce such a reckless and ill informed propaganda effort which is now taking place. Removing lead ammunition is not going to do a thing except cause loss of hunting habitat for those who do hunt. The government is allowing such restrictions to move forward with out the proper understanding and without notice that the scientific reports are inclusive as to hunting. The condors are still dying from poisons in the condor zone. Small planes use lead fuel and as we all know lead is naturally in the environment or in the environment due to man made pollution, not due to hunting. Please note;

Phasing out lead is phasing out hunting. Dove and quail shot will be expensive and many hunters will pass on purchases. What about black powder hunting? Quite a few calibers are not available in non-lead. Does this mean we go out and purchase new firearms? Manufactures will not sell non-lead ammunition just because of California.

This year I have an upland bird tag, deer tag, pig tag. I hunted in Texas this year, 5 hogs in the freezer, used all the lead I wanted. All this law will do is run off hunting to another state where is will be allowed and welcomed. This means no tags or licenses for the Department of Fish and Game, oh excuse me I meant wildlife. What is the name change about anyway as now California needs to change the letterheads and all the sighnage, Wow must cost money when the State can not pay for state employee retirement accounts, 15 billion they owe.

Personally I will use my lead until I cannot. I speak for many. I will purchase out of state hunting licenses and eventually move to TEXAS, land of the free. Thank the lord I am now 58 and can move away and retire!

Next the special interest groups will try to ban lead from BLM land, the peoples land. It is all heading in that direction and the lead ban is the first step. We believe California is making a big mistake.

Best regards,
life long hunter and fisherman
James H. Emley

From: [Claudine Zehnle](#)
To: [Stowers, Craig@Wildlife](mailto:Stowers_Craig@Wildlife)
Subject: Support lead free ammo
Date: Sunday, November 23, 2014 3:55:59 PM

I definitely support lead free ammo.
Sent from my iPhone

From: [Richmond, Ellen](#)
To: [Stowers, Craig@Wildlife](#)
Subject: Ventana Wildlife Society's CEQA Scoping Comment re: AB 711 Implementation
Date: Monday, December 01, 2014 3:10:03 PM
Attachments: [VWS Scoping Comment 12-1-14.PDF](#)

Dear Mr. Stowers:

I have attached Ventana Wildlife Society's CEQA scoping comment in response to CDFW's notice of preparation relating to the implementation of the ban on nonlead ammunition for hunting purposes. Thank you, on behalf of VWS, for the opportunity to comment.

Best regards,
Ellen Richmond

Ellen M. Richmond | Munger, Tolles & Olson LLP
560 Mission Street | San Francisco, CA 94105
Tel: 415.512.4059 | Ellen.Richmond@mto.com | www.mto.com

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MUNGER, TOLLES & OLSON LLP

560 MISSION STREET
TWENTY-SEVENTH FLOOR
SAN FRANCISCO, CALIFORNIA 94105-2907
TELEPHONE (415) 512-4000
FACSIMILE (415) 512-4077

355 SOUTH GRAND AVENUE
LOS ANGELES, CALIFORNIA 90071-1560
TELEPHONE (213) 683-9100
FACSIMILE (213) 687-3702

December 1, 2014

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VIA E-MAIL

Craig Stowers
Environmental Program Manager
California Department of Fish and Wildlife
1812 9th Street
Sacramento, CA 95811

Re: AB 711 Implementation—CEQA Scoping Comments

Dear Mr. Stowers:

Ventana Wildlife Society (VWS) thanks you for the opportunity to comment on the initial study, project description, and preliminary impact analysis recently prepared by the Department of Fish and Wildlife to review the environmental impacts of the Department's proposal for implementing Assembly Bill 711 under the California Environmental Quality Act. VWS is both a leader in the conservation and management of the imperiled bird species that will benefit from AB 711's restrictions on lead ammunition and a dedicated partner of the hunters and ranchers whose participation is vital to the program's success. VWS thus has a unique perspective on the importance of restricting lead ammunition without undue disruption of ranching and outdoor recreation. VWS hopes its perspective will be helpful to the Department as it begins the process of balancing these important interests and analyzing the environmental impacts of the regulatory proposal.

I. Interest of Ventana Wildlife Society

Founded in 1977, Ventana Wildlife Society is committed to the conservation of California native wildlife and their habitats. VWS coordinates outings and educational events to

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foster wildlife stewardship and also runs programs to support the conservation of native species. VWS led the way to successful reintroduction of the bald eagle and California Condor, two of the most iconic birds in the world, to native habitats in central California. At present, VWS manages the captive breeding and release program for condors on the central California coast, working in partnership with the U.S. Fish and Wildlife Service, Pinnacles National Park, and others. As part of that effort, VWS actively manages condor reproduction in central California by replacing non-viable eggs laid in the wild with viable ones from captivity; vaccinating condor chicks against disease; and conducting lead testing for free-flying condors at its Big Sur wildlife sanctuary, among other activities.

In the course of its work, VWS has developed an organizational culture that strongly values science, education, and collaboration and regularly finds ways for both wildlife and people to benefit from each other. This "Ventana Way" is about finding fact-based solutions that benefit society as a whole. In this spirit, VWS is working directly with ranchers and hunters on phasing out the lead ammunition that is affecting the California condor's recovery. Since 2012, Ventana has purchased substantial quantities of nonlead ammunition to provide to ranchers and hunters each year and has plans to continue this program through full implementation of the AB 711 restrictions. VWS staff are in contact with ranchers and hunters on a routine basis and are actively working to address these communities' concerns over the transition to nonlead ammunition.

II. Scoping Comments

Ventana Wildlife Society offers two principal comments on the initial study and preliminary impacts analysis prepared by the Department. First, VWS urges the Department to consider, as an alternative to the phase-in program proposed in the current project description, a program that would phase in nonlead ammunition caliber-by-caliber, on an accelerated schedule. Given its experience purchasing and distributing nonlead ammunition, VWS believes this alternative, which is described in detail below, would have manageable and acceptable impacts on recreation and would greatly reduce the environmental impacts associated with a slower phase-in. Second, the Department should compare the environmental impacts of its proposed alternative to those associated with VWS's proposed accelerated phase-in alternative, and should acknowledge and evaluate the risks associated with slower implementation of AB 711's mandate.

A. The Department Should Evaluate and Adopt an Accelerated Phase-in Alternative

As an alternative to its proposed phase-in plan—under which there will be no requirement that centerfire and rimfire ammunition be nontoxic (except in a very small geographic region) until 2019—the Department should evaluate and adopt the following alternative:

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- Phase 1: Effective July 1, 2015, nonlead ammunition will be required when taking any wildlife with big-game-caliber ammunition, including the .30-06, .308, .270, .243, 7mm, and 30-30 calibers.
- Phase 2: Effective July 1, 2016, nonlead ammunition will be required when taking wildlife with a shotgun, on the terms proposed by the Department in its October 31, 2014 project description.
- Phase 3: Effective July 1, 2017, only nonlead ammunition may be used when taking any wildlife with a firearm for any purpose in California.

This proposed alternative would phase in big-game-caliber ammunition four years faster than the Department currently contemplates, and would phase in smaller-caliber ammunition two years faster than the Department currently contemplates. In the alternative, VWS would be agreeable to switching the proposed phases 1 and 2 above, with nonlead shotgun ammunition phased in July 1, 2015 and big-game-caliber ammunition phased in July 1, 2016. VWS's preference is for centerfire ammunition to be the focus of phase 1, because it is of greater concern to condors than shotshells, though VWS recognizes that the Department may wish to phase in nonlead shotshells first given availability issues.

VWS believes that for both large and small calibers, either proposed alternative would appropriately balance concerns about the availability of nonlead ammunition against the environmental risks of continued reliance on ammunition containing lead. The Department should look closely at VWS's proposal and carefully weigh its feasibility in light of availability issues. See Pub. Res. Code § 21002 (a project may not be approved if less damaging alternatives are available, except where "specific economic, social, or other conditions make infeasible such . . . alternatives"); *Laurel Heights Improvement Ass'n v. Regents of Univ. of Cal.*, 764 P.2d 278, 288-91 (1988) (failure to meaningfully consider alternative building configurations "with a less significant impact on the environment" violated CEQA).

1. Nonlead Ammunition is Available to Support VWS's Proposed Alternative

Since 2012, Ventana Wildlife Society staff have purchased thousands of boxes of nonlead ammunition of a variety of types and calibers and have made this ammunition available to hunters and ranchers free of charge.¹ As a result, VWS staff have become very familiar with

¹ Ventana Wildlife Society, First-Year Results of a Free Non-Lead Ammunition Program to Assist California Condor Recovery in Central California, Dec. 1, 2012, available at http://www.ventanaws.org/images/species/species_condor_lead/Free_Non-Lead_Program_2012.pdf.

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the availability of nonlead ammunition in California. Through the free ammunition program, staff have successfully purchased significant quantities of ammunition from Cabela's, a large national retailer of outdoor equipment, for delivery to program participants primarily located in Monterey and San Benito Counties.² Staff also have purchased nonlead ammunition from other online and physical retailers. The experience of VWS in purchasing nonlead ammunition from a variety of sources is aligned with a survey done by the Institute for Wildlife Studies and Pinnacles National Park. That survey found that, as of August 1, 2014, a total of 332 cartridges were available from local retailers and online retailers cabelas.com, gunbot.net, and superiorammo.com.³

In the course of the 2012 free ammunition program, participants selected 94 different products. The most common selections were .30-06 Springfield, .270 Winchester, .308 Winchester, and .223 Remington, though products from Federal Premium, Barnes, and Hornady were also selected.⁴ In a survey conducted after the distribution of free products, 87% of participants reported that they received their orders promptly, and 88% reported that they were satisfied with the selection of products offered.⁵ Smaller-caliber .22 ammunition was offered through the program, though availability was poor compared to centerfire ammunition.⁶

VWS continued to offer free nonlead ammunition in both big-game and smaller calibers in 2013 and 2014. Across the three-year program, VWS distributed a total of nearly 2,000 boxes of nonlead ammunition, including hundreds of boxes of smaller-caliber ammunition, with some distributions still to come in 2014. In 2013, VWS's distribution was 47% smaller-caliber ammunition; so far in 2014, smaller-caliber ammunition has made up 45% of the total number of boxes distributed. (VWS did not track its smaller-caliber ammunition separately from big-game ammunition in the year 2012.)

Based on its experience with the nonlead ammunition program, VWS believes it is feasible to phase in AB 711's mandate on a more expeditious timeframe than the Department is currently contemplating. The program offers a variety of big-game caliber ammunition, which is widely available. This is no surprise, given that California law already requires the use of

² *Id.* at 5.

³ Scott Scherbinski and Ben Smith, Reducing Impacts of Lead Ammunition: Challenges and Solutions, Sept. 17, 2014, at p. 10, available at http://www.fgc.ca.gov/meetings/2014/sep/Exhibits/5_2_Scherbinski_Smith_20140917.pdf.

⁴ *Id.* at 7.

⁵ *Id.* at 8.

⁶ *Id.* at 8.

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nonlead centerfire rifle and pistol ammunition for take of big game in California condor range.⁷ The program also offers smaller-caliber rimfire ammunition such as Winchester's 22 Long Rifle and Magnum products.⁸ A small number of program participants have commented that the selection of .22 ammunition could be broader, but generally speaking most participants are satisfied with the selections offered through the program. This experience demonstrates that all calibers of ammunition can feasibly be phased in at a relatively rapid pace. Widely available, larger calibers can be phased in right away; small calibers can be phased in over a two-year period, given that these products are already available for purchase.

2. VWS's Proposed Alternative Would Lessen Risks to Wildlife Associated with Lead-Based Ammunition

Accelerating the phase-in of nonlead ammunition in the manner proposed above would significantly diminish the risks to wildlife posed by continued reliance on ammunition containing lead. Both condors and other species would stand to benefit significantly from adoption of VWS's proposed alternative.

a. Diminished Risks to Non-Condor Species as a Result of Quicker Phase-In of Big Game Calibers

Species outside the condor range will benefit greatly from accelerated restrictions on lead ammunition used to shoot big game. Studies have consistently demonstrated that scavengers other than condors—including iconic bird species in California—suffer lead poisoning when scavenging in the presence of lead-based big game hunting. For example, one study found that ongoing lead poisoning of eagles in Minnesota was partly due to the birds' ingestion of lead fragments in gut piles from hunted deer,⁹ which are considered a big game species. It has also been demonstrated that substituting nonlead ammunition alleviates the problem. Scientists working in California found significant decreases in blood lead levels in golden eagles and turkey vultures on Tejon Ranch following just one hunting season under the

⁷ In February 2009, after one season of Ridley-Tree restrictions, the Department reported that hunter compliance was at 99%.

⁸ Certification paperwork for these products is posted at <http://www.dfg.ca.gov/wildlife/hunting/lead-free/certifiedammo.html>. Remington's Disintegrator Varmint product, a small-caliber varmint hunting ammunition type, is also certified as nontoxic.

⁹ Janet L. Kramer & Patrick T. Redig, Sixteen years of lead poisoning in eagles, 1980–95: an epizootiologic view, *Journal of Raptor Research* 31: 327–333 (1997), available at <https://sora.unm.edu/sites/default/files/journals/jrr/v031n04/p00327-p00332.pdf>.

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Ridley-Tree restrictions on the use of lead ammunition for hunting big game,¹⁰ and another study demonstrated that, in the Snake River region of Wyoming, the use of nonlead ammunition in big-game hunting significantly reduced lead exposure in bald eagles.¹¹

As these studies demonstrate, it is likely that, in California, golden eagles and turkey vultures, as well as other animals that range outside the Ridley-Tree-designated condor zone, would benefit from immediate expansion of restrictions on lead ammunition for big game hunting beyond the Ridley-Tree area. Figures 1 and 2 on the following page demonstrate that golden eagles, bald eagles, and turkey vultures are regularly found well outside the Ridley-Tree-protected area.

¹⁰ Terra R. Kelley, et al., Impact of the California lead ammunition ban on reducing lead exposure in golden eagles and turkey vultures, PLoS ONE 6(4): e17656, available at <http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0017656>.

¹¹ Bryan Bedrosian et al, Lead Exposure in Bald Eagles from Big Game Hunting, the Continental Implications and Successful Mitigation Efforts (2012), available at <http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0051978>.

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Figure 1. Area Protected under Ridley-Tree Condor Preservation Act¹²

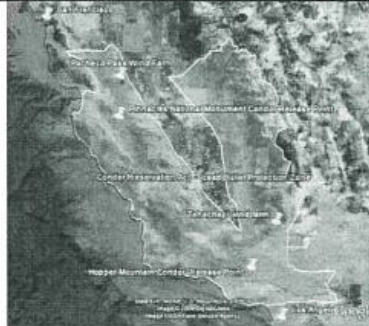
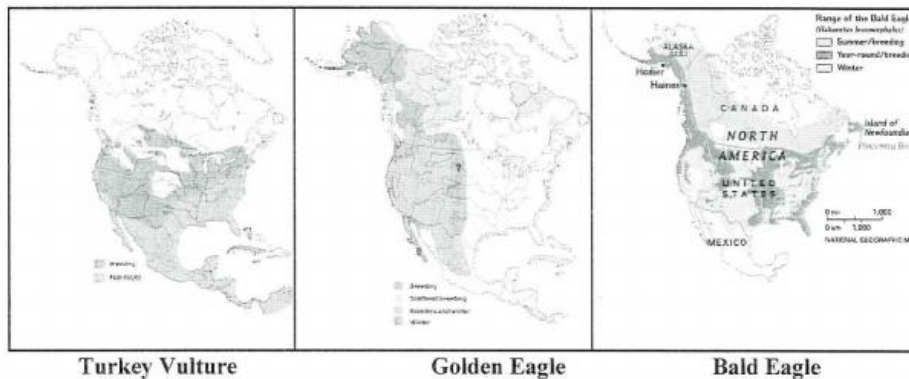


Figure 2. Ranges of the Turkey Vulture,¹³ Golden Eagle,¹⁴ and Bald Eagle¹⁵



¹² Available at: <http://www.examiner.com/article/california-condors-wind-farms-on-collision-course>.

¹³ Cornell Lab of Ornithology Birds of North America, Turkey Vulture, <http://bna.birds.cornell.edu/bna/species/339/articles/introduction>.

¹⁴ Cornell Lab of Ornithology Birds of North America, Golden Eagle, <http://bna.birds.cornell.edu/bna/species/684/articles/introduction>.

¹⁵ National Geographic Society 2002, <http://ngm.nationalgeographic.com/ngm/0207/feature2/map.html>.

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b. Diminished Risks to Species as a Result of Quicker Phase-In of Smaller Calibers

The quicker phase-in of smaller-caliber ammunition under VWS's proposed alternative will also significantly diminish the risks this ammunition poses to condors and other species. During its 15 years of managing the central California condor population, VWS has witnessed direct evidence of the harms to condors from ingestion of small-caliber ammunition. For example, in November 2012, a ten-year-old male condor (#318) died after ingesting a lead .22 caliber bullet, presumably while feeding on a small animal carcass. As VWS has noted on its website:

The bird was found in San Benito County barely alive and unable to feed or use its legs to stand. Despite valiant efforts, veterinarians could not save him. Cause of death, through necropsy, was determined to be lead toxicosis. A radiograph showed multiple metal fragments and a bullet-shaped object in the digestive tract []. The object was removed and determined to be a .22 caliber lead bullet []. The death of condor #318 is a huge loss for the central California population. This bird was a breeding male, the first at Pinnacles National Park in more than 100 years. With only a few breeding pairs established in the region, his loss leaves a void which might not be quickly filled. His surviving mate has left the breeding territory, and it is not clear if and when she will pair with another condor and breed again. The loss of even a small number of breeding pairs, and the offspring they produce, puts the entire population at risk.¹⁶

As this anecdote demonstrates, even a small number of lead poisonings can cause a cascade of adverse effects on the small California condor population. Given that poisoning from .22 caliber ammunition has recently been observed inside the Ridley-Tree-protected area at Pinnacles, quick action to phase out this ammunition is very likely to confer a substantial benefit on condors.

Other species also stand to benefit from rapid phase-out of lead ammunition in small calibers. One early study in migrating eagles in Montana showed elevated blood lead levels in 85% of golden eagles and 97% of bald eagles, and suggested that fragmented lead-core bullets in ground squirrels were one possible source.¹⁷ Another study showed that fragmented

¹⁶ Ventana Wildlife Society, Species Recovery, Condors and Lead, http://www.ventanawildlife.org/species_condors_lead/ (last visited Nov. 18, 2014). The website contains photographs showing the .22 caliber bullet found in condor #318 at Pinnacles.

¹⁷ A.R. Harmata & M. Restani, *Environmental Contaminants and Cholinesterase in Blood of Vernal Migrant Bald and Golden Eagles in Montana*, Intermountain J. of Sci. (1995), cited in Robert Domenich & Heiko Langner, *Blood-Lead Levels of Fall Migrant Golden Eagles* (footnote continued)

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lead ammunition in ground squirrels could—given ground squirrel consumption rates by Swainson's and ferruginous hawks—provide “an appreciable source of lead that could prove fatal to scavenging hawks.”¹⁸ Rapid removal of this source of contamination could thus provide a substantial benefit to bald eagles, golden eagles, and other scavengers.

3. The Department Must Analyze the Impacts on Wildlife that Will Result from Any Decision Not to Adopt an Accelerated Phase-In Alternative

In addition to including VWS's proposed alternative in the draft EIR that it is preparing, the Department must consider the environmental impacts described above, which will be heightened in the event that the Department selects its currently proposed alternative instead of an accelerated phase-in alternative.

The comparison between preferred and less-damaging alternatives—including analysis of the impacts of each—is a core part of the CEQA process and a key step towards minimizing environmental harm. See *Env'tl. Prot. Info. Ctr. v. Johnson*, 216 Cal. Rptr. 502, 610 (1985).¹⁹ Here, the Department has a clear legislative mandate—to restrict all lead ammunition used to take wildlife by 2019—and has a range of options for implementing that mandate. The key decisions the Department must make are how fast to phase in the required restrictions, and which ammunition sources should be regulated first. CEQA is designed to help the Department understand the relative environmental consequences associated with these sorts of regulatory choices. Here, in order to fully understand the consequences of its preferred regulatory scheme, the Department must assess the impacts of that proposal and the means of mitigating those impacts through less-damaging, accelerated proposals like VWS's.

in *West-Central Montana*, extended abstract in R.T. Watson et al eds., *Ingestion of Lead from Spent Ammunition: Implications for Wildlife and Humans*, The Peregrine Fund, available at http://www.biologicaldiversity.org/campaigns/get_the_lead_out/pdfs/Domenich_and_Langler_2009.pdf.

¹⁸ Loren D. Knopper et al, *Carcasses of Shot Richardson's Ground Squirrels May Pose Lead Hazards to Scavenging Hawks*, 70(1) *J. Wildlife Mgmt* 295 (2006), abstract available at http://www.biologicaldiversity.org/species/birds/California_condor/pdfs/Knopper-et-al-2006.pdf.

¹⁹ *EPIC v. Johnson* described the joint goals of CEQA and the streamlined timber harvest plan process that is applicable in the forestry context.

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Ventana Wildlife Society appreciates the opportunity to comment on the CEQA scoping process for the implementation of AB 711. VWS looks forward to collaborating with the Department and with the hunting and ranching communities in implementing this important law.

Very truly yours,

/s/ Ellen M Richmond

Ellen M. Richmond

received hard-copy 11/19

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FRIENDS OF THE NORTHERN SAN JACINTO VALLEY

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November 14, 2014

Attn: Craig Stowers
California Department of Fish and Wildlife
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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, Nonlead 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**

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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.



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Friends of the Northern San Jacinto Valley
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951-368-4525



Susan Nash, President
Friends of the Northern San Jacinto Valley
snash22@earthlink.net
951-228-6710

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.



ATTACHMENT #1

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

By Tom Paulek

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 Mary 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

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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

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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
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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 Cornatzter, it was an unforgettable image, one that troubled him deeply.

An avid hunter, Cornatzter 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. Cornatzter 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 Cornatzter, 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 Cornatzter 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

<http://www.scientificamerican.com/article/wild-game-deer-venison-condors-meat-lead-ammunition-ban/?print=true>



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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

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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.

Appendix G

Standardized Regulatory Impact Assessment

Re: Prohibition on the Use of Lead Projectiles and Ammunition
Using Lead Projectiles for the Take of Wildlife with Firearms

A. Statement of Need for Proposed Regulation

1. Implementation of AB711: Fish and Game Code Section 3004.5

The proposed regulations phase in the requirements of Fish and Game Code Section 3004.5, which prohibits the use of any lead ammunition when taking any wildlife with a firearm after July 1, 2019. The implementation schedule is structured to balance the statutory requirements with the complexities of the firearms and ammunition sectors' supply response as consumer demand shifts to various nonlead ammunition types with the new regulatory requirements. Public input and the Department of Fish and Wildlife's (Department) understanding of the current and anticipated future availability of the required types of ammunition greatly influenced the phase in timing. The transition is planned over a four year period to give ammunition manufacturers sufficient incentive and time to invest in developing new product lines and increased production to meet the increasing demand for nonlead ammunition in California from July 1, 2015 and beyond.

Proposed Phase Approach

Phase 1: Effective July 1, 2015, it shall be unlawful to use, or possess with any firearm capable of firing, any projectile that is not certified as nonlead when taking:

- Nelson bighorn sheep; or
- All wildlife in any Department wildlife area or ecological reserve.

Phase 2: Effective July 1, 2016, it shall be unlawful to use, or possess with any shotgun capable of firing, any projectile that is not certified as nonlead when taking:

- Upland game birds except for dove, quail, snipe, and any game bird taken under the authority of a Licensed Game Bird Club;
- Small game mammals;
- Furbearing mammals;
- Nongame mammals;
- Nongame birds; or
- Any wildlife for depredation purposes.
- It will still be legal to take the above animals with a rifle using traditional lead rimfire and centerfire ammunition.

Phase 3: Effective July 1, 2019, it shall be unlawful to use, or possess with any firearm capable of firing, any projectile that is not certified as non-lead when taking:

- Any wildlife for any purpose in the State of California.

2. Existing State Regulations

The proposed regulations add to existing state regulations adopted in 2007 and 2008 for the California condor range that prohibit the use of lead projectiles to hunt deer, bear, wild pig, elk, and pronghorn antelope and in 2008, prohibit the use of lead projectiles in the same area for hunting coyotes, ground squirrels, and other nongame wildlife. Effective July 1, 2008, all big game and nongame hunters within the condor range area were required to use nonlead ammunition.⁷

3. Outreach

The Department conducted an extensive, pre-notice public outreach effort between January and October of 2014. At the January 15, 2014, meeting of the Fish and Game Commission's (Commission) Wildlife Resources Committee (WRC) in Van Nuys, the Department introduced a "starting point" proposal that outlined a potential four-year phase-in for nonlead ammunition. The starting point proposal was based on the Department's understanding of the current availability of nonlead ammunition and became the focal point for a series of public meetings throughout the state from Susanville to San Diego. In addition to public workshops, the Department also sought public input at international sporting goods shows and at meetings of the National Wild Turkey Federation in Vacaville, Ducks Unlimited in Corning, and the Director's Hunting Advisory Committee in Sacramento.

The Department presented an update of its outreach efforts as well as planned future efforts at the Commission's WRC meeting in Sacramento on July 28, 2014. At this meeting, the Commission received testimony by Dr. Vernon G. Thomas of the University of Guelph in Canada on behalf of Audubon California, Defenders of Wildlife and the Humane Society of the United States on his survey of the current availability of nonlead ammunition in California.

The Department presented a public review draft of the proposed regulatory text at the Commission's WRC meeting in Sacramento on September 17, 2014. At this meeting, the Commission received testimony by Mr. Scott Scherbinski of Pinnacles National Park and Mr. Ben Smith of the Institute for Wildlife Studies on reducing the impact of lead ammunition in California. Testimony was also received from Mr. Rob Southwick of Southwick Associates on behalf of the National Shooting Sports Foundation on the potential effects of the ban on lead ammunition on hunting participation in California and

⁷ Methods Authorized for Taking Big Game, Section 353, Title 14, California Code of Regulations (CCR); Modifications to Methods of Take for Nongame Birds and Mammals, Section 475, Title 14, CCR.

associated economic measures.

In addition to public workshops and meetings, the Department also contacted representatives of the ammunition manufacturing and distribution sectors for their input on the proposed phasing. A meeting with ammunition retailers was held at the Yolo Basin Wildlife Area on September 3, 2014. Letters requesting input from major ammunition manufacturers were sent on August 26, 2014, to Barnes Bullets, Inc., Federal Premium Ammunition, Hornady Manufacturing, Kent Cartridge, Magtech Ammunition Company, Inc., Nosler, Remington Arms Company, LLC, Weatherby, Inc., and Winchester Ammunition.

B. Source of Potential Economic and Fiscal Impact

The proposed regulations will phase in the requirement to use nonlead ammunition for all hunting in the state. During the four-year implementation period, compliance may involve increased (explicit and transactions) costs for hunters. Hunters may choose to respond to increased costs by reducing their level of hunting activity. Any reduction in hunt days would reduce direct trip and equipment spending and the subsequent rippling of that spending throughout the local and state economy, potentially impacting total economic output, jobs, and tax revenues.

1. Impact Assessment Methodology

After establishing the baseline conditions the Department utilized the following analytical methods to estimate and evaluate the potential economic and fiscal impacts.

a. Elasticity of Demand

The exercise of predicting hunter reaction to an increase in “costs” can be characterized as an exercise in gauging the “price elasticity of demand” for hunting. We reviewed published literature on the price elasticity of demand and the determinants of the demand for hunting. The published findings derived from large data sets of hunting activity over time provide a frame of reference for evaluating estimates of hunter reaction to the proposed regulatory change.⁸

b. Stated Preference and Revealed Preference

Surveys that probe for a subject’s anticipated response to future scenarios identify “stated preferences.” The historical record of actual decisions and behavior in reaction to a change represent “revealed preference.” We took into account the findings of surveys that asked hunters how they anticipated their hunting activity would change if

⁸ Poudyal, et al., 2008; U.S. Forest Service, 2007; Sun, et al., 2005; Saskatchewan Environment, 2005; Handbook of Environmental Economics, Volume 2, Ed. Karl-Göran Mäler,, et al., 2005.

faced with a range of potential cost increases for nonlead ammunition.⁹ Generally, surveys that solicit potential responses to hypotheticals or, in other words, solicit an individual's stated preference have some limitations. The responses may be illustrative of underlying sentiments but may not match actual responses when the consequence of an individual's choice has real costs. These survey results inform our current analysis, but recognizing the limitations of stated preference, whenever possible we sought to use revealed preference as guide to anticipate future reactions to this regulation change.¹⁰

The Department has an indication of revealed preference in the historical record of comparable past nonlead ammunition programs. We examined the level of hunting activity in the condor range before and after nonlead ammunition regulations were put into effect in 2008. We also looked into the hunter and ammunition manufacturer response to federal regulations that banned lead ammunition for the take of waterfowl across the country in 1991. Additionally, we reviewed the experience of other states' nonlead programs. The outcome of these comparable programs is presented in further detail in the conclusion section following the projected economic and fiscal impact section.

c. Multiplier Analysis

All costs and benefits due to the proposed regulatory change are calculated on an annual basis over each one year period as the successive phases are implemented and through the twelve months after the proposed regulation is fully implemented in 2019. The baseline of hunting activity in the state is specified. The projected changes in levels of hunting activity and direct expenditures are then utilized to estimate the total economic and fiscal impacts with multipliers derived with IMPLAN social accounting matrices.¹¹

1. The broad economic impacts assessed are: changes in direct expenditure by hunters, along with the subsequent indirect, induced, and employment effects of any change in direct expenditure as multiplied through the affected sectors that serve hunting activities.
2. The economic impacts to ammunition manufacturers and hunting supply retailers (doing business in California) that were specifically assessed are: the direct, indirect and induced effects of any changes in revenues to the ammunition

⁹ Southwick Associates, *Effects of the Ban on Traditional Ammunition for Hunting in California on Hunting Participation and Associated Economic Measures*, prepared for National Shooting Sports Foundation (NSSF) Sept. 2014.

¹⁰ "It would appear from historical data, that the surveyed reactions to fee increases may be exaggerated. While the survey data is still valuable, it should not be used as an unqualified projection of the market elasticity." *Economic Evaluation of Hunting in Saskatchewan*, 2006.

¹¹ Minnesota IMPLAN Group, Inc., *State and National Economic Effects of Fishing, Hunting and Wildlife-Related Recreation on U.S. Forest Service-Managed Lands*, American Sportfishing Association, 2007.

manufacturers and hunting supply retail sectors.

3. The fiscal impacts assessed are: revenue to the state from hunting license sales; federally allocated Pittman-Robertson Funds; Department expenditures for education and enforcement; as well as sales tax revenue impacts and fiscal impacts to local and federal governments.

2. Major Regulation Determination

The proposed regulations could exceed \$50 million in total economic and fiscal impacts in the 12 months following full implementation from July 2019 to July 2020. However, given Department analysis of historical license sales in response to similar regulations in the condor range, we anticipate a less than five percent reduction in hunting activity. The phase in schedule is specifically structured to avoid major disruption to the hunting community and associated businesses.

Because of existing uncertainty over the future availability and cost of nonlead ammunition, we evaluated a range of potential reductions in hunting effort, including the Department's projection of up to five percent, a mid-range of 10 percent, and a drop of 13 percent based on the report by Southwick Associates.¹² Table 1 shows the projected changes in hunter direct expenditure, hunt days, total economic output, total economic and fiscal impact and the price elasticity of demand value associated with the anticipated change in hunting activity. If hunting is reduced by 10 percent with no change in the initial compliance costs then the regulations would exceed the threshold for a major regulation.

Table 1. Major Regulation Threshold (\$2013)

Twelve Month Period after Full Implementation						
% Reduction in Hunting ¹	Projected Change in Hunter Direct Expenditure	Projected Change in Hunt Days	Total Economic Output	Economic and Fiscal Impacts: Major Regulation Total	<i>PED < 1 Inelastic</i> <i>PED > 1 Elastic</i>	
5%	\$ (13,539,407)	(173,582)	\$ (27,363,142)	\$ (29,381,073)	(0.68)	
10%	\$ (27,078,815)	(347,164)	\$ (54,726,284)	\$ (58,762,146)	(1.35)	
13%	\$ (35,202,459)	(451,314)	\$ (71,144,170)	\$ (76,390,790)	(1.78)	

¹ A range of potential percentage reductions in hunting activity are evaluated to assess a range of possible hunter responses to the proposed regulation.

C. Baseline Hunting Activity

1. Licensed Hunters

We used Department records from the Automated License Data System (ALDS) and the License and Revenue Branch (LRB) of hunting license sales as opposed to USFWS

¹² Southwick Associates, 2014.

2011 survey results to determine the baseline number of hunters potentially affected by the proposed regulations. The number of licensed resident and non-resident hunters in 2013, the most recent year with full data, was 287,052.

The Department's count of hunters is the number of hunting licenses sold by type totaled to reflect the actual number of individual resident and non-resident hunters each year. The ALDS, which was fully implemented in 2011, provides the most accurate recording of all LRB transactions. The totals vary from those reported in the *2011 National Survey on Fishing, Hunting and Wildlife-Associated Recreation* published by the United States Fish and Wildlife Service (USFWS) due to differing data collection methodologies. The USFWS survey methods provided an estimate of 394,000 hunters in 2011, whereas the Department count is 282,266 licensed hunters in 2011.

The USFWS surveys a random sample of the population on angling, hunting and wildlife-associated recreation that is then extrapolated out to estimate the numbers found in each state. Insufficient observations hamper the reliable reporting of findings in several instances for California. The USFW survey is of all wildlife-associated recreation, with hunters being a small minority of the survey's expanded population. Capturing the number of hunters via surveys is challenging for California. Although California is the most populous state, on a per capita basis certified license holders comprise less than one percent of the total state population.

2. Long-Term Trends in Hunting Participation

The number of hunters across- the country has been declining. In 1970, there were over 40 million licensed hunters in the nation and a peak of 763,500 in California. Now there are 12.6 million hunters across the country and 287,052 in the state. The number of California hunters has been relatively stable over the past decade from 2004 to 2013 as shown in Department LRB records.

Table 2. Resident and Non-Resident Hunting Licenses 2004 – 2013

2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
299,293	298,212	301,668	297,612	293,231	289,609	287,229	282,266	284,218	287,052

Source: LRB, 2014.

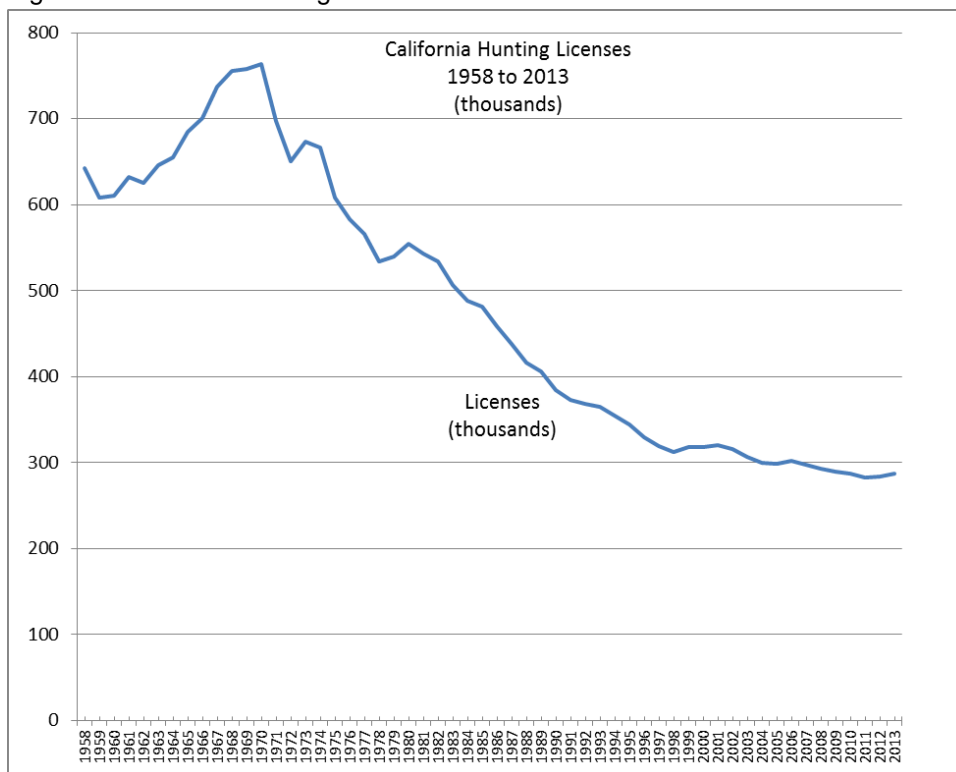
This steady decline over the decades has been attributed to a number of causes including habitat loss and resulting declines in both game species and places to hunt, demographic changes, competing recreation options, movement out of rural areas, changes in disposable income, and other societal changes.¹³ Surveys of hunters over time have shown that the majority of hunters have higher than average income, are

¹³ William C. Gartner, et al., Trends in Outdoor Recreation, Leisure, and Tourism, 2004.

white (94%), male (89%), and over 45 years old (55%).¹⁴ Broader demographic developments in the state have tended to shrink that population base as a share of the total.

Figure 1 displays the number of resident and non-resident hunting licenses issued. Non-resident licenses comprise about 3 percent of the total throughout this time period. During the 1970s to 1980s there were substantial declines in hunting, but by 2003 the number of hunters over the last ten years has been relatively stable. More women are joining the sport and youth recruitment has kept pace. However the aging of the core participants may exert an influence on the total numbers.

Figure 1. California Hunting Licenses



Sources: USFWS License Sales by State, 1958-1969; CDFW LRB, 1970 – 2013.

3. Demand for Hunting

We reviewed academic research on the determinants of the demand for hunting that examined the price elasticity of demand, income elasticity of demand, and how socio-demographic characteristics of the population relate to hunting demand. Hunting demand is found to be quite price inelastic; that is to say that the level of hunting does not respond much to changes in the price of things that comprise a small share of the total cost of hunting activities. A small increase in a recurring cost (e.g. licenses,

¹⁴ USFWS, Fishing, Hunting, and Wildlife-Associated Recreation (FHWAR), 2011, Revised 2014.

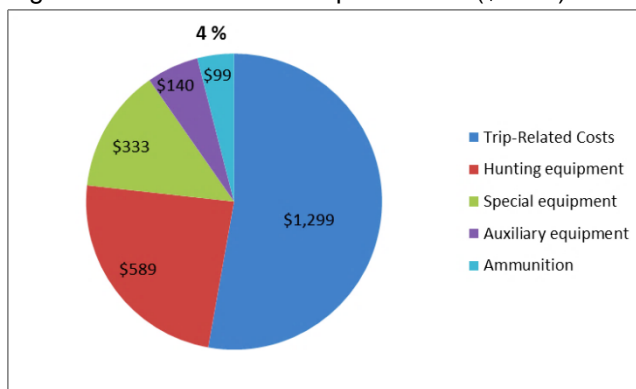
ammunition, fuel costs, etc.) appears to be put in context of each hunter's previous investment in hunting equipment and total annual trip expenses. The research supports the conclusion that hunting is an activity that is bound by tradition and that it is a unique activity with no like substitutes.¹⁵

Socio-demographic factors, such as, age, gender, race, as well as urban or rural residency, have been found to have pronounced effects on hunting demand. Despite annual population growth rates of about 1.3% to 2.9% in the state, broader demographic trends have tended to diminish the pool of traditional hunters.¹⁶

4. Baseline Hunter Expenditures

As hunter numbers have been trending downward, expenditures per hunter have been trending upward. Between 2006 and 2011, hunter trip-related, inflation-adjusted spending has increased by 40 percent and equipment spending has increased by 17 percent. Across the country, hunter spending on ammunition is typically about four percent of total equipment and trip expenditures as illustrated in Figure 2.¹⁷

Figure 2. Annual Hunter Expenditures. (\$2013)



Source: USFWS *Fishing, Hunting and Wildlife-Associated Recreation, 2011, Table 17.*

5. Baseline Hunt Days

California's 287,052 hunters pursue a variety of game mammals and birds on hunting trips often comprised of multiple days. The number of hunt days and changes in the number of hunt days by species or area in response to the proposed regulations is the key metric for the economic assessment.

The proposed regulations will not affect the hunt days of more than 70,500 hunters that pursue waterfowl since waterfowl hunting is currently subject to federal restrictions on

¹⁵ Poudyal, et al., 2008; U.S. Forest Service, 2007; Sun, et al., 2005; Saskatchewan Environment, 2005; Handbook of Environmental Economics, Volume 2, Ed. Karl-Göran Mäler, et al., 2005.

¹⁶ William C. Gartner, et al., 2004.

¹⁷ USFWS, *Fishing, Hunting, and Wildlife-Associated Recreation*, tables 17, 2011.

the use of lead shot.¹⁸ The proposed regulatory action will also not affect the hunting activity of roughly 47,700 deer hunters that hunt within the condor range and are currently subject to state prohibitions on the use of lead projectiles. However, as the proposed regulations are phased in, these same hunters may be affected should they choose to hunt in the newly regulated areas or for the species that are designated for non-lead method of take each year of the implementation schedule.

Table 3. Baseline Lead and Nonlead Hunt Days and Expenditure Shares (\$2013)

Hunters, Hunt Days, and Expenditures 2013			
	Lead & Nonlead	Nonlead	Nonlead
California	All Hunters	Condor Range ¹	Waterfowl
Hunters by Game Type	287,052	47,730	70,509
Hunting Days per Year	4,879,884	429,570	909,566
Annual Expenditures ²	\$ 380,630,952	\$ 60,139,800	\$ 35,473,078
% of All Hunters	100%	17%	25%
% of All Expenditures	100%	16%	9%
1 Deer only, other nonlead game hunts not included			
2 Hunt days by game and annual expenditure from USFWS, FHWAR, 2011.			
<i>Sources: CDFW LRB, ALDS 2014; USFWS, FHWAR 2011.</i>			

D. Economic Impact of the Proposed Regulation

1. Affected Hunters by Phase

The regulations are proposed to be implemented in stages in an effort to minimize the disruption of hunting activities and the resulting economic contribution to the state economy. The proposed phasing provides manufacturers additional time to increase the production of nonlead ammunition to meet the demand of California hunters. Accordingly, each phase affects a limited number of hunters and meters the demand for nonlead ammunition over the four-year transition period. The Department's Wildlife Branch (WLB) hunter survey results, Biogeographic Data Branch spatial analysis, and LRB data on license sales by species groups were used to estimate the numbers of affected hunters and hunting days by phase.

Phase 1

Beginning July 1, 2015, the proposed regulations require hunters to use nonlead ammunition on Department wildlife areas and ecological reserves. With the exception of a few wildlife areas and ecological reserves that have full-time employees that monitor human uses, the Department does not track the numbers of hunters using

¹⁸ United States Fish and Wildlife Service, 1991, Nontoxic shot regulations for hunting waterfowl and coots in the U.S. <http://www.fws.gov/migratorybirds/currentbirdissues/nontoxic.htm>.

Department lands that are specified in Phase 1. However, the lands where the Department has full-time employees are the ones most frequented by hunters and other visitors. In order to obtain an estimate of the number of hunters and hunting days that would be affected in Phase 1, the Department utilized existing geocoded data to calculate the proportion of the total range of each hunted species that falls within Department wildlife areas and ecological reserves. These percentages were then applied to the numbers of hunters reported for each species statewide in the 2010/2011 Game Take Survey Report, the most recent report available. This method resulted in a total estimate of 4,028 hunters using Department lands that are not managed by full time employees (see Table 1 in the Appendix). Based on hunting records from Department lands with full time employees and the experience of Department wildlife biologists, this number is thought to underestimate the number of hunters and hunting days that would be affected in Phase 1. To make sure the impacts of Phase 1 are not under-reported, for this analysis we doubled the estimate to 8,070 hunters. This figure includes the 14 Nelson bighorn sheep hunters that would also be affected in Phase 1. The number of affected hunt days was then estimated by applying the average number of annual hunt days per hunter as reported by USFWS survey data.¹⁹

Phase 2

The numbers of hunters and hunting days affected in Phase 2 include those who hunt upland game birds (excluding dove, quail and snipe); fur-bearing mammals; non-game mammals²⁰; non-game birds; or any wildlife for depredation purposes. Phase 2 requires nonlead ammunition when taking these species with a shotgun, but would still allow take with traditional lead rifle ammunition. The additional numbers of affected hunters were estimated by working with Department license and validation sales and game take survey results. This subset of hunters was then added to the number of affected hunters in the Phase 1 totals.

Phase 3

Phase 3, effective July 1, 2019 will constitute full implementation of the proposed regulations. While many hunters have already been in compliance with the portions of the regulations that were implemented in Phase 1 and Phase 2, these hunters will continue to be affected by the nonlead requirement in 2019 and beyond. By July 2019, the regulations will affect all hunters and hunting days in the state of California. In 2019, the cumulative total number of affected hunters is estimated to be 282,987 as adjusted by the 2003 - 2013 trend line in license sales.

¹⁹ USFWS, 2011. Revised 2014.

²⁰ Nongame mammals are defined in Fish and Game Code Section 4150 as all mammals occurring naturally in California which are not game mammals, fully protected mammals, or fur-bearing mammals.

Table 4. Estimated Numbers of Affected Hunters By Phase

Phase	Time Period	Areas and Species	Estimated Number of Hunters Affected
1	July 1, 2015 – June 30, 2016	All Wildlife on CDFW Wildlife Areas and Ecological Reserves; Nelson Bighorn Sheep.	8,070
2	July 1, 2016 – June 30, 2019	Upland game birds (excluding dove, quail, & snipe); fur-bearing mammal; non-game mammal; non-game birds, or any wildlife for depredation purposes.	186,073
3	July 1, 2019 – onward ¹	All Wildlife in California.	282,987

¹ The total number of affected hunters in 2019 includes those in previous phases 1 and 2. The full implementation figure also takes into account population growth and the ten-year trend line in license sales. While not all hunters will be affected (e.g. those who only hunt waterfowl), this approach yields the most comprehensive estimate of potential economic effects.

2. Compliance Costs for Affected Parties: Hunters

The proposed regulation in prohibiting traditional lead projectiles for hunting may:

- increase the cost of ammunition (steel, copper, tungsten, and other non-lead alloys)
- require new gun purchases (in a few exceptional instances), and
- change performance which may involve recalibration costs.

a. Ammunition Costs

Traditional ammunition prices have been increasing at unprecedented rates; for some calibers, prices have increased by two or three times since 2008. The retail cost of nonlead ammunition varies widely, depending on the caliber and design of the cartridge or projectile. Currently, nonlead ammunition can range from 30 percent more to as much as twice the price of the lead counterpart, presumably due to smaller production runs and higher component prices. In comparing market prices it depends on whether the comparison is between two premium versions in lead and nonlead, where the nonlead version may be 30 percent higher than the lead price. In contrast, comparing a lower grade lead bullet to a premium grade nonlead bullet, the price may be 50 percent to twice the price of the lead version.²¹ In some instances the nonlead version is the same or less than the premium version of the lead bullet.²² A 2014 Southwick Associates study using current data augmented with surveys of manufacturers predicted that supply shortfalls could push centerfire nonlead ammunition prices up to

²¹ <http://www.Huntingwithnonlead.org>, Smith, Petterson and Brown, 2014

²² Vernon C. Thomas, Availability and Use of Nonlead Rifle Cartridges and Nontoxic Shot for Hunting in California, with Reference to Regulations used in Various Jurisdictions & Survey of California Ammunition Retailers to Assess Availability of Nonlead Ammunition, prepared for the sponsors of AB 711, July 2014.

nearly three times the price of the lead counterpart (by 284%).²³ Accordingly, we used a range of proposed nonlead ammunition price increases in our estimates of economic impacts, but chose to work principally with the estimated nonlead ammunition cost increase of nearly twice as much or, “on average, up to 190 percent more than the equivalent traditional ammunition.”²⁴ (see Appendix, Table 2 for retail cost comparisons for lead-core and nonlead centerfire rifle ammunition for commonly used calibers, October 2014).

b. Firearm Incompatibility Costs

During public outreach many hunters expressed concern that their firearms would not accommodate nonlead ammunition. In most cases this was related to antique or vintage shotguns that cannot handle the pressures of nonlead shotshells. However, it is possible that hunters using rifles firing unusual calibers may also have to retire those weapons if nonlead ammunition is not available. In those instances, modification of their current shotgun or a new firearm may be necessary. Expenditures on a new firearm would constitute a hunting equipment expenditure that is amortized over the life of the firearm in the annual expenditure calculations maintained by USFWS. We included a generous estimate (10 percent) for the instances in which such an outlay might be necessary. The additional cost of around \$1,300 for a firearm is amortized over twenty years and included in our compliance costs calculations.

c. Recalibration Costs

We also heard during public outreach that nonlead ammunition performs differently and will require hunters to spend some time recalibrating, sighting and shooting to learn the different ballistic properties of the alternative ammunition. A USFWS analysis of national survey data found that 52 percent of hunters target shoot in preparation for hunting and 22 percent of hunters prepare for hunting with practice at a shooting range.²⁵ Slightly more, or 29 percent, of hunters in the Pacific region used ranges to practice, perhaps due to greater access to ranges than wild lands. That said, the data shows that most hunters practice before the hunt on unsupervised outdoor ranges on public land in the state where shooting is free. Yet many use outdoor target shooting ranges where fees run from \$10 to \$20 for a few hours of range time. We have included the need for an increase in expenditure for range fees and spent bullets in the transition to nonlead ammunition.

3. Component Costs Impact on Annual Expenditures

²³ Southwick Associates, 2014.

²⁴ *Economic Impact of Traditional Ammunition Ban*, National Shooting Sports Foundation, 2010.

²⁵ *Target Shooting by Hunters and Their Use of Shooting Ranges: 1975, 1991, and 2011*, USFWS, June 2014.

A prevailing concern is that these incremental cost increases will change the level of hunting activity: numbers of hunters and/or the number of hunt days, reducing hunting expenditures to a range of businesses during a hunt trip and to ammunition manufacturers and retailers. We analyzed potential compliance costs in the context of the total average annual expenditure per hunter as reported in USFWS survey data. As component costs increase, sometimes nearly doubling in the case of ammunition or in the unusual case where a firearm cannot accommodate non-lead alternative ammunition, the increase in spending may appear to be quite substantial. However, if the increased costs to comply with the proposed regulations are seen in the context of a typical year's expenditure of \$2,557 adjusted for 2013 dollars, the percentage increase in component costs constitutes only a seven percent increase.²⁶ Table 5 provides an estimate of potential component cost increases by category.

Table 5. Component Costs Increase (\$2013)

	Baseline Annual Costs	New Cost of Compliance	Increase in Cost
Ammunition	\$ 99	\$ 188	\$ 89
Recalibration Costs	\$ 40	\$ 70	\$ 30
Firearms Costs	\$ 223	\$ 288	\$ 65
Total	\$ 362	\$ 546	\$ 184

Sources: USFWS Tables 17, 20, 21 and for CA 2011, revised Feb 2014, Tables 20-22

Current hunter spending on ammunition is about four percent of total equipment and trip expenditures.²⁷ The projected increases in compliance costs as the new regulations are phased in are estimated to result in an average annual increase of \$184 to cover nonlead ammunition and additional firearm and recalibration costs. These costs would now comprise seven percent of the total annual expenditure of \$2,557.

4. Price Elasticity of Demand for Ammunition and for Hunting

The proposed regulations are expected to effectively increase the cost of hunting as per unit ammunition prices increase; practice and recalibration costs increase; and equipment replacement and maintenance costs increase. As the costs to pursue hunting increase, the key question is how hunters will respond. This question is essentially an exercise in determining the price elasticity of demand (PED) for hunting. Any entity, whether a private company or a public agency, when proposing a price increase needs to consider whether the price increase will result in a reduction in the quantity demanded and to what degree. If demand drops substantially in response to a price increase, the good is "price elastic." If a good has an array of substitutes and is not a necessity, the price elasticity of demand may be more elastic. Goods that are

²⁶ USFWS, 2011, revised 2014.

²⁷ USFWS, 2011, revised 2014, Tables 20, 21.

critically necessary may be perfectly inelastic. Goods that have very few substitutes are usually price inelastic. Hunting has been found to be highly price inelastic in studies using American and Canadian data.²⁸ That is to say that hunting demand changes less than the percentage change in the costs of hunting.

Hunting Research findings:

- Inelastic PED
- Short-run more inelastic (0.21); than the Long-run (0.60)²⁹
- Big Game (0.23) to (0.62)
- Small Game (0.36) to (1.06)³⁰

These results suggest that hunting is a:

- Tradition-bound behavior

The price elasticity of demand is a measure of the responsiveness of the quantity demanded of a good to changes in the price of that good. The elasticity of demand for something is:

$$\text{Elasticity} = \frac{\frac{\text{Difference in Quantity}}{\text{Quantity}}}{\frac{\text{Difference in Price}}{\text{Price}}} = \frac{\text{Percent Change in Quantity}}{\text{Percent Change in Price}}$$

If PED > 1 Demand is Elastic and if PED < 1 Demand is Inelastic

The strong price inelasticity of hunting is also supported by surveys that ask hunters why they chose in the past to not hunt or to reduce their amount of hunting. Competing time commitments from work and family and declining health are the most common explanations, while increased costs to hunt rank near the bottom.³¹

5. Supply of non-lead ammunition

The change in the price of ammunition and the potential new firearm and recalibration costs are *explicit costs* changes. Comments received during outreach often referred to the limited availability of all ammunition and nonlead ammunition particularly. Reported supply bottlenecks can be viewed as increasing the *transactions costs* for acquiring non-lead ammunition. Transactions costs are the search costs, wait periods for back orders and so on, that make simply purchasing the nonlead ammunition in a chosen caliber more difficult than for traditional lead ammunition.

Supply constraints

An array of factors that could influence the price and availability of nonlead ammunition for hunting include: the price of component materials; ammunition sector investment and innovation; U.S. military demand; Bureau of Alcohol Tobacco and Firearms

²⁸ *Demand for Wildlife Hunting in British Columbia*, Sun, et al., Canadian Journal of Agricultural Economics, 53, 2005, 25-46; *Economic Evaluation of Hunting in Saskatchewan*, 2006; Poudyal, et al., 2008; U.S. Forest Service, 2007; Handbook of Environmental Economics, Volume 2, Ed. Karl-Göran Mäler, et al., 2005.

²⁹ *Ibid*, Sun, et al., Canadian Journal of Agricultural Economics, 53, 2005, 25-46.

³⁰ *Economic Evaluation of Hunting in Saskatchewan*, 2006.

³¹ *Wildlife and the American Mind, Public Opinions on and Attitudes toward Fish and Wildlife Management*, Duda, Bissell, and Young, Responsive Management, 1998.

determinations on non-lead ammunition; legislation (such as Senate Bill 53, 2014) that would limit internet purchases of ammunition; and any number of factors outside the Commission's sphere of influence.

The Department has considered these factors and how they may contribute to limiting the supply of nonlead ammunition needed to comply with these regulations. The perceived relative availability of ammunition in various calibers has been a principle rationale for the proposed timing of the phase in. The intent is to phase in the new nonlead requirements in the least disruptive manner, while still providing enough stimulus to market demand for manufacturers to respond. As demand grows in California, the total market demand combined with other states that have nonlead ammunition programs is anticipated to incentivize larger scale production lines and, in the long run, lower consumer costs. Table 6 shows hunting days by state as an indicator of the future relative market demand for nonlead hunting ammunition by state.

Table 6. Relative Market Demand by States with Non-Lead Ammunition Programs

Hunting Days Percentages by State		
USA Total	281,884,177	100%
California	6,730,616	2.39%
Arizona	2,634,280	0.93%
Utah	2,720,463	0.97%
Minnesota	5,589,294	1.98%
Total:		6.27%

Sources: USFWS, 2011, rev. 2014, and Southwick Associates, 2014.

E. Expected Change in Level Of Hunting Activity By Phase

The proposed regulations are to be phased in over the span of four years to be the least disruptive to the hunting community and other affected parties.³² To gauge the potential impact of each successive phase, a range of potential hunting reduction rates: five percent (projected by the Department), ten percent (mid-range estimate), and 13 percent (projected by Southwick Associates, 2014) were assessed.

Based on observations of hunter response to the nonlead restrictions in the condor range, the Department anticipates that less than five percent of hunters or a drop in overall hunt days of less than five percent will occur. This is consistent with published research on the price elasticity of demand for hunting and other factors, such as the impact of tradition and previous investment in equipment that are found to influence the demand for hunting. The rate of reduction in hunting activity may vary by phase as the

³² Governor Edmund G. Brown Jr., Signing message for AB 711, October 11, 2013.
http://gov.ca.gov/docs/AB_711_2013_Signing_Message.pdf

numbers of affected hunters and types of game varies; however for simplicity we have used the same potential reduction rate for each phase.

1. Impact Estimates

The following tables show the potential economic impacts if hunting were to decline by five percent, 10 percent, and 13 percent. The price elasticity of demand (PED) associated with the projected percentage change in hunting demand is indicated for each table.

Table 7. Estimated Total Annual Economic Impact of Lead Ammunition Ban by Phase:

5% Reduction in Hunting Activity; PED = (0.68)

Phase	Change in Direct Expenditure	Total Multiplier Effect	Salaries & Wages	Jobs
1	\$ (535,041)	\$ (1,081,318)	\$ (269,126)	(9)
2	\$ (12,336,640)	\$ (24,932,349)	\$ (6,205,330)	(210)
3	\$ (13,539,407)	\$ (27,363,142)	\$ (6,810,322)	(230)

Table 8: Estimated Total Annual Economic Impact of Lead Ammunition Ban by Phase:

10% Reduction in Hunting Activity; PED = (1.37)

Phase	Change in Direct Expenditure	Total Multiplier Effect	Salaries & Wages	Jobs
1	\$ (1,070,082)	\$ (2,162,636)	\$ (538,251)	(18)
2	\$ (24,673,280)	\$ (49,864,698)	\$ (12,410,660)	(419)
3	\$ (27,078,815)	\$ (54,726,284)	\$ (13,620,644)	(460)

Table 9: Estimated Total Annual Economic Impact of Lead Ammunition Ban by Phase:

13% Reduction in Hunting Activity; PED = (1.78)

Phase	Change in Direct Expenditure	Total Multiplier Effect	Salaries & Wages	Jobs
1	\$ (1,391,107)	\$ (2,811,426)	\$ (699,727)	(24)
2	\$ (32,075,264)	\$ (64,824,108)	\$ (16,133,858)	(545)
3	\$ (35,202,459)	\$ (71,144,170)	\$ (17,706,837)	(598)

We also estimated the total economic impact with a nonlead ammunition price increase of 284 to 294 percent due to the increased demand driving prices up in a supply

constrained market.³³ The estimated outcome under such conditions resulted in a projected seven percent reduction in hunting and total negative economic impact in the final implementation phase of (\$38,308,399).

F. CONCLUSION

After evaluating the available information from a wide array of sources, the Department assessment supports a potential decline in hunting activity of less than five percent. The total economic and fiscal impacts are anticipated to be less than the impacts induced by a five percent reduction in hunting as fully presented in Tables 5 and 6 in the Appendix. This rate of decline in hunting, less than five percent with a price elasticity of demand less than (0.68), is not only consistent with published research on the demand for hunting, but also accords with the state's experience following the condor range lead ammunition prohibitions established in 2008.

It should be noted however, that the ban on lead ammunition in the condor range affects only about a quarter (25.8%) of California's deer hunters and a much smaller percentage of the state's total hunters. Current supplies of nonlead ammunition appear adequate to meet this volume of demand. In the event that manufacturers are unable to meet the increasing demand for nonlead ammunition as the regulations are phased in statewide, imbalances in supply and demand may make it more difficult for California hunters to obtain suitable ammunition. Under these conditions a larger percentage of hunters may reduce their hunting activity or decide not to participate altogether. If hunting participation decreases by nine percent or more, the resulting impact on total economic output will exceed the \$50 million threshold for major regulations.

a. Condor Range Experience 2008 to present

Legislative analysis of the 2007 Condor bill included speculation by those opposing the bill that hunting activity could decline by as much as 25 percent based on stated preferences from surveys.³⁴ However, Department tag sales and harvest report data have shown virtually no drop in tag sales. The four-year average number of tags sold for the condor range areas prior to 2007 was 47,233. The four-year average following the implementation of the condor range lead ammunition prohibition was 46,167, constituting a drop of 2.26 percent or 1,066 fewer tags sold to hunters. It should be noted that variations in tag sales are influenced by a number of factors including annual tag quotas; weather; and in this time period especially, consumer sentiment given the

³³ Southwick Associates, 2014.

³⁴ Assembly Committee Analysis of AB 821, 2007. "The National Shooting Sports Foundation notes that recent surveys of hunters show that as many as 25% of hunters would either quit hunting big game or hunt less in California if a ban were adopted. A decrease in hunting could result in a loss of revenue to DFG from hunting license and tag sales, taxes on ammunition sales, and other economic contributions associated with hunting."

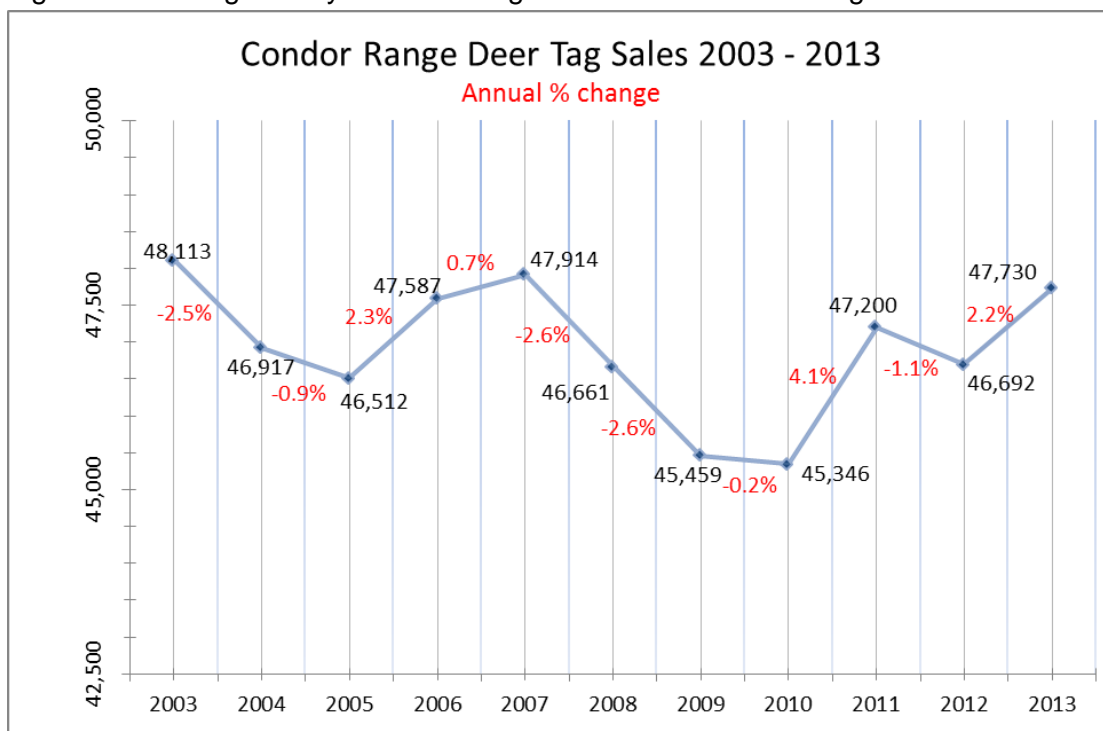
unprecedented 2008 - 2009 financial collapse. If the same price increase anticipated for lead ammunition today were applied to the hunting demand response at that time, the price elasticity of demand would be highly inelastic at (0.32).

Table 10. Hunting Activity: Condor Range Post-2008 Lead Prohibition.

	2005-2007	2008-2011	% Change
Condor Range Deer Tags	47,233	46,167	-2.26%
Price Elasticity of Demand : 7% increase in expenditure			(0.32)

Sources: LRB and WLB.

Figure 3. Hunting Activity Condor Range Pre- and Post-2008 Regulation



Sources: LRB and WLB.

Table 11. Deer Tag Sales in Condor Range by Zone: 2003 - 2013

Deer Tag Sale Statistics - pre & post lead prohibition											
	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Zone/Hunt	Tags Sold	Tags Sold	Tags Sold	Tags Sold	Tags Sold	Tags Sold	Tags Sold	Tags Sold	Tags Sold	Tags Sold	Tags Sold
A (110)*	21,296	21,008	20,056	19,896	19,896	18,843	18,194	17,580	18,577	18,207	18,917
G8**	60	20	20	20	20	20	20	20	20	20	20
G9**	30	30	30	30	30	30	30	30	-	-	-
G11***	500	500	500	500	500	500	500	500	500	500	501
G21	25	25	25	25	25	25	25	25	25	25	25
J10	40	60	60	40	85	85	85	85	85	85	85
MA 1	150	150	150	150	150	150	150	150	150	150	150
MA 3	150	150	150	150	150	150	150	150	150	150	150
total A	21,751	21,443	20,491	20,811	20,856	19,803	19,154	18,540	19,507	19,137	19,848
D7 general	9,000	9,000	9,000	9,000	9,000	9,000	9,000	9,000	9,000	8,999	9,001
D8 general	7,031	6,983	7,149	7,260	7,310	7,389	7,421	7,296	7,425	7,140	7,551
G6	50	50	50	50	50	50	50	50	50	50	50
total D8	7,081	7,033	7,199	7,310	7,360	7,439	7,471	7,346	7,475	7,190	7,601
D9 general	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000
D10 general	700	588	623	517	584	548	425	550	622	625	604
D11 general	4,161	3,107	3,925	4,749	4,610	4,517	4,006	4,209	4,713	4,696	4,856
J13	40	40	40	40	40	40	40	40	40	40	40
total D11	4,201	3,147	3,965	4,789	4,650	4,557	4,046	4,249	4,753	4,736	4,896
D13 general	3,230	3,556	3,084	3,010	3,314	3,164	3,213	3,511	3,693	3,855	3,630
M7	150	150	150	150	150	150	150	150	150	150	150
total D13	3,380	3,706	3,234	3,160	3,464	3,314	3,363	3,661	3,843	4,005	3,780
Condor Range Total	48,113	46,917	46,512	47,587	47,914	46,661	45,459	45,346	47,200	46,692	47,730
Percentage Change		-2.5%	-0.9%	2.3%	0.7%	-2.6%	-2.6%	-0.2%	4.1%	-1.1%	2.2%
*Tags Sold = 60% of total A zone tag sales; **1/2 public, 1/2 military; ***all military.											

Sources: LRB and WLB.

b. Licensed Hunters Historical Record

Additionally, projections of a 10 percent or 13 percent drop in hunting participation are without precedent in Department records. At no time in history, even with the dramatic drops in hunting participation in the 1970s through the 1980s, did the state experience an annual drop higher than nine percent. The year with the highest drop was 8.8% from 1973-1974. Moreover annual changes in the numbers of hunters since 2000 have not exceeded three percent up or down. The average annual percentage change from 2000 to 2013 is less than one percent (-0.71%).

Table 12. Hunting Licenses and Annual Percentage Change from 2000 to 2013.

2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
317,517	320,823	316,249	306,747	299,293	298,212	301,668	297,612	293,231	289,609	287,229	282,266	284,218	287,052
-0.03%	1.0%	-1.4%	-3.0%	-2.4%	-0.4%	1.2%	-1.3%	-1.5%	-1.2%	-0.8%	-1.7%	0.7%	1.0%

Source: LRB, 2014.

c. Federally Mandated Waterfowl Lead Prohibition

In 1991 the use of lead ammunition to hunt waterfowl was banned across the entire country. Many states phased the prohibition in stages as was the case for California. License sales statistics show that waterfowl hunters continued to hunt at similar levels throughout the phase in period of the federal ban on lead shot from 1985 to 1991 in the

state of California. Initially some hunters reported dissatisfaction with the performance of nonlead alternatives, particularly steel shot. Over the course of a few years, ammunition manufacturers responded and developed a wide variety of nonlead shot alloys such as: tungsten-bronze-iron, tungsten-iron, and tungsten-tin-bismuth. Steel shot shotgun shell loads have undergone significant improvements as well. Overall it is reported that the required compliance across the country triggered industry to respond with new products that improved performance and brought costs down as materials costs permit.³⁵

d. Other States

Arizona and Utah have nonlead programs that include some cost offsetting by the state and third parties. Compliance rates have been high with no reduction in numbers of hunters. Arizona Game and Fish implemented a voluntary nonlead program in 2005 to reduce the amount of lead in their condor range. The state has been offering hunters free non-lead ammunition if they hunt in condor territory. Over 2011 to 2013, Arizona surveyed hunters and found that 88 percent were in compliance voluntarily. The survey also found that the majority were satisfied with the performance of nonlead ammunition. In 2011, Utah launched a voluntary non-lead ammunition program similar to Arizona's. The program expanded substantially in 2013. Big game hunters that hunt in condor territory receive coupons for free non-lead ammunition. Utah has been aided by a third party, The Peregrine Fund, which has donated prizes to encourage increased use of nonlead ammunition to help restore condor populations. Minnesota has a program advocating the use of nonlead ammunition for the preservation of raptors and moreover, for the health of those who consume wild game. Several states (34 or more) have nonlead programs for specific species, and/or by specific areas. These states' more limited programs have not been shown to deter hunting in the specific regulated areas within each state.

G. Alternatives to the Proposed Project

As enacted, Fish and Game Code section 3004.5 requires full implementation of the ban on the use of nonlead ammunition for the take of wildlife by July 1, 2019. The law also requires that the Commission implement, in advance of July 1, 2019, any of the statute's requirements that can be implemented practicably, thus the range of alternatives to the proposed project is limited. With that in mind, three alternative approaches to the phasing in of nonlead ammunition were developed based on evidence and input received during 16 pre-notice public outreach meetings. These alternatives to the proposed regulations are considered below:

³⁵ *Non-Toxic Shot Buyer's Guide*, Frank Ross, Cabela's.com.

Alternative 1. Early Implementation

Alternative 1 consists of full implementation of section 3004.5 on July 1, 2015. This early implementation of the requirement to use nonlead ammunition would result in the highest risk of economic impacts to hunting activities, but would also immediately reduce lead introduced to the environment through hunting activities. Ingestion of lead fragments or pellets in carcasses and gut piles by scavenging wildlife should be reduced or eliminated with associated reductions in blood lead levels and potential lead poisoning in predatory and scavenging birds.³⁶ While this alternative may provide near term benefits to wildlife as compared to the other alternatives, it may not be practicable based on the current availability of nonlead rifle and shotgun ammunition. Ammunition in general is in short supply both in California and nationwide, leading to shortages and backorders for even traditional ammunition. Based on the limited capacity of manufacturers to increase production, it is likely not practicable to meet the demand for nonlead ammunition in California as early as 2015. We estimated the economic impacts resulting from a 13 percent reduction in hunting as predicted by a recent Southwick Associates analysis.³⁷ This alternative would be most disruptive to hunting activity in the state and the sectors of the economy that depend on hunting due to the higher likelihood of supply shortfalls to meet a sudden increase in demand.

Table 13. Alternative 1: Potential Economic Impacts (\$2013)

Effective date	Projected Percent Change	Change in Direct Expenditure	Total Multiplier Effect	Salaries & Wages	Jobs
July 1, 2015	5%	\$ (13,539,407)	\$ (27,363,142)	\$ (6,810,322)	(230)
July 1, 2015	10%	\$ (27,078,815)	\$ (54,726,284)	\$ (13,620,644)	(478)
July 1, 2015	13%	\$ (35,202,459)	\$ (71,144,170)	\$ (17,706,837)	(598)

See the Appendix, Table 3 for more detail on data sources.

Alternative 2. Modified Implementation Phasing

This alternative would accomplish the transition to nonlead ammunition in two phases as opposed to the three outlined in the proposed regulations. Alternative 2 would advance the implementation process by combining phases 1 and 2 of the proposed project with an effective date of July 1, 2015. Full implementation would remain at July 1, 2019. Under Alternative 2, hunters on Department lands, bighorn sheep hunters, and hunters using a shotgun to take specified upland game birds, small game mammals, furbearing mammals, nongame mammals, nongame birds, and any wildlife for depredation purposes, would be required to use nonlead ammunition after July 1, 2015.

³⁶ Kelly et al., Impact of the California lead ammunition ban on reducing lead exposure in golden eagles and turkey vultures, Conservation Biology, 2011.

³⁷ Southwick Associates, 2014.

Because nontoxic shot has been required for waterfowl hunting nationwide since 1991, nonlead shot shells in waterfowl sizes are thought to be widely available.³⁸ For this reason, it is potentially practicable to phase in take of wildlife with a shotgun using waterfowl-sized shot in 2015. Because of extremely limited supplies of nonlead .22 and .17 rimfire ammunition, and the resulting economic impact, small game and nongame species could still be taken with traditional lead ammunition until July 1, 2019. While precise estimates cannot be made, this alternative is anticipated to disrupt hunting activity to a greater extent (reducing hunting activity by nearly 10%) than the proposed regulations due to the higher likelihood of ammunition supply deficiencies. The total impacts under this alternative could approach \$50 million in a twelve month period after Phase 1 and exceed \$50 million during the year after full implementation in 2019.

Table 14. Alternative 2: Potential Economic Impacts (\$2013)

Effective date	Projected Percent Change	Change in Direct Expenditure	Total Multiplier Effect	Salaries & Wages	Jobs
July 1, 2015	5%	\$ (12,336,640)	\$ (24,932,349)	\$ (6,205,330)	(210)
July 1, 2019		\$ (13,539,407)	\$ (27,363,142)	\$ (6,810,322)	(230)
July 1, 2015	10%	\$ (24,673,280)	\$ (49,864,698)	\$ (12,410,660)	(419)
July 1, 2019		\$ (27,078,815)	\$ (54,726,284)	\$ (13,620,644)	(478)
July 1, 2015	13%	\$ (32,075,264)	\$ (64,824,108)	\$ (16,133,858)	(545)
July 1, 2019		\$ (35,202,459)	\$ (71,144,170)	\$ (17,706,837)	(598)

See the Appendix, Table 3 for more detail on data sources.

Alternative 3. Delayed Implementation (No Project)

The third alternative, which is also the “No Project” alternative that will occur if the Commission takes no action, consists of no implementation occurring until July 1, 2019. Implementation on July 1, 2019 would minimize the near term impacts on recreation as compared to the proposed regulations. This alternative would give ammunition manufacturers the maximum amount of time to increase production of nonlead ammunition in anticipation of the increased demand by California hunters after July 1, 2019. While this alternative would likely be less disruptive to hunting-based recreation in the short run, it provides less incentive to manufacturers to begin increasing production of nonlead ammunition. Moreover, it does not meet the requirements of the statute to implement all or portions of the law in advance of July 1, 2019 if it is practicable to do so. Given that the statutory requirements are not met, this alternative cannot be recommended.

³⁸ Vernon G. Thomas, July 2014.

H. Economic Impact on other Affected Parties: Businesses

1. Affected Hunting Trip-Related Businesses

Businesses that serve hunters on hunt trips could expect marginal changes in the volume of visitors to hunting areas. Hunters spend at a variety of establishments while traveling to hunting areas and in the rural communities near the hunting areas. These establishments include Campgrounds (35%); Lodging (23%); Restaurants (23%); Retail markets (13%); and Gas stations (6%).

2. Ammunition Manufacturers

Being the most populous state, California has been a large market for ammunition manufacturers. The fastest growing segment, the target shooting market (52%) will not be impacted by the proposed regulations; neither will the ammunition sectors' growing exports. The share of consumer sales to hunters nationally constitutes approximately 40 percent. Industry annual reports say that the historic levels of firearms and ammunition sales are expected to continue after a mild tempering in the rate of growth after 2013.³⁹ Steady growth in the target shooting market is expected to mitigate any shifts in hunting equipment sales. Lead ammunition supplies are expected to continue to be in strong demand by target shooters, personal protection consumers, and hunters outside California. With the phase in of the proposed regulations, hunters may be expected to purchase more nonlead ammunition at higher per unit costs, which should yield higher per unit margins until manufacturer competition and higher production runs reduce costs.⁴⁰

Table 15. Firearms and Ammunition Manufacturer Annual Sales and Growth Rates

	Net Revenue	Growth		Growth	(Millions\$)
Year End Dec 31, 2013	2013	Rate %	2012	Rate %	2011
Firearms	\$ 740	26%	\$ 551	23%	\$ 426
Ammunition	\$ 437	24%	\$ 332	5%	\$ 314
All Other	\$ 92	46%	\$ 49	28%	\$ 35
Totals	\$ 1,268	27%	\$ 932	17%	\$ 775

Sources: Freedom Group Annual Reports, 2012, 2013 and 2014(Q2).

3. Hunting Equipment Retailers

Despite slow growth in the overall U.S. economy, the hunting equipment retailing market has grown by 22% between 2006 and 2010.⁴¹ The possibility of higher margins on nonlead ammunition along with the inducement for new firearms sales are

³⁹ Freedom Group Annual Report 2014.

⁴⁰ *Hunting and Sporting Goods Retailing Report*, Mintel Associates, 2012.

⁴¹ Mintel Group.

anticipated to increase revenues in this sector. Many large hunting equipment retailers have close ties to large manufacturer groups that enable favorable product mix and stocking strategies. Approximately 45 percent of the Freedom Group commercial net sales in 2013 were directly to major retail and sporting goods chains, such as Cabela's, Gander Mountain, Academy Sports + Outdoors, Wal-Mart, Bass Pro Shops and Dick's Sporting Goods. Many large equipment retailers also have a strong internet sales presence that greatly expands their consumer base beyond California. Efficient inventory relationships with large manufacturers, along with a large non-hunting consumer base should mitigate any reductions (due to a potential five percent reduction in hunting) in revenue to large equipment retailers. Smaller hunting goods retailers that serve largely local markets may have more difficulty in maintaining a favorable product mix, including new nonlead ammunitions.

I. Fiscal Impact

The fiscal impact of the proposed regulations during each year through the phase in period was assessed. Although any decline in hunting activity is anticipated to be less than five percent, we present the resulting fiscal impacts with a projected five percent decline in hunting activity.

Table 16. Summary Projected Fiscal Impacts by Phase (\$2013)

Phase	Time Period	Projected Change in Total Hunt Days by Phase	Baseline CDFW License & Tag Sales Revenue ²	CDFW License & Tag Sales Revenue Impact ³	Pittman- Robertson Excise Tax Revenues Impact ⁴	CDFW Expenditure Impact ⁵	CDFW Total Revenue Impact	Projected Sales & Motor Fuel Tax Revenue to State ⁶	State Income Tax
1	July 1, 2015 - June 30, 2016	(6,860)	\$ 840,724	\$ (42,036)	\$ (1,324)	\$ (45,000)	\$ (88,360)	\$ (36,383)	\$ (12,840.98)
2	July 1, 2016 - June 30, 2019	(158,162)	\$ 19,384,882	\$ (969,244)	\$ (30,533)	\$ -	\$ (999,777)	\$ (838,892)	\$ (296,079.36)
3	July 1, 2019 - June 30, 2020 One Year Full Implementation	(173,582)	\$ 21,274,822	\$ (1,063,741)	\$ (33,510)	\$ -	\$ (1,097,251)	\$ (920,680)	\$ (324,945.78)

See the Appendix, Table 4 for more detail on data sources.

1. Pittman-Robertson Excise Tax Revenue

The Pittman-Robertson (PR) allocation method takes land mass, population, and numbers of hunting licenses compared to that of the entire country into consideration. California with the largest population and third largest land mass receives the maximum (five percent of the total) allowable under those criteria. These factors along with the tremendous growth in the PR country-wide total fund suggest that the California allocation level will not be significantly impacted by consequences of the proposed regulations. Any change in the amount allocated to the state would more likely be a result of changes in the collection of PR excise tax funds from firearms and ammunition equipment sales across the country.

Table 17. Top Five Pittman-Robertson Fund States 2014 with Allocation Criteria

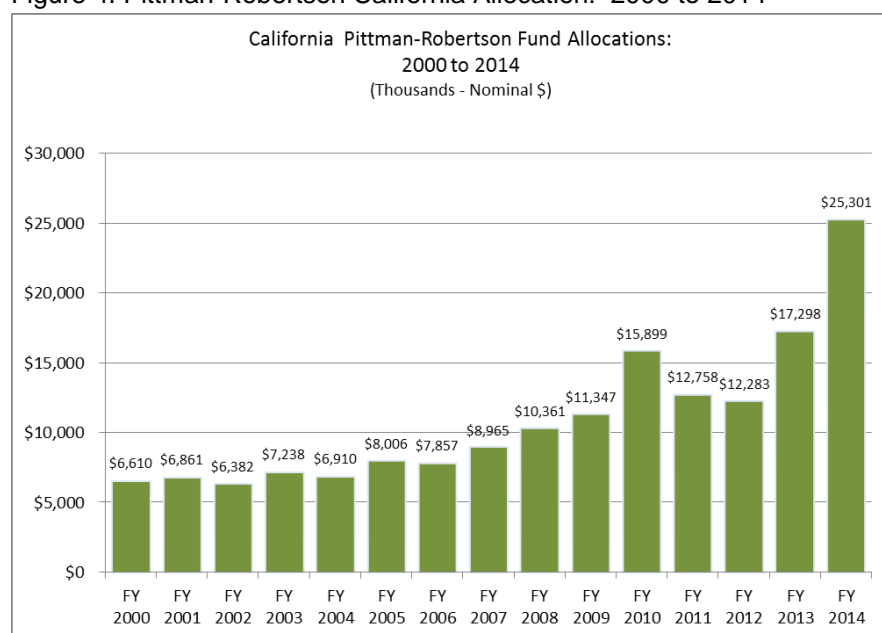
	2013 Hunting	2014 PR Fund	Hunter	Hunters	State Pop	State Land	
	Licenses	Allocation	/Pop	/USA Hunters	/USAPop	/USALand	Rank
TX	1,036,946	\$ 35,275,009	4.26%	7.09%	8.02%	7.40%	1
AK	101,547	\$ 32,511,089	14.80%	0.69%	0.23%	16.17%	2
PA	968,735	\$ 27,975,344	7.78%	6.62%	4.10%	1.27%	3
CA	281,472	\$ 25,301,091	0.77%	1.92%	12.11%	4.41%	4
MI	786,880	\$ 25,028,297	7.61%	5.20%	3.30%	1.61%	5

Source: USFWS, Pittman-Robertson Allocation to states, 2014.

It is notable that in 2008 the year that the condor range nonlead regulations went into effect, license sales dipped by 2.6 percent, but the allocation of Pittman-Robertson Funds increased by 16 percent, or by \$1.4 million. The following year the state's allocation increased another 10 percent, or by \$1 million.

The USFWS has projected a downturn in the total allocation of funding largely driven by the moderation in firearms and ammunition sales starting in 2014 across the country. The overall sum total of funds collected across the country, from which each state receives an apportionment, is likely to impart a larger influence than any change in total hunting license sales on Pittman-Robertson funding for the state of California.

Figure 4. Pittman-Robertson California Allocation: 2000 to 2014



Source: USFWS, Pittman-Robertson Allocation to states, 2014.

2. Department License Sales Revenue

The impact on Department Licenses and Tag Sales revenue is estimated with a projected five percent decline in total hunting activity in Table 18 below.

Table 18. Projected CDFW License Sales Revenue Impact by Phase (\$2013)

Phase	Time Period	Projected Change in Total Hunt Days by Phase	Baseline CDFW License & Tag Sales Revenue ²	CDFW License & Tag Sales Revenue Impact ³
1	July 1, 2015 - June 30, 2016	(6,860)	\$ 840,724	\$ (42,036)
2	July 1, 2016 - June 30, 2019	(158,162)	\$ 19,384,882	\$ (969,244)
3	July 1, 2019 - June 30, 2020 One Year Full Implementation	(173,582)	\$ 21,274,822	\$ (1,063,741)

² & ³: See the Appendix, Table 4 for more detail on data sources.

3. Department Expenditure

The Department is projected to spend roughly \$45,000 in regulation development and outreach in the year preceding the promulgation of the proposed regulations in July 1, 2015. Thereafter few additional expenditures are foreseen for the Department.

4. State Sales Tax Revenue

The impact on State Sales Tax revenue is estimated with a projected five percent decline in total hunting activity.

Table 19. Project State Sales Tax Revenue by Phase (\$2013)

Phase	Time Period	Projected Sales & Motor Fuel Tax Revenue to State
1	July 1, 2015 - June 30, 2016	\$ (36,383)
2	July 1, 2016 - June 30, 2019	\$ (838,892)
3	July 1, 2019 - June 30, 2020 One Year Full Implementation	\$ (920,680)

See the Appendix, Table 4 for more detail on data sources.

5. State Income Tax

The impact on State Income Tax revenue is estimated with a five percent decline in total hunting activity.

Table 20. Project State Income Tax by Phase (\$2013)

Phase	Time Period	State Income Tax
1	July 1, 2015 - June 30, 2016	\$ (12,841)
2	July 1, 2016 - June 30, 2019	\$ (296,079)
3	July 1, 2019 - June 30, 2020 One Year Full Implementation	\$ (324,946)

See the Appendix, Table 4 for more detail on data sources.

J. Effects of the regulation on the creation or elimination of jobs within the State

The Department does not anticipate any significant impacts on the creation or elimination of jobs, because the phase in structure should minimize any disruptions in hunting activity, and the resulting economic activity, over four years. The multiplier for jobs in the hunting, ammunition manufacturing, and outdoor sports retail sectors is 17 jobs per million dollars in direct expenditure. If full implementation precipitates a five percent reduction in hunting activity, approximately 230 jobs could be eliminated across the state. The impact on job creation and elimination is estimated with a projected five percent decline in total hunting activity in Table 21.

Table 21. Projected Impact on Jobs (\$2013)

Phase	Change in Direct Expenditure	Total Multiplier Effect	Salaries & Wages	Jobs
1	\$ (535,041)	\$ (1,081,318)	\$ (269,126)	(9)
2	\$ (12,336,640)	\$ (24,932,349)	\$ (6,205,330)	(210)
3	\$ (13,539,407)	\$ (27,363,142)	\$ (6,810,322)	(230)

See the Appendix, Table 3 for more detail on data sources.

K. Effects of the regulation on the creation of new businesses or the elimination of existing businesses within the State

The Department does not anticipate significant impacts on the creation of new business or the elimination of existing businesses in California. However, some new business activity may be spurred to serve hunters' needs for nonlead ammunition, hand-loaded bullets, and practice time on shooting ranges.

L. Effects of the regulation on the expansion of businesses currently doing business within the State

The Department anticipates the potential for some expansion of businesses currently doing business in California that manufacture or sell nonlead ammunition. Hunting guides and/or shooting ranges that may aid in the acquisition and transition to the use of nonlead ammunition may also have the potential to expand.

M. Benefits of the Regulations

1. Benefits of the regulation to the health and welfare of California residents

The Department anticipates benefits to the health and welfare of California residents from better protection of the State's natural resources and through the better management of toxic lead substances that may be deleterious to those who consume wild game. Lead shot can fragment into tiny pieces and spread out several inches from the entry point into tissue even if the main shot pieces exit the animal.⁴² Consequently, the amount of lead in processed game meat, particularly ground venison, has been shown, in some instances, to exceed levels thought to be suitable for human consumption. A number of studies have reported elevated lead levels in humans that rely on lead-shot meat for subsistence.⁴³ More recently, there is evidence that lead levels in people who eat game harvested with lead ammunition can be elevated as well.⁴⁴ Children can be particularly sensitive to lead poisoning and even very low levels of lead can cause permanent cognitive damage.⁴⁵

2. Benefits of the regulation to worker safety

The Department does not anticipate any benefits to worker safety because this regulatory action will not impact working conditions or worker safety.

3. Benefits of the regulation to the State's environment:

The Department anticipates benefits to the environment through the better management of toxic lead substances that can be deleterious to wildlife, including threatened and/or endangered species. Scavenging and predatory birds are highly susceptible to lead poisoning when they consume lead shot or fragmented lead bullets in hunter-killed carcasses or discarded gut piles. Some ground feeding species such as mourning doves, wild turkeys, and pheasants may consume lead pellets inadvertently as they

⁴² Tsuji et al. 2009, Hunt et al. 2009, Pain et al. 2010.

⁴³ Johansen et al. 2004, Johansen et al. 2006, Tsuji et al. 2008.

⁴⁴ Iqbal, S., et al., Hunting with lead: association between blood lead levels and wild game consumption, National Institutes of Health, 2009.

⁴⁵ Lanphear et al., Low-Level Environmental Lead Exposure and Children's Intellectual Function: An International Pooled Analysis, Environmental Health Perspectives, 113(7): 894–899, Jul 2005.

forage for seeds.

4. Investment and Incentives

It is difficult to measure the change in investment that this regulation could induce however generally new requirements may induce compliance investment. In this case, environmental externalities, such as lead bullet fragments, have not been recognized as costs internal to the firm such that firms have under-invested in environmentally sound technology. Since the environmental consequences of lead ammunition, have precipitated public and legislative action, now new government regulations may act as critical triggers to prompt investment. As larger shares of the ammunition manufacturing sector are compelled to invest to develop new products that comply with new standards, the spread of new technologies may eventually bring costs down and externalities as well.

5. Incentives for Innovation in Products, Materials, or Processes

Innovation typically involves research and development expenditures and prototype development at less than cost-effective scales of production. Moreover, firms that invest in innovation often have difficulty retaining all of the benefits of their expenditures because their new technologies may be copied by competing firms. In this instance the proposed regulations will spur incentives to innovate in a larger variety of nonlead ammunition types than are currently available. Over time competition among manufacturers is expected to promote innovation in ballistics performance and to reduce production costs that may be passed onto consumers.

N. Personal Income

The direct and indirect impacts of projected decreases in direct expenditure by hunters is not expected to register any difference to the state's aggregate level of personal income, which was \$1,856,614 million in 2013 (Bureau of Economic Analysis data series as posted by the California Department of Finance).

O. Gross State Product

Gross State Product (\$ 2.2 trillion in 2013, California Department of Finance) is not expected to register much overall change as a result of the implementation of the proposed regulations. Hunters constitute less than one percent of the state's population. The businesses supported by hunting activity are also supported by growing customer bases in target shooting, fishing, camping and wildlife watching. Industry studies have reported significant growth in firearms, ammunition, hunting and outdoor sporting goods market sectors of over 22 percent annually since 2009.⁴⁶

⁴⁶ *Hunting and Fishing Equipment U.S. Market Report 2006-2010*, Mintel Group, 2012; Freedom Group Annual Reports 2010 through to 2014.

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Appendix

Table 1 Numbers of Hunters using Wildlife Areas and Ecological Reserves 2010.

COMMON NAME	TOTAL ACREAGE SPECIES RANGE	ACREAGE OF SPECIES RANGE WITHIN WILDLIFE AREAS	% OF RANGE ON WILDLIFE AREAS	ECOLOGICAL RESERVE	% OF RANGE ON COMBINE LANDS (WA AND ER)	2010 GAME TAKE SURVEY HUNTER NUMBERS	ESTIMATED NUMBER OF HUNTERS USING DFW LANDS
Band-tailed Pigeon	53,553,237	316,222	0.590%	66,663	0.715%	3,914	28
Black Bear	39,113,760	96,333	0.246%	52,171	0.380%	24,844	94
Black and White-tailed Jackrabbit	97,562,333	693,390	0.711%	125,074	0.839%	8,546	72
Brush Rabbit	43,594,547	288,561	0.662%	76,307	0.837%	9,904	83
All Quail	98,837,024	688,013	0.696%	125,237	0.823%	69,248	570
Chukar	27,238,914	219,519	0.806%	67,392	1.053%	9,984	105
Mourning Dove	92,777,161	694,429	0.748%	125,237	0.883%	86,900	768
Blacktail and Mule Deer	69,946,156	464,183	0.664%	84,516	0.784%	142,421	1,117
Pheasant	20,777,064	216,264	1.041%	27,007	1.171%	27,689	324
Sooty and Ruffed Grouse	25,499,874	54,361	0.213%	1,304	0.218%	5,378	12
Sage Grouse	3,422,120	50,327	1.471%	1,276	1.508%	85	1
Snipe	72,058,390	466,712	0.648%	93,815	0.778%	1,384	11
Turkey	23,691,870	164,681	0.695%	26,332	0.806%	52,235	421
Western Gray Squirrel	45,843,462	337,555	0.736%	50,494	0.846%	11,342	96
Wild Pig	19,777,167	114,609	0.580%	55,760	0.861%	37,806	326
Totals:						491,680	4,028

Sources: Report of the 2010/11 Game Take Hunter Survey; Department Biogeographic data.

Table 2

Retail cost comparison of lead-core and nonlead centerfire rifle ammunition for commonly used calibers					
	Bullet		Bullet	Retail Price	
Cartridge	Composition	Product Name	Mass (grains)	Per box of 20	
.223 Remington	Nonlead	Barnes VOR-TX	55	26.99	
		Nosler Custom Ballistic Tip	35	22.99	
	Lead-core	Federal Premium	55	27.99	
		Winchester Silvertip	55	27.99	
		Remington Hypersonic Power Lokt	62	25.99	
.243 Winchester	Nonlead	Federal Premium VITAL SHOK Trophy Copper	85	29.99	
		Hornady GMX	85	35.99	
	Lead-core	Federal Premium	95	29.99	
		Winchester Ballistic Silvertip	55	34.99	
		Remington Hypersonic	100	25.99	
.270 Winchester	Nonlead	Federal Premium VITAL SHOK Trophy Copper	130	37.99	
		Barnes VOR-TX	130	42.99	
		Hornady GMX	130	41.99	
	Lead-core	Federal Premium	130	31.99	
		Winchester Ballistic Silvertip	130	32.99	
	Remington Core Lokt	130	22.49		
7 mm Remington	Nonlead	Barnes VOR-TX	150	45.99	
		Hornady GMX	139	46.99	
		Federal Premium VITAL SHOK Trophy Copper	150	43.99	
	Lead-core	Federal Premium	140	32.99	
		Winchester Ballistic Silvertip	140 & 150	38.99	
	Remington Core Lokt	150 & 175	30.99		
.30-06	Nonlead	Federal Premium VITAL SHOK Trophy Copper	165 & 180	37.99	
		Barnes VOR-TX	150	42.99	
		Hornady GMX	165	41.99	
	Lead-core	Federal Premium	180	37.99	
		Federal Premium	150 & 165	31.99	
	Winchester Ballistic Silvertip	150, 168 & 180	33.99		
.300 Winchester	Nonlead	Federal Premium VITAL SHOK Trophy Copper	165 & 180	46.99	
		Barnes VOR-TX	165 & 180	48.99	
		Hornady GMX	165	46.99	
	Lead-core	Federal Premium	165	41.99	
		Winchester Ballistic Silvertip	150	41.99	
	Remington Core Lokt	150 & 180	30.99		
.308 Winchester	Nonlead	Federal Premium VITAL SHOK Trophy Copper	165	37.99	
		Barnes VOR-TX	150	41.99	
		Nosler E-Tip	150	34.99	
	Lead-core	Federal Premium	165	31.99	
	Winchester Ballistic Silvertip	150	32.99		
.375 H & H	Nonlead	Hornady GMX	250	72.99	
		Lead-core	Federal Premium	300	79.99
		Nosler Custom Trophy	260	69.99	
		Fusion Safari Rifle	300	67.99	
http://www.cabelas.com	Accessed 10/7/2014				
http://www.sportsmanswarehouse.com	Accessed 10/7/2014				
http://www.midwayusa.com	Accessed 10/7/2014				
http://www.brownells.com	Accessed 10/7/2014				

Phase	Time Period	Hunters affected ¹	Hunter Compliance Costs			Compliance Costs % of Total Annual Expenditure ²	Baseline Historical Hunt Days ³	Projected Total Change in Hunt Days by Phase ⁴	(\$2013) Baseline Average Expenditure per Hunt Day ⁵	Projected Change in Total Hunter Expenditure by Phase ⁶
			% Change in Ammunition Costs	% Change in Recalibration Costs	% Change in Firearm & Maintenance Costs					
1	July 1, 2015 - June 30, 2016	8,070	90%	75%	29%	7%	137,190	(6,860)	\$ 78	\$ (535,041)
2	July 1, 2016 - June 30, 2019	186,073	90%	75%	29%	7%	3,163,241	(158,162)	\$ 78	\$ (12,336,640)
3	July 1, 2019 - June 30, 2020 One Year Full Implementation	282,987	90%	75%	29%	7%	3,471,643	(173,582)	\$ 78	\$ (13,539,407)

Table 3 Projected Economic Impact of Lead Ammunition Ban by Phase (\$2013)

¹Hunters affected by phase were estimated using: CDFW Lands data, game density and habitat maps, CDFW Report of the 2010/ 2011 Game Take Hunter Survey, and license and tag sales data. 2019 hunter totals were adjusted by the ten year trend line.

Compliance costs were estimated using: USFWS National Survey of Fishing, Hunting, and Wildlife-Associated Recreation, 2011, rev 2014, Tables 17-22; ammunition manufacturers and retailers outreach and public outreach; and multiple market surveys of retail ammunition prices.

Baseline historical hunt days: CDFW License and tag sales; USFWS annual hunt days by type of game, Tables 6, 7 and USFWS CA Survey Report Tables 2 ,3, 13; CDFW Game Take Hunter Survey.

⁴ Change in total hunt days is derived by reducing the baseline historical hunt days by the projected five percent decrease in hunting activity.

Hunter expenditure information: annual and per day and by item: USFWS CA & National Survey FHWAR, 2011, rev 2014, CA Tables 17 - 21, & CA Report Tables 18, 20, 21.

⁶ Multipliers used throughout for hunting activity in California sources: Minnesota IMPLAN Group; and U.S. Forest Service and U.S. Dept. of Agriculture, State and National Effects of Fishing, Hunting and Wildlife-Related Recreation, 2007.

Phase	Time Period	Projected Change in Total Hunt Days by Phase ¹	Baseline CDFW License & Tag Sales Revenue ²	CDFW License & Tag Sales Revenue Impact ³	Pittman- Robertson Excise Tax Revenues Impact ⁴	CDFW Expenditure Impact ⁵	CDFW Total Revenue Impact ¹	Projected Sales & Motor Fuel Tax Revenue to State ⁶	State Income Tax
1	July 1, 2015 - June 30, 2016	(6,860)	\$ 840,724	\$ (42,036)	\$ (1,324)	\$ (45,000)	\$ (88,360)	\$ (36,383)	\$ (12,840.98)
2	July 1, 2016 - June 30, 2019	(158,162)	\$ 19,384,882	\$ (969,244)	\$ (30,533)	\$ -	\$ (999,777)	\$ (838,892)	\$ (296,079.36)
3	July 1, 2019 - June 30, 2020 One Year Full Implementation	(173,582)	\$ 21,274,822	\$ (1,063,741)	\$ (33,510)	\$ -	\$ (1,097,251)	\$ (920,680)	\$ (324,945.78)

Table 4. Projected Annual Fiscal Impact of Lead Ammunition Ban by Phase (\$2013)

1 Change in total hunt days is derived by reducing the baseline hunt days by the projected five percent decrease in hunting activity.

2 Baseline CDFW License and Tag Sales: License and Revenue Branch, 2014

3 Baseline Revenue with a projected five percent reduction in hunting activity.

4 Pittman-Robertson funding levels and allocation formula:

USFWS <https://www.animallaw.info/statute/us-funding-state-pittman-roberston-act-chapter-5b-wildlife-restoration>

5 California Department of Fish and Wildlife Legislative analysis of AB 711 2014.

6 Tax revenue multipliers used throughout for hunting activity in California. Source: Minnesota IMPLAN Group; and U.S. Forest Service and U.S. Dept. of Agriculture, State and National Effects of Fishing, Hunting and Wildlife-Related Recreation, 2007.

Table 5

California State-Wide Hunting Activity Multipliers						
Direct Expenditure	Total Multiplier Effect	Salaries & Wages	Jobs/\$Million	Sales and Motor Fuel Taxes	State Income Tax	Federal Income Tax
1.000	2.021	0.503	17.000	0.068	0.024	0.090

Source: Minnesota IMPLAN Group, used by U.S. Department of Forestry, U.S. Department of Agriculture, U.S. Fish and Wildlife Service, Association of Fish and Wildlife Agencies, and National Shooting Sports Foundation.

Appendix H

December 31, 2014 Letter from California Department of Finance



EDMUND G. BROWN JR. • GOVERNOR

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December 31, 2014

Margaret Duncan
Fish and Game Commission
Resources Agency
1416 9th St., 12th floor
Sacramento, CA 95814

Thank you for submitting the combined standardized regulatory impact assessment for the proposed Prohibition on the Use of Lead Ammunition regulations. While the impacts would not meet the major regulations threshold, we appreciate your efforts in providing information to help the public and stakeholders understand the tradeoffs that were made in the regulatory design.

Based on our understanding, the proposed regulations would implement a ban on lead ammunition used for hunting wildlife in California by 2018. While the statute is silent on how to achieve this ban, these proposed regulations balance the benefits and costs by phasing in the ban. Based on an assumed 5-percent reduction in hunting, the Fish and Game Commission estimated a decrease of \$27.4 million in output, driven by a \$13.5 million reduction in hunter expenditures. In addition, there would be a \$2.3 million reduction in state revenue, of which roughly half is from the reduction in fees from hunters, and the remainder is from reduced economic activity. Although the total impact estimated does not exceed Finance's major regulation threshold of \$50 million, there were alternative assumptions explored that would increase the impact.

Finance concurs with the general approach used, which covers the channels where the regulations will affect businesses and individuals, and the use of an input-output model to link direct and total impacts. However, because the direct impacts of the regulation are incorrectly identified, the estimates of the total impact on output are overstated.

The direct impact of the regulation is the additional cost of non-lead bullets. The IMPLAN input-output model would translate these direct impacts to total impacts (direct, indirect, and induced) via multipliers. However, the Fish and Game Commission used a price elasticity model to assess some of the indirect and induced impacts on other hunting-related expenditures and then applied the multipliers to these results to calculate total impacts. Applying multipliers also to partial indirect and induced impacts overstates the total impacts. In addition, it is incorrect to add the impacts on output and revenue together to derive the total impact of the regulation, because the output impact represents changes in production whereas the revenue impact describes changes in state funds.

Finally, the report mentions current shortages of non-lead ammunition in California. The availability of non-lead bullets and their price are key assumptions in modeling the impacts. If these underlying factors change, the impact assessments would clearly change as well, and perhaps should prompt a re-examination of the phasing. The report could add a section on why the current shortage is not expected to have an impact, or how the Fish and Game Commission plans to address these risks.

These comments are intended to provide sufficient guidance outlining revisions needed in this analysis and for future analysis. If any significant changes to the proposal result in revisions to

the economic impacts in the report, the Fish and Game Commission is reminded that the revised economic impacts must be reflected on the Standard Form 399 for the rulemaking file submittal to the Office of Administrative Law. A copy of our comments will be posted on Finance's website as well. Please let us know if you have any questions regarding our comments.

Sincerely,



Irena Asmundson
Chief Economist

cc: Ms. Panorea Avdis, Governor's Office of Business and Economic Development
Ms. Debra Cornez, Office of Administrative Law
Mr. Charlton Bonham, Department of Fish and Wildlife
Mr. Gabe Tiffany, Department of Fish and Wildlife