ENVIRONMENTAL INITIAL STUDY

Cooperative Service Agreement and Annual Work/Financial Plan Between Shasta County and U.S. Department of Agriculture Animal and Plant Health Inspection Service - Wildlife Services

April 2019

ENVIRONMENTAL INITIAL STUDY
References and Documentation

Prepared by
SHASTA COUNTY DEPARTMENT OF RESOURCE MANAGEMENT
PLANNING DIVISION
1855 Placer Street, Suite 103
Redding, California 96001

SHASTA COUNTY
ENVIRONMENTAL CHECKLIST FORM
INITIAL STUDY

1. Project Title:
Cooperative Service Agreement and Annual Work/Financial Plan Between Shasta County and USDA APHIS Wildlife Services

2. Lead agency name and address:
Shasta County Department of Resource Management, Planning Division
1855 Placer Street, Suite 103
Redding, CA 96001-1759

3. Contact Person and Phone Number:
Paul Hellman, Director of Resource Management, (530) 225-5789

4. Project Location:
Unincorporated Shasta County (Countywide)

5. Applicant Name and Address:
Paul Kjos, Shasta County Agricultural Commissioner
3179 Bechelli Lane, Suite 210
Redding, CA 96002

6. General Plan Designation:
Multiple

7. Zoning:
Multiple

8. Description of Project:
The proposed project is the establishment and implementation of a five-year Cooperative Service Agreement (CSA), including annual work plans (work and financial plans) required by the five-year CSA, between Shasta County and U.S. Department of Agriculture (USDA) Animal and Plant Health Inspection Service – Wildlife Services (APHIS-WS) for wildlife damage management assistance in the County. Project activities would be implemented in the unincorporated area of the County. The overall goal of the proposed project is to ensure that wildlife damage management in Shasta County for purposes of protecting agricultural resources (including livestock and bees), public health and safety, and property is performed in a biologically sound, environmentally safe, and accountable manner and in accordance with applicable federal and state laws and regulations. A detailed description of the proposed project is provided on page 3.

9. Surrounding Land Uses and Setting:
Shasta County is in Northern California and is bounded by Siskiyou County on the north, Trinity County on the west, Tehama County on the south, and Lassen County on the east (Figure 1, Project Location). The County is situated where the Central Valley of California meets the convergence of the Klamath and Coast ranges to the northwest and west, with the Cascade Range to the northeast and east. It encompasses approximately 3,852 square miles. Nearly 60 percent of land in the County is privately owned. Federal lands comprise approximately 40 percent and include lands managed by the Bureau of Land Management (BLM), National Park Service, U.S. Forest Service, Bureau of Reclamation, U.S. Fish and Wildlife Service, and other federal lands (Figure 2, Land Ownership/Jurisdiction). Coniferous forest is the predominant vegetation in the mountainous regions of the County, but in many areas this cover has been modified by human activities. Extensive modification has also occurred in the Sacramento and Fall River valleys, which are characterized by cultivated and pasture lands, oak woodlands, and

grasslands. These habitats are home to numerous common wildlife species as well as species that are protected under federal and state laws and regulations. Human activities have modified their habitat areas and thus their geographic distribution throughout the County.

10. Other public agencies whose approval is required (e.g., permits, financing approval, or participation agreement.):

No other local, state, or federal agency approvals or permits are required.

11. Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code section 21080.3.1? If so, has consultation begun?

Tribal consultation letters regarding this project were mailed to the Pit River Tribe and the Wintu Tribe of Northern California & Toyon-Wintu Center on March 4, 2019.

NOTE: Conducting consultation early in the CEQA process allows tribal governments, lead agencies, and project proponents to discuss the level of environmental review, identify and address potential adverse impacts to tribal cultural resources, and reduce the potential for delay and conflict in the environmental review process. (See Public Resources Code section 21083.3.2.) Information may also be available from the California Native American Heritage Commission's Sacred Lands File per Public Resources Code section 5097.96 and the California Historical Resources Information System administered by the California Office of Historic Preservation. Please also note that Public Resources Code section 21082.3(c) contains provisions specific to confidentiality.

PROJECT DESCRIPTION:

INTRODUCTION

The proposed project is the establishment and implementation of a five-year Cooperative Service Agreement (CSA), including annual work plans (work and financial plans) required by the five-year CSA, between Shasta County and U.S. Department of Agriculture (USDA) Animal and Plant Health Inspection Service – Wildlife Services (APHIS-WS) for wildlife damage management assistance in the County. Project activities would be implemented in the unincorporated area of the County. The overall goal of the proposed project is to ensure that wildlife damage management in Shasta County for purposes of protecting agricultural resources (including livestock and bees), public health and safety, and property is performed in a biologically sound, environmentally safe, and accountable manner and in accordance with applicable federal and state laws and regulations.

This section describes the location of the proposed project and its environmental setting, a brief summary of the project background (with additional details provided in Attachment A), and a description of the proposed project.

PROJECT LOCATION

Shasta County is in Northern California and is bounded by Siskiyou County on the north, Trinity County on the west, Tehama County on the south, and Lassen County on the east (Figure 1, Project Location). The County is situated where the Central Valley of California meets the convergence of the Klamath and Coast Ranges to the northwest and west, with the Cascade Range to the northeast and east. It encompasses approximately 3,852 square miles.

Figure 2 shows the geographic extent of each type of land ownership and/or jurisdiction in the County. A summary of this information is provided in Table 1. Nearly 60 percent of land in the County is privately owned. Federal lands comprise approximately 40 percent and include lands managed by the Bureau of Land Management (BLM), National Park Service, U.S. Forest Service, Bureau of Reclamation, U.S. Fish and Wildlife Service, and other federal lands.

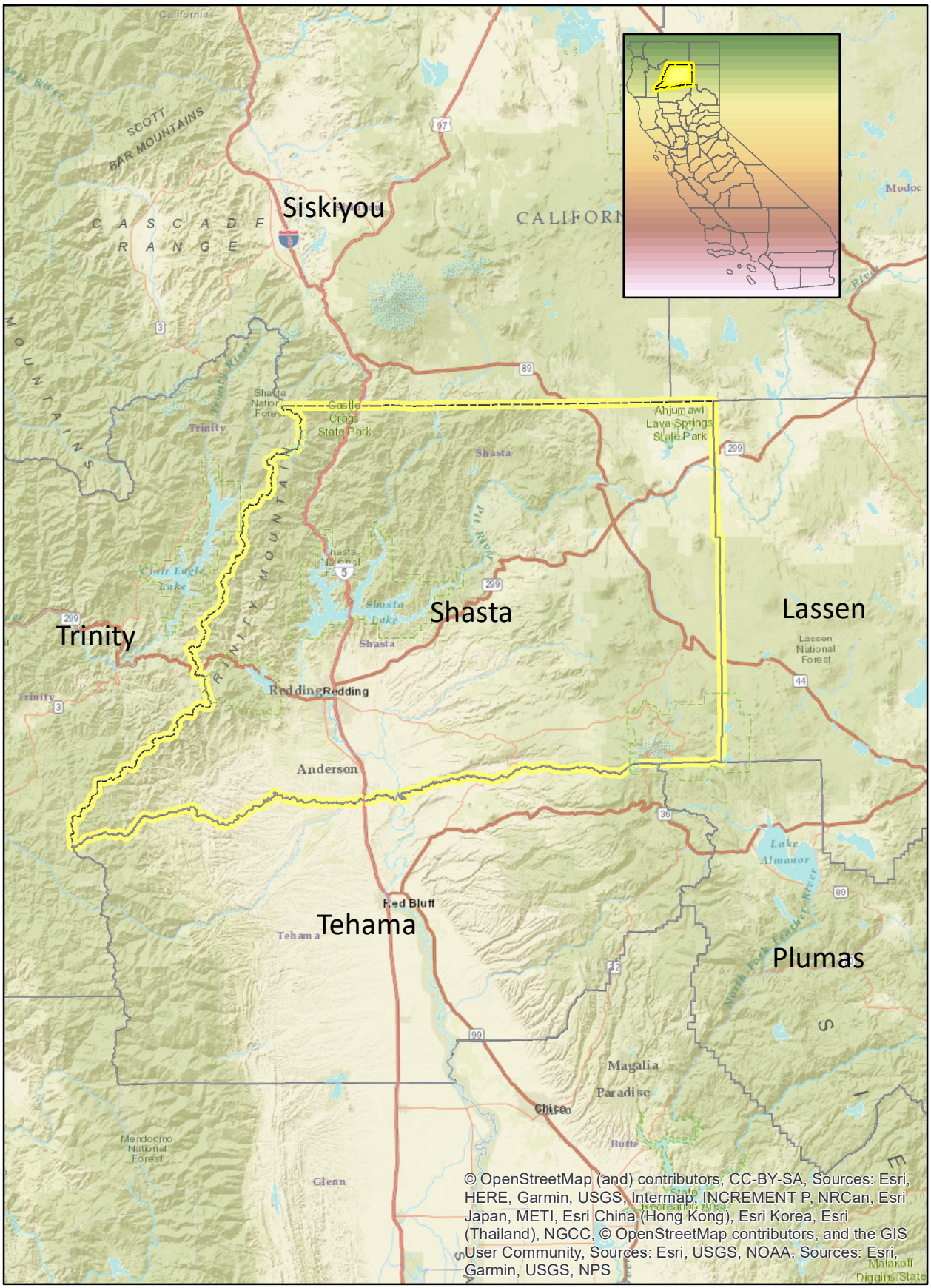
TABLE 1
SHASTA COUNTY LAND OWNERSHIP AND JURISDICTION

Ownership/Jurisdiction	Square Miles	Percent
Federal	1,538	39.9
State	43.7	1.1
Tribal Lands (Bureau of Indian Affairs)	4.1	0.1
Private	2,261	58.7
Local Government	1.5	0.4
Non-Project Conservation and Trusts	3.55	0.09
TOTAL	**3,852**	

Source: see Figure 1.

ENVIRONMENTAL SETTING

Coniferous forest is the predominant vegetation in the mountainous regions of the County, but in many areas this cover has been modified by human activities. Extensive modification has also occurred in the Sacramento and Fall River valleys, which are characterized by cultivated and pasture lands, oak woodlands, and grasslands. These habitats are home to numerous common wildlife species as well as species that are protected under federal and state laws and regulations. Human activities have modified their habitat areas and thus their geographic distribution throughout the County. Additional information about species is presented in Checklist Item IV, Biological Resources.



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0 10 20 40 Miles

Figure 1
Project Location

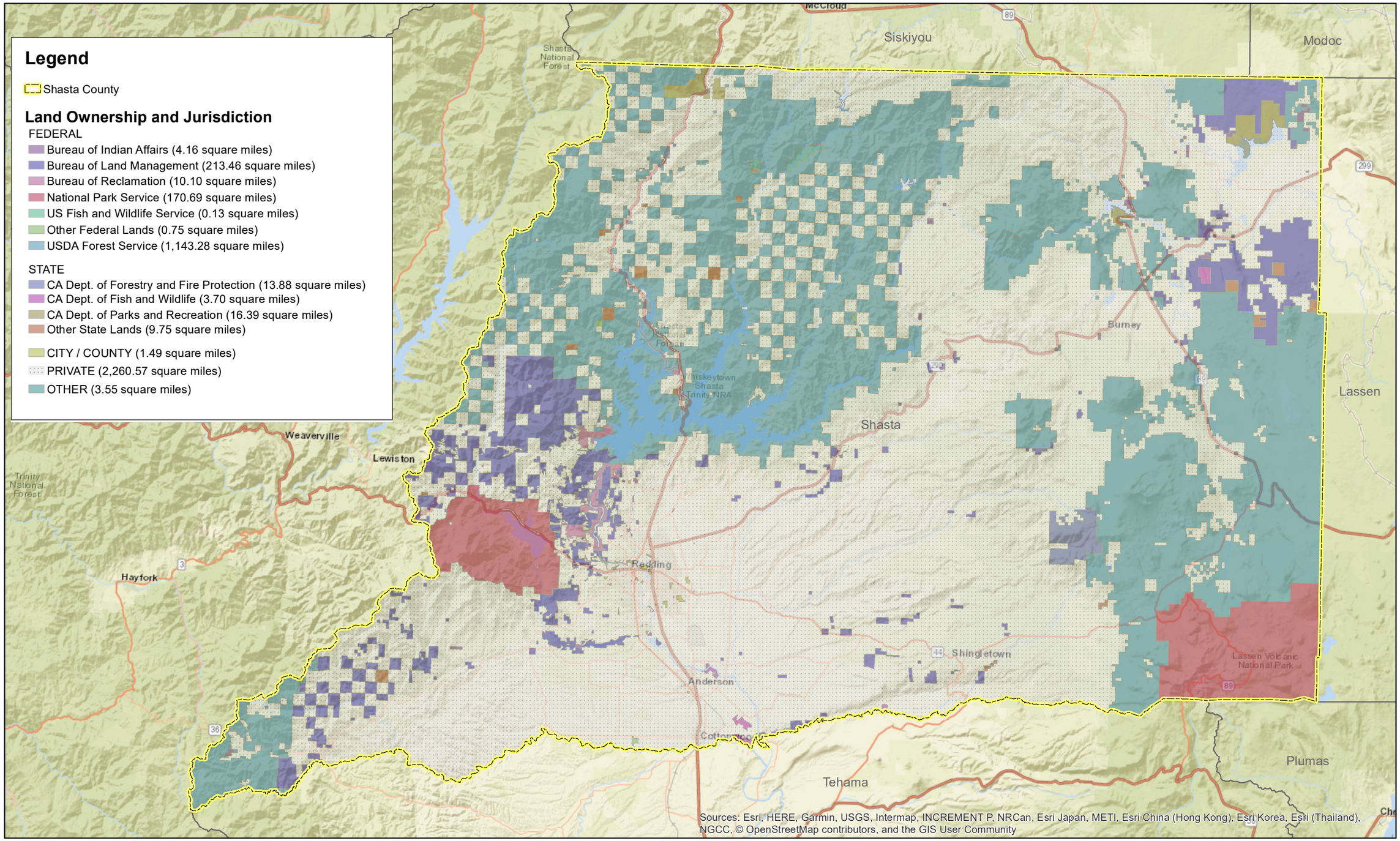

Figure 2
Land Ownership/ Jurisdiction

PROJECT BACKGROUND

APHIS-WS Program Overview

APHIS-WS implements the USDA's Integrated Wildlife Damage Management (IWDM) program throughout the United States. In California, 34 counties have an agreement with APHIS-WS for IWDM services. The IWDM program is intended to protect residents, property, livestock, crops, and natural resources from damage caused by predators and other nuisance wildlife. APHIS-WS implements the IWDM program to selectively remove individual animals that are nonnative or cause damage to property, infrastructure, agricultural or livestock commodities, and to protect public health and safety. The selective removal of individual animals by lethal methods is used as a last resort. The IWDM program does not seek to eradicate any species, regardless of legal status, or result in take that would substantially reduce species' populations. APHIS-WS does not target certain species for reduction. For most wildlife damage management, once a damage situation is resolved, APHIS-WS field specialists do not continue to remove additional animals unless a problem reoccurs, there are historical problems, and/or a request for assistance is made.

Attachment A describes what wildlife damage is and the approach to managing it, the regulatory framework that allows APHIS-WS to provide wildlife damage management services in the County, and control methods. An evaluation of the federal program itself is not required under CEQA; however, the potential environmental impacts of continuing IWDM activities in the County under the CSA are evaluated as they relate to potential effects on wildlife populations. This analysis is presented in Checklist Item IV, Biological Resources, in this Initial Study.

In Shasta County, black bear, coyote, raccoon, muskrat, striped skunk, Virginia opossum, bobcat, feral dogs, gray fox, mountain lion, feral swine, blackbirds, cowbirds, sparrows, and starlings are the species for which APHIS-WS services have been routinely provided. These are common wildlife, and none are afforded protection under federal or state endangered species act laws and regulations. See Checklist Item IV, Biological Resources, for additional information about each of these species.

Agreement Between Shasta County and APHIS-WS

In 1998, the County Board of Supervisors approved its first CSA between APHIS-WS and the County. The Shasta County Agricultural Commissioner's Office and APHIS-WS have maintained a CSA since 1998. The last CSA was approved in 2009 with work and financial plans established annually thereafter through the latest one in 2016. Previous annual work and financial plans provided for a maximum of approximately 3,600 hours of specialist time on an annual basis, with little variation between years. The wildlife damage management services provided under the previous CSA with APHIS-WS have historically been performed almost entirely on private land and on BLM land where private ranchers lease land from the BLM. Between 2007 and 2017, APHIS-WS provided technical assistance to resource owners on private land totaling 360,827 acres (an annual median of approximately 22,800 acres). Work was also performed on 285,000 acres on BLM land where there are private grazing leases (an annual median of approximately 16,500 acres) (USDA 2019).[1]

In February 2017, the Board of Supervisors approved a five-year CSA to remain in effect until June 30, 2021, or until either of the parties requests to terminate the agreement, followed by approval of an annual work and financial plan for fiscal year 2017-18 in July 2017.

The County voluntarily terminated the CSA with APHIS-WS in July 2018. There is currently no authorization in place for APHIS-WS services in the County, pending completion of environmental review pursuant to the California Environmental Quality Act, and approval by the Board of Supervisors of another CSA.

1 APHIS-WS does not implement its services on the total number of reported acres. When a WIDs signed by the requesting party, the agreement applies to the entire acreage of the parcel(s) for which services are requested. In some cases, this could be hundreds or thousands of acres. The total reflects the sum of all parcel acreages for which the WID has been signed. Thus, the extent of "on-the-ground" services is limited in geographic scope to only those specific locations on a property where the wildlife damage is occurring and where control services are actually provided.

PROJECT IMPLEMENTATION AND OPERATION

The proposed project is the re-establishment of Shasta County's CSA with APHIS-WS. Similar to previous CSAs with APHIS-WS, it would be a cost-share agreement for a period of five years under which the County would fund a portion of APHIS-WS's estimated total cost of services, typically around 80 percent of the total cost. The CSA would require the approval of the Shasta County Board of Supervisors. Activities performed under the IWDM program would be implemented by APHIS-WS field specialists in accordance with the regulations, standards, and guidelines of the IWDM program, including its WS Policy Manual, Directives, and standard operating procedures. The County would not be materially involved in any of the wildlife damage management activities other than to cost-share the financial portion of the program.

If approved, the CSA would fund and continue the existing APHIS-WS IWDM program in the County as soon as July 1, 2019. Because APHIS-WS and the County operate on a fiscal-year basis, a new work plan (scope of services) and financial plan (budget) would be established between the County and APHIS-WS for each fiscal year of the CSA term. Yearly adjustments to the work plan would primarily focus on personnel and equipment costs. Technical assistance data maintained by APHIS-WS through its management information system would also be used to help develop the work plan and budget for subsequent years throughout the term of the CSA.

Neither APHIS-WS nor Shasta County are proposing any changes to the APHIS-WS IWDM program in Shasta County as it has historically operated in conjunction with the County's approval of the CSA with APHIS-WS. Upon County approval of the CSA, which would fund APHIS-WS services through a cost-share agreement, the IWDM program (as operated by APHIS-WS and approved by signature of the CSA and work plan) would include the following:

- Assignment of APHIS-WS wildlife specialist(s) trained in wildlife control methods, knowledgeable of state and federal regulations, and certified in the safe handling and use of firearms and other control equipment.

- Up to approximately 3,600 work hours distributed as needed among direct control activities, technical assistance, APHIS-WS required training and administrative tasks, and leave.

- APHIS-WS procurement and maintenance of vehicles, tools, supplies, and other specialized equipment as deemed necessary to accomplish direct control activities.

- APHIS-WS supervision of safe and professional use of approved wildlife damage management tools/equipment, including the use of firearms, deterrent methods/devices (including pyrotechnics), traps, snares, trained dogs, all-terrain vehicles, Environmental Protection Agency and Drug Enforcement Administration approved chemicals (including immobilizing and euthanasia drugs), night vision equipment, and electronic calling devices.

- Data reporting for inclusion in the APHIS-WS MIS, which would consist of the number and types of requests for assistance, control methods, types of species, whether species causing damage or loss were removed or released, estimated value of loss, and other information used to document and monitor program activities.

APHIS-WS Technical Assistance

Technical assistance would be provided only at the request of affected resource owners or managers. The majority of services would likely be provided for the protection of field crops and livestock because that has historically resulted in the most requests for technical assistance, as described in Attachment A, Project Background. However, technical assistance would also be available for protection of public health and safety (human-animal conflicts) and property. APHIS-WS would not perform any activities funded by the County for the protection of natural resources such as threatened and endangered species.

Under the CSA, APHIS-WS would continue to provide the following services in Shasta County:

- Offer technical advice/assistance to resource owners on prevention and/or control techniques.
- Inform and educate the public on how to prevent and reduce wildlife damage on their own, using APHIS-WS staff-prepared pamphlets and documentation.
- Provide expertise from wildlife specialists trained in wildlife control methods, knowledgeable of state and federal regulations, and certified in the safe handling and use of firearms and other control equipment.
- Investigate wildlife damage situations to determine the responsible species and evaluate the site for applicability of prevention and control methods.
- Develop and implement wildlife damage management actions for the protection of agricultural resources, public health and safety, and property.
- Develop and implement wildlife damage management methods and actions targeting invasive species (e.g., wild pigs) that may damage or threaten property, livestock, crops, and/or public safety.
- Respond to incidents where wildlife species are threatening public health and safety (in coordination with the California Department of Fish and Wildlife (CDFW) and local law enforcement), including the use of out-of-county resources and expertise.
- Collect samples for wildlife diseases that may affect agriculture and public safety.
- Provide access to APHIS-WS support staff, including at the National Wildlife Research Center, which conducts research on and develops wildlife damage management methods.

Wildlife Damage Management Activities

Before wildlife damage management is conducted, a Work Initiation Document (WID) must be signed by APHIS-WS and the landowner or manager. The County would not be involved in this action because it would be an agreement between APHIS-WS and the landowner or manager. When services are requested by a resource owner, APHIS-WS personnel would conduct an initial investigation that defines the nature, history, and extent of the problem, species responsible for the damage, and methods that would be available to resolve the problem. In selecting damage management techniques for specific wildlife damage situations, the APHIS-WS field specialist would consider the species responsible and the frequency, extent, and magnitude of the damage. In addition, consideration would be given to the status of target and potential nontarget species, local environmental conditions, relative costs of applying management techniques, environmental impacts, and social and legal concerns. Attachment A, Project Background, describes this process and the regulatory framework under which these decisions may be made by APHIS-WS personnel.

Although the County would provide funding for the services, County staff would not be involved in the decision-making regarding which methods should or should not be used. The County is not authorized to do so because the federal government has delegated that authority to APHIS-WS, as explained in Attachment A, Project Background.

Use of Direct Control Methods by APHIS-WS

Certain activities performed by APHIS-WS for wildlife damage control are expected to involve lethal methods. These methods, which are described in Attachment A, would only be used as a last resort when other methods of control have not been successful. The most common methods are the use of devices such as cages, traps, or snares to capture animals, and shooting. With few exceptions, target animals that are captured but not killed by shooting are immobilized and/or euthanized. In rare cases, a captured animal may be relocated. Attachment A also indicates which methods APHIS-WS may not use in Shasta County because they are no longer allowed as well as methods that have not been used in the County for over 10 years and would therefore be unlikely to be used by APHIS-WS. Because the County would not be materially

involved in any of the wildlife damage management activities that could involve the use of lethal methods, it would not direct which lethal methods may or may not be used.

If the CSA is approved, it would authorize APHIS-WS to use various direct lethal control methods. Before wildlife damage management is conducted in response to a request for assistance from a property or resource owner, a WID must be signed by APHIS-WS and the landowner or representative. The direct control methods do not require analysis, but the removal of a target species by lethal means by APHIS-WS has the potential to affect species populations, which is a physical environmental effect that requires analysis under CEQA. That evaluation is presented in Checklist Item IV, Biological Resources, in this Initial Study.

Depredation Permits

Some species managed by APHIS-WS under the IWDM program require depredation permits issued by CDFW. In the County, these species include black bear, mountain lion, feral pig, bobcat, and beaver. As established in California Fish and Game Code (FGC) Section 4802 et seq., CDFW is required, upon request, to issue depredation permits to individuals reporting livestock loss or damage caused by mountain lions, if the loss or damage is confirmed by CDFW staff to have been caused by mountain lion. The permit is issued to the party experiencing loss or damage rather than to APHIS-WS. Upon request from the permittee, APHIS-WS may act on the permittee's behalf to remove the animal. Depredation permits are also required for bobcat, but unlike mountain lion, CDFW has discretion in the issuance of a depredation permit for bobcat. The depredation permit is issued to the owner of the resource being damaged, which may either be a private party (e.g., a rancher) or a public entity. The permit is not issued to APHIS-WS, but APHIS-WS may act on the permittee's behalf to remove the animal. FGC Section 4181.1 provides that feral swine take may be implemented immediately by the permit holder when the animal is damaging or destroying, or threatening to immediately damage or destroy, land or property, or the landowner, agent, or employee "encounters" damage or threat. FGC Section 4181.1 also states that landowners may kill a bear encountered in the act of molesting or injuring livestock. In the case of a problem bear, the law provides for the issuance of a depredation permit to landowners or tenants who experience property damage from bears. The permit allows the permittee or designee to kill the offending bear regardless of the time of year.

Requirements such as method of carcass disposal, use of traps, and specified or prohibited kinds of traps or ammunition are identified in the permit, as well as the time period the permit is valid for. CDFW's implementing regulations (Title 14 of the California Code of Regulations [CCR]) identify the issuance of a depredation permit as a ministerial action (14 CCR 757(b)(4).)

Public Safety Considerations

All of the direct control methods that could be used by APHIS-WS under the CSA with the County would be implemented primarily on private land and a limited amount of work on state-owned land and at County-operated airports, consistent with historic practices. APHIS-WS's work on federal lands would remain limited to areas with private grazing leases and/or where public access is not allowed. APHIS-WS would not perform work funded under the CSA in the Shasta-Trinity and Lassen National Forests, where there may be publicly accessible trails and wildlife viewing areas. A minimal amount, if any, would be performed on state and/or county public lands.

If traps are used, APHIS-WS Directive 2.450 (Traps and Trapping Devices) requires that appropriate warning signs be posted on commonly used public access points to areas where traps or snares are in use. Signs must be routinely checked by APHIS-WS field specialists to ensure they are present, obvious, and readable. Appropriate notification signs must be posted within the direct line of sight of mountain lion foot-snare device sets. Capture devices must be set where they would minimize the public's view of captured animals. In California, pursuant to FGC Section 4180, traps must be checked at least once daily, and each time traps are checked, all trapped animals must be removed. Therefore, it would be highly unlikely for the public to encounter a trapped, dead, or injured animal. WS Directive 2.515 (Disposal of Wildlife Carcasses) requires that carcasses are transported in manner in which they are placed totally out-of-sight of the general public and disposed of in manner consistent with federal, state, County, and local regulations.

Hazardous materials such as chemicals and pesticides, which are described in Attachment A, may be used by APHIS-WS field staff. APHIS-WS Directive Section 2.4 (Specialized Methods and Techniques) establishes procedures and protocols

that must be followed regarding the use and disposal of chemicals and pesticides to ensure compliance with applicable federal and state laws and regulations so that such use does not pose an environmental or human health risk. APHIS-WS Directive Section 2.435 (Explosives Use and Safety) provides protocols for the use of explosives for removing beaver dams causing damage to property or other resources. If pyrotechnics or incidental explosives are used for non-lethal controls, such use would be subject to the requirements set forth in WS Directive 2.625 and WS Directive 2.627. Aircraft operations, if any, must conform to standards set forth in WS Directive 2.620 (Aviation Safety and Operations).

Use of Nonlethal Control Methods by APHIS-WS

The previous CSA and annual work and financial plans included expenses for pyrotechnics (a nonlethal control method), so it is possible APHIS-WS could implement this nonlethal deterrent type of control on private land under its WID with a resource owner. The agreement would not provide for types of nonlethal controls that individual resource owners may choose to implement, which are summarized below.

Technical Assistance Not Involving Direct Control of Wildlife Damage Management

The CSA between Shasta County and APHIS-WS is for a range of services, which would be provided to resource owners upon their request. Many of the activities that would be performed by APHIS-WS personnel under the CSA would be administrative, for example, responding to telephone inquiries, preparing informational literature and giving presentations, and performing initial investigations at the request of resource owners. Personnel would also offer recommendations to resource owners on wildlife damage management that would not involve removal of animals causing damage (that is, nonlethal methods for damage management). These administrative-type activities would not result in physical changes in the environment that require analysis in this Initial Study.

Use of Nonlethal Control Methods by Private Parties

As part of technical assistance to resource owners, APHIS-WS staff may recommend nonlethal methods for wildlife damage management. These methods are described in Attachment A. Some of these methods could be safely implemented by the resource owner and would be the responsibility of the resource owner. This could include altering animal husbandry practices, fencing, night pens, or use of guard animals, among others. Neither APHIS-WS nor County staff would be involved in implementing these actions, nor would the CSA allow for County funds to be provided directly to resource owners to acquire materials or resources to implement nonlethal methods on private property. As such, the use of nonlethal methods by private parties would be at the sole discretion of the resource owner. The use of nonlethal methods by private parties, and potential environmental effects, would occur with or without the proposed project, and there are no aspects of the proposed project that would change what nonlethal controls a resource owner might use, either by limiting them or adding new ones.

PERMITS AND APPROVALS

The following actions and approvals by Shasta County would be required to implement the proposed project, if approved:

- Shasta County Board of Supervisors' adoption of a negative declaration or mitigated negative declaration, or certification of an environmental impact report, yet to be determined.

- Shasta County Board of Supervisors' approval of the CSA between Shasta County and USDA APHIS-WS and approval of work and financial plans on an annual basis.

No state agency approvals are required.

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.

	Aesthetics		Agricultural Resources		Air Quality
	Biological Resources		Cultural Resources		Geology / Soils
	Greenhouse Gas Emissions		Hazards & Hazardous Materials		Hydrology / Water Quality
	Land Use / Planning		Mineral Resources		Noise
	Population / Housing		Public Services		Recreation
	Transportation / Traffic		Tribal Cultural Resources		Utilities / Service Systems
	Mandatory Findings of Significance				

DETERMINATION: (To be completed by the Lead Agency)

On the basis of the 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 of NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Copies of the Initial Study and related materials and documentation may be obtained at the Planning Division of the Department of Resource Management, 1855 Placer Street, Suite 103, Redding, CA 96001. Contact Paul Hellman at (530) 225-5789.

_____ _____

Paul A. Hellman
Director of Resource Management

Date

EVALUATION OF ENVIRONMENTAL IMPACTS:

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 parenthesis following each question. A "No Impact" answer is adequately supported if all 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).

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.

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.

Negative Declaration: Less-than-significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from a "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 Section XVIII, "Earlier Analyses," may be cross-referenced).

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 the following:

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-significant.

I. AESTHETICS: Would the project:	Potentially Significant Impact	Less-Than-Significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?			✓	
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway?			✓	
c) Substantially degrade the existing visual character or quality of the site and its surroundings?			✓	
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?				✓

Discussion: Based on the related documents listed in the Sources of Documentation for Initial Study Checklist, staff review of the project, and knowledge of conditions in the County, the following findings can be made:

a–c) All of the direct control methods that could be used by APHIS-WS under its CSA with the County would be implemented primarily on private land, with a limited amount of work on federal BLM lands and County facilities, consistent with historical practices. The work funded under the CSA would not be performed in national parks and forests in the County, where there may be publicly accessible trails and wildlife viewing areas. If traps are used, WS Directive 2.450 requires that appropriate warning signs be posted on commonly used public access points to areas where traps or snares are in use.[1] Signs must be routinely checked by APHIS-WS field specialists to ensure they are present, obvious, and readable. Appropriate notification signs must be posted within the direct line of sight of mountain lion foot-snare device sets. Capture devices must be set where the public's view of captured animals would be minimized. In California, pursuant to Fish and Game Code Section 465.5, traps must be checked at least once daily, and each time traps are checked, all trapped animals must be removed. WS Directive 2.515 (Disposal of Wildlife Carcasses) requires that carcasses be transported in a manner in which they are placed totally out-of-sight of the general public and disposed of in manner consistent with federal, state, County, and local regulations.[2]

As such, it would be highly unlikely for the general public and recreationists to encounter a trapped, dead, or injured animal that could be an unpleasant sight because APHIS-WS would perform little, if any work, on publicly accessible lands in Shasta County because no changes to the previous CSA are proposed that would result in increased activities on public land. Any visual changes resulting from the project would be associated with the temporary capture, take, or relocation methods (installation of traps and snares); no buildings, structures, or other improvements or facilities would be constructed. Traps and snares would be located on the ground level and would involve minimal to no ground disturbance or vegetation removal. Therefore, the project would not include elements that would substantially contrast with the surrounding visual character of any area. Any capture, take, or relocation methods would be removed after use and as such would not permanently change and/or degrade the characteristic of the landscape. Rather, they would represent a temporary and minor interruption of the existing visual condition. Therefore, the project would not have a substantial adverse effect on a scenic vista, substantially damage scenic resources within a state scenic highway, and/or substantially degrade the existing visual character or quality of any area. Impacts would be less-than-significant.

d) The project would not include any interior lighting that creates nighttime glare, exterior lighting sources, and/or building surfaces that reflect sunlight. The project would not create a new source of substantial light or glare that would adversely affect nighttime views in the area. No impact would occur.

Mitigation/Monitoring: No mitigation is required.

II. AGRICULTURE AND FORESTRY 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:	Potentially Significant Impact	Less-Than-Significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland, or 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?				✓
b) Conflict with existing zoning for agricultural use, or a Williamson Act Contract?				✓
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 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?				✓
e) 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?				✓

Discussion: Based on the related documents listed in the Sources of Documentation for Initial Study Checklist, staff review of the project, and knowledge of conditions in the County, the following findings can be made:

a-e) Project activities would not include any changes to zoning, land use, or other components that would result in the conversion of farmland or forest land to other uses. No impact would occur.

Mitigation/Monitoring: No mitigation is required.

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:	Potentially Significant Impact	Less-Than-Significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?				✓
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?			✓	
c) Result in a cumulatively considerable net increase of any criteria pollutant			✓	

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:	Potentially Significant Impact	Less-Than-Significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
for which the project region is non-attainment under an applicable Federal or State ambient air quality standard (including releasing emission which exceed quantitative thresholds for ozone precursors)?				
d) Expose sensitive receptors to substantial pollutant concentrations?			✓	
e) Create objectionable odors affecting a substantial number of people?			✓	

Discussion: Based on related documents listed in the Sources of Documentation for Initial Study Checklist, staff review of the project, and knowledge of conditions in the County, the following findings can be made:

a) The project would not result in increases in population, housing, or other development. Therefore, the project would not exceed projections accommodated in the Shasta County Air Quality Management Plan (Shasta County 2004).[1] Therefore, the project would not conflict with or obstruct implementation of the 2015 Air Quality Attainment Plan for Northern Sacramento Valley Air Basin as adopted by Shasta County, or any other applicable air quality plan.

b-e) Shasta County is in nonattainment for state ambient air quality standards relating to ozone.[2,3] Exhaust emissions, which would consist of ozone precursors, particulate matter (PM), diesel PM, carbon monoxide, and other chemicals, would be generated by the use of vehicles and ATVs by APHIS-WS personnel. Operation of vehicles and ATVs off-road would also generate fugitive dust emissions. These emissions from ATVs would be minor, localized, and would dissipate quickly. Further, the number of vehicles and ATVs used under previous CSAs would remain the same because no changes to how the APHIS-WS program operates in the County that would substantially increase vehicle and ATV use is expected under the new CSA. The project would not involve any construction activities that would result in air quality impacts. Therefore, the project would not result in a substantial net increase in emissions that would result in long-term or cumulative air quality impacts. Since the project would not result in a substantial net increase in emissions/criteria pollutant, the project would not violate a state ambient air quality standard, nor would the project result in a cumulatively considerable net increase of any criteria pollutant for which the region is in non-attainment, such as ozone. Further, the project would not expose sensitive receptors to pollution concentration given the rural nature of the areas where APHIS-WS specialists are expected to conduct their work.

Animal carcasses, which if not disposed of properly, can decompose and create odors. However, WS Directive 2.515 sets forth requirements for the disposal of wildlife carcasses, requiring that APHIS-WS personnel make a reasonable effort to retrieve and dispose of wildlife carcasses that result from APHIS-WS wildlife damage management activities. The directive further requires that all carcasses be disposed of in a manner consistent with federal, state, County, and local regulations. Furthermore, the majority of project-related services are provided for the protection of livestock and field crops on agricultural lands where other animal- and farming-related odors are already present and where, given the density of land uses, odors would not affect a substantial number of people. Therefore, compliance with mandatory WS Directive 2.515 would ensure that the project would not create objectional odors and that impacts would be less-than-significant.

Mitigation/Monitoring: No mitigation is required.

IV. BIOLOGICAL RESOURCES: Would the project:	Potentially Significant Impact	Less-Than-Significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a) Have a substantial 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 Wildlife or U.S. Fish and Wildlife Service?			✓	
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local of regional plans, policies, and regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?			✓	
c) Have a substantial adverse effect on Federally protected wetlands as defined by Section 404 of 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?			✓	
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?				✓
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?				✓
g) Substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below the self-sustaining levels, threaten to eliminate a plant or animal community, or reduce the number or restrict the range of a rare or endangered plant or animal?			✓	

Discussion: Based on the related documents listed in the Sources of Documentation for Initial Study Checklist and detailed data and analysis included in Attachment B, staff review of the project, and knowledge of conditions in the County, the following findings can be made:

a,b) Shasta County contains a variety of habitats that support several common and sensitive wildlife species. Table B-1, Shasta County Threatened and Endangered Species, included in Attachment B lists special-status species in Shasta County that are protected under the federal Endangered Species Act (ESA) and California ESA. California species of special concern are listed in Table B-2, Shasta County Species of Special Concern, included in Attachment B. Migratory birds are protected under the Migratory Bird Treaty Act (MBTA), and the majority of birds that are present in Shasta County are protected under the MBTA.

Attachment A, Project Background, describes the regulatory limitations and agency directives under which APHIS-WS must conduct its operations. APHIS-WS is not allowed to implement activities that would purposely or incidentally result in take of a protected species without authorization from the applicable resource agencies such as USFWS or CDFW. Special efforts are made to avoid jeopardizing threatened and endangered species, as well as those species that are proposed for federal listing. APHIS-WS consults with the USFWS and CDFW when any APHIS-WS program activity may affect animals or plants protected under either the federal or California ESA, so that restrictions or mitigation measures are applied when necessary. For the 11-year baseline

period that APHIS-WS has been performing activities under the previous CSAs in Shasta County, none has resulted in killing a protected species.[1] It is reasonable to assume the likelihood of take of a protected species would remain minimal.

APHIS-WS could use nonlethal deterrent methods such as pyrotechnics for bird control. However, such use would be determined on a case-by-case basis by the field specialist to ensure that nests and eggs of special-status avian species and birds protected under the MBTA would not be affected. Although the majority of the protected species are uncommon (thus the listing status) and not likely to occur in the urban and agricultural interface where many of the APHIS-WS activities occur, tricolored blackbird (California threatened) do forage in agricultural lands, and they can forage in mixed flocks dominated by red-winged and Brewer's blackbird, which have historically been a target species in Shasta County. In order to avoid any take of tricolored blackbirds, APHIS-WS does not use any potentially lethal actions in mixed flocks. There has been a substantial decline in blackbird removals in the County since listing of the tricolored blackbird in 2014, as shown in Table B-6 in Attachment B. Moreover, no mixed flocks that have the potential to contain tricolored blackbird have been removed or dispersed statewide since that time, as shown in Table B-3 and Table B-4 in Attachment B. As such, the potential for removal of tricolored blackbird under a new CSA is remote.

In the unlikely event a protected species is captured (e.g., in a trap, snare, or cage), APHIS-WS is required to make efforts to release it unharmed, unless the animal is injured and the field specialist has determined that it would not likely survive if released. Due to techniques used by the APHIS-WS field specialists to ensure that the correct location(s) for the target species is identified, it is reasonable to assume that if a protected species were caught, the likelihood of death would be low. Therefore, the proposed project would not result in 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 CDFW or USFWS. The impact would be less-than-significant.

APHIS-WS is not authorized to modify sensitive habitat(s) that support protected species, nor does it make that recommendation to landowners. Program activities do not involve land development, construction, or soil/vegetation removal. A negligible amount of ground disturbance would occur with the placement of capture devices. However, the capture devices would not be a permanent feature. Field specialists may access sites on foot or vehicle, which may involve off-trail or off-road use. It is possible that this would occur where sensitive habitat or special-status plant species occur. It would be speculative to ascertain which habitats or plant species could be affected. However, this would have minimal impact on habitat or special-status plants because it would be of limited spatial extent, infrequent, and temporary. Therefore, the proposed project would not result in substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations by the CDFW or USFWS. The impact would be less-than-significant.

c) APHIS-WS is not authorized nor does it perform activities such as land development, construction, or soil vegetation removal, nor recommend this to landowners. Therefore, under the CSA, there would be no modification of federally protected wetlands as defined by Section 404 of the Clean Water Act (e.g., marsh, vernal pool, coastal) through direct removal, filling, hydrological interruption, or other means, or impacts on waters of the state. There would be no impact.

d) The wildlife damage management services that would be provided to requestors under the CSA with APHIS-WS would not involve ground disturbance such as soil and vegetation removal, construction of buildings, or creation of artificial barriers (e.g., a roadway) to wildlife movement or migration patterns.

Capture methods would involve the use of traps, snares, or cages, as described in Direct Control Methods in Attachment A, and these devices would be used to target a specific animal in a specific location. They are used sparingly and are not placed or grouped in a manner that would be so wide as to physically impede wildlife movement. APHIS-WS does not target fish species or perform activities in habitat supporting fish species.

Important wildlife habitats in Shasta County include 10 deer winter ranges that support migratory deer herds.[2] The only targeted mammal species evaluated in this Initial Study that exhibits migratory behavior is the mountain lion, a species that generally has a fixed range and migrates seasonally in response to prey movements, following migrating herds of mule deer. APHIS-WS would only target a mountain lion for potential take if it is confirmed by APHIS-WS that it is the animal causing loss or damage. It would not target the entire migration corridor. A depredation permit is required from the CDFW to take mountain lion, so the number of mountain lions that may be removed is substantially limited and would remain similar to the low levels of take in the County (see Table B-3 in Attachment B). As such, there is no substantial evidence that IWDM activities performed under the CSA would substantially or adversely affect mountain lion migratory patterns. Implementation of the CSA would not reduce mountain lion species populations to levels that would not be self-sustaining or reduce biodiversity, nor eliminate or reduce migration corridors. Therefore, the proposed project would not interfere substantially with the movement of any native resident or migratory wildlife species or with established native resident or migratory wildlife corridors, nor impede the use of native wildlife nursery sites compared to baseline conditions. The impact would be less-than-significant.

e) Section 15125(d) of the CEQA Guidelines requires that an EIR discuss any inconsistencies between the proposed project and applicable general plans, specific plans, and regional plans as part of the environmental setting. The issue to be resolved is whether an inconsistency could, in turn, result in an environmental impact. The applicable plan is the Shasta County General Plan, which was updated in 2004 by the Board of Supervisors.

The Shasta County General Plan contains the following objectives and policy that are relevant to the proposed project:[2]

6.7.3 Objectives

FW-1 Protection of significant fish, wildlife and vegetation resources.

Policy FW-c Projects that contain or may impact endangered and/or threatened plant or animal species, as officially designated by the California Fish and Game Commission and/or the U. S. Fish and Wildlife Service, shall be designed or conditioned to avoid any net adverse project impacts on those species.

Wildlife and humans are constantly interacting and experiencing resource conflicts. Thus, the likelihood of some impact (damage occurring and animals being removed as a result of that damage) is high, with or without the services provided by the APHIS-WS IWDM program that would be funded by the County under the CSA. As explained in Item a, above, APHIS-WS is not allowed to implement activities that would intentionally result in take of a protected species. Therefore, the proposed project would not result in 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 CDFW or USFWS. There would be no conflict with Policy FW-c and therefore no impact.

A portion of the Shasta-Trinity National Forest for which a land and resource management plan was approved in 1995 comprises approximately 1,100 square miles (30 percent) in the County. County-funded APHIS-WS services under the CSA would not be performed in the national forest. There would be no conflict with the resource plan and therefore no impact.

f) There are no habitat conservation plans or natural communities conservation plans that apply to the proposed project. There would be no impact.

g) APHIS-WS has been providing assistance to the County under previous CSAs for several years. These activities have resulted in the removal of several common mammal and avian species by lethal methods. The following evaluates potential impacts on these species populations resulting from implementation of the CSA.

Mammals

Target mammal species in the County include American beaver, black bear, bobcat, common muskrat, coyote, gray fox, mountain lion, raccoon, striped skunk, and wild pig. These target species are common and widespread species managed by CDFW. Table B-3 in Attachment B lists the species managed by APHIS-WS in the County for the 2007-2017 time frame. This table also includes data for unintentional take of both target and nontarget species. As indicated by these data, there has been little unintentional take (removals) of target and nontarget species, and where target or nontarget species were managed, most were dispersed or freed. Table B-4 in Attachment B includes a list of species managed statewide by APHIS-WS IWDM activities corresponding to the target species managed in Shasta County.

Table B-5 in Attachment B lists the number of mammal species removed each year between 2007 and 2017 and a comparison to the number removed statewide for the same period. Table B-6 in Attachment B provides data for bird species. The historical data are used to provide a context for evaluating project impacts on species populations if a new CSA is implemented. The data in Table B-5 and Table B-6 comprise the baseline for purposes of evaluating the impacts of implementation of the CSA.

The potential impacts on species populations were developed using species models established by CDFW in 2004 along with other relevant data. These models were updated to include current statistics. Habitat availability was based upon California Wildlife Habitat Relationships (CWHR) model and CALVEG Mapping. Additional detailed data and information how population estimates were derived are provided in Attachment B.

Table 2, Shasta County Target Mammal Species Population and Take Summary, presents statistical data on target mammal species populations and removals conducted in Shasta County by APHIS-WS under previous CSAs. The data are derived from species-specific analyses included in Table B-7 through Table B-16 in Attachment B. Table 3, Statewide and Cumulative Target

Mammal Species Population and Take Summary, presents the data on target species removal conducted statewide by APHIS-WS (2007-2017), and also includes cumulative estimates as a means of comparison to statewide low population levels. Cumulative estimates include take by public hunting and trapping and other sources of mortality. Detailed information about the data and assumptions used for developing cumulative estimates is included in Attachment B in each species table.

TABLE 2

SHASTA COUNTY TARGET MAMMAL SPECIES POPULATION AND TAKE SUMMARY

Target Species	Estimated County Population (Low/High)	Total Take 2007-2017[1]	Median Annual Take Over 11-Year Period	Percent Median Take per Year of County Low Population Estimate	Percent Median Take per Year of State Low Population Estimate
American beaver	755 / 9,438	184	9	0.49%	0.08%
Black bear	2,454 / 6,135	90	9	0.37%	0.053%
Bobcat	1,524 / 2,607	10	1.5	0.06%	0.001%
Common muskrat	11,325 / 56,625	3,406	120	1.1%	0.54%
Coyote	2,632 / 13,160	642	55	0.75%	0.013%
Gray fox	3,682 / 8,154	13	3	0.001%	0.003%
Mountain lion	122 / 277	85	7	5.74%	0.23%
Raccoon	664 / 1,939	28	1	0.06%	0.001%
Striped skunk	3,562 / 16,989	84	10	0.09%	0.003%
Wild pig	740 / 781	10	3	0.24%	0.01%

TABLE 3

STATEWIDE AND CUMULATIVE TARGET MAMMAL SPECIES POPULATION AND TAKE SUMMARY

Target Species	Estimated State Population (Low)	APHIS-WS Statewide Total Take 2007-2017[1]	APHIS-WS Statewide Median Annual Take over 11-Year Period	County Cumulative plus State Cumulative[1]	Total County plus State Cumulative Compared to State Low Population[1]
American beaver	10,789	1,996	184	268	2.48%
Black bear	17,000	1,345	134	1,595	9.38%
Bobcat	70,207	517	53	410	0.34%
Common muskrat	22,410	228	228	1,458	6.51%
Coyote	431,342	56,696	5,326	57,203	13.3%
Gray fox	119,690	1,714	171	750	0.63%
Mountain lion	3,100	998	86	133	4.30%
Raccoon	72,407	24,311	2,424	3,354	4.6%
Striped skunk	318,195	42,521	3,780	5,135	1.61%
Wild pig	120,441	8,927	840	2,937	2.44%

Implementation of APHIS-WS IWDM activities in the County under a new CSA has the potential to result in impacts on common wildlife species. Under the CSA, APHIS-WS personnel would provide information and advice to County residents and resource owners (e.g., phone calls, field visits, presentations, development and dissemination of information, and service visits) regarding recommendations of nonlethal methods, as has occurred historically. These activities would have no direct effect on wildlife populations. However, after using the IWDM Decision Model, the APHIS-WS field specialist may determine that an animal causing damage may need to be removed by lethal methods, but only as a last resort. The techniques used by the IWDM program are designed to be target-specific, and all wildlife specialists are certified and trained in techniques to minimize the risk of capturing nontarget wildlife. Attachment A, Project Background, contains additional information about the decision model and methods.

Maintaining viable populations of all native species is important to APHIS-WS, state and federal cooperating agencies, the County, and the public. The APHIS-WS program does not seek to eradicate any species, regardless of legal status, or result in take that would substantially reduce species' populations, and APHIS-WS does not target any species for reduction. The CSA would not provide for such activities. For most wildlife damage management, once a damage situation is resolved, APHIS-WS field specialists do not continue work to remove additional animals unless a problem reoccurs, there are historical problems, and/or a request for assistance is made.

The number of target animals that would be removed by lethal methods by APHIS-WS under the County-funded CSA would be a function of the number of requests and decisions made by APHIS-WS staff in the field using the agency's Decision Model. Given that the number of hours historically spent by APHIS-WS field specialists has remained fairly constant, and the proposed CSA does not increase the maximum number of hours relative to previous CSAs, it is reasonable to assume there would be a similar level of effort directed at wildlife damage activities, including those that may result in the removal of a wildlife species by lethal methods. Therefore, the number of common wildlife species removed would not be expected to be greater than has previously occurred. As stated previously, lethal removals are only performed as a last resort. The geographic scope of the program is also limited. Historically, APHIS-WS has provided assistance covering only a small percentage of the County's total land area; it is reasonable to assume there would be little change under a new CSA. Therefore, in any given geographic area, removals of target species would continue to occur on a small percentage of land.

The following presents the results of the impact analyses for common mammal species for which the most requests for assistance and/or removals have occurred. Data presented in the following analyses are from Table 2 and Table 3, above, with detailed supporting information in Attachment B, unless otherwise noted.

American Beaver

American beaver is widely distributed in California, through reestablishment and introductions. High value habitats include montane riparian, valley foothill riparian, riverine, lacustrine, aspen, and fresh emergent wetland. Each litter averages three to four young. Most young disperse in the second year. American beaver can be legally trapped by the public with a valid CDFW license.

Table B-7 in Attachment B presents population and take data for American beaver. The median take of American beaver by APHIS-WS in the County (9 individuals) represents 0.49% of the total County population and 0.08% of the state's population, which is negligible. Cumulatively, take has been approximately 2.5% of the state low population estimate and is not substantial. Under the CSA, assuming a similar number of removals as baseline conditions, the proposed project would not reduce the number of American beaver or cause the species to drop below self-sustaining levels. The impact would be less-than-significant.

Black Bear

Black bear occurs in mature stands of many forest habitats, and feeds in a variety of habitats including brushy stands of forest, valley foothill riparian, and wet meadow in the North Coast Ranges, Cascades, Sierra Nevada, parts of the South Coast Ranges, and in the San Gabriel and San Bernardino Mountains. Each litter averages between one and six young, which disperse at between 1 and 2 years of age. Black bear can be legally hunted with a valid CDFW license.

Table B-8 in Attachment B presents population and take data for black bear. The median take of black bear by APHIS-WS in the County (9 individuals) represents 0.37% of the total County population and 0.06% of the state's population, which is negligible. By comparison, the 2018 season yielded 1,072 bears harvested statewide, of which 114 were in Shasta County.[3] Cumulatively, APHIS-WS take has been approximately 9.4% of the state low population estimate. When the median number of black bears removed (County plus statewide) is considered in the context of CDFW's cumulative annual statewide harvest limit of 3,875 individuals from all sources, which includes legal hunter harvest (3,100 individuals) and illegal take (775 individuals),[4] the County's contribution to the cumulative effect is less than 1% (see Attachment B, Table B-4). Under the CSA, assuming a similar number of removals as baseline conditions, the proposed project would not reduce the number of bear or cause the species to drop below self-sustaining levels. The impact would be less-than-significant.

Bobcat

Bobcats can be rare to common in low- and mid-elevation conifer, oak, riparian, and pinyon-juniper forests, and all stages of chaparral. Litter size varies from one to seven young. Young disperse in their first year. Bobcat can be legally hunted by the public with a valid CDFW license.

Table B-9 in Attachment B presents population and take data for bobcat. The median take of bobcat by APHIS-WS in the County (1.5 individuals) represents 0.06% of the total County population and 0.002% of the state's population, which is negligible. By comparison, the 2017-18 season yielded 331 bobcats harvested by the public statewide, 19 of which were in Shasta County.[5] Cumulatively, APHIS-WS take has been under 1% of the state low population estimate and is not substantial. Under the CSA, assuming a similar number of removals as baseline conditions, the proposed project would not reduce the number of bobcat or cause the species to drop below self-sustaining levels. The impact would be less-than-significant.

Common Muskrat

Common muskrats occur from Salton Sea to Siskiyou County in valley foothill and montane riparian habitats, aspen, and lacustrine, riverine, and estuarine habitats. Muskrats also occupy human-made habitats such as roadside and irrigation ditches. Litter size averages four to eight young. Maturity is reached the spring after birth. Common muskrats can be trapped by the public with a valid CDFW license.

Table B-10 in Attachment B presents population and take data for common muskrat. The median take of common muskrat by APHIS-WS in the County (120 individuals) represents 1.1% of the total County population and 0.54% of the state's population. Cumulatively, take has been approximately 6.5% of the state low population estimate and is not substantial. Under the CSA, assuming a similar number of removals as baseline conditions, the proposed project would not reduce the number of common muskrat or cause the species to drop below self-sustaining levels. The impact would be less-than-significant.

Coyote

Coyote is a widely distributed and an abundant nongame permanent resident in California found in almost all habitats, including brush, scrub, shrub, and herbaceous habitats, and may be associated opportunistically with croplands. They are also found in younger stands of deciduous and conifer forest and woodland with low to intermediate canopy, and shrub and grass understory. Coyotes may live at elevations as high as 9,840 feet and also in urban areas. They are tolerant of human activities and adapt and adjust rapidly to changes in their environment. Golden eagles, great horned owls, and mountain lions occasionally predate on coyotes. Each litter averages five to six young that disperse from parents in 60 months.

Coyote is a nongame animal and may be taken year-round for any reason. CDFW does not require depredation permits or hunting licenses for coyotes. While APHIS-WS records the number of coyotes that it kills as part of the IWDM program, CDFW does not have similar records for the numbers of coyotes that are killed by private landowners because permits to hunt and kill coyotes are not required, nor is any reporting to CDFW or to the County required. Based on hunter surveys, it is estimated that hunting and public depredation take of coyote in the state is 94,057 individuals. Specific data for Shasta County is not reported.[6]

Table B-11 in Attachment B presents population and take data for coyote. The median take of coyote by APHIS-WS in the County (55 individuals) represents 0.75% of the total County population and 0.013% of the state's population, which is negligible. Cumulatively, APHIS-WS take has been approximately 13% of the state low population estimate, which is well under the CDFW (2004) cumulative annual harvest population threshold (Attachment B, Table B-7). Under the CSA, assuming a similar number of removals as baseline conditions, the proposed project would not reduce the number of coyote or cause the species to drop below self-sustaining levels. The impact would be less-than-significant.

Gray Fox

Gray fox is a rare to common species found throughout most of the state. It is found in shrublands, valley foothill riparian, montane riparian, and brush stages of many deciduous and conifer forest, woodland habitats, meadows, and cropland areas. Average litter size is four young and dispersal occurs in the first year. Gray fox can be legally trapped by the public with a valid CDFW license.

Table B-12 in Attachment B presents population and take data for gray fox. The median take of gray fox by APHIS-WS in the County (3 individuals) represents 0.001% of the total County population and 0.003% of the state's population, which is negligible. Cumulatively, APHIS-WS take has been less than 1% of the state low population estimate and is not substantial. Under the CSA, assuming a similar number of removals as baseline conditions, the proposed project would not reduce the number of gray fox or cause the species to drop below self-sustaining levels. The impact would be less-than-significant.

Mountain Lion

Mountain lion is widespread but uncommonly encountered. It is found in nearly all habitats from sea level to alpine. Litter size varies from two to four young. Young disperse in their second year.

Table B-13 in Attachment B presents population and take data for mountain lion. The median take of mountain lion by APHIS-WS in the County (7 individuals) represents 5.74% of the total County population and 0.23% of the state's population. Mountain lion may only be taken with a depredation permit. CDFW is required to issue the permit if the loss or damage is confirmed by CDFW staff to have been caused by mountain lions. CDFW has not established a sustainable harvest level for mountain lion and manages the species for conservation.

Given that take occurs only with authorization from a trustee agency of the state for the species and APHIS-WS take in Shasta County is minor compared to the state population size, the effect on the population is less-than-significant.

Raccoon

Raccoon occurs through most of the state in most habitats with water availability. Litters average three to four and young are weaned at 60 to 90 days and become semi-independent at about 130 days. Raccoon can be legally trapped by the public with a valid CDFW license.

Table B-14 in Attachment B presents population and take data for raccoon. The median take of raccoon by APHIS-WS in the County (1 individual) represents 0.06% of the total County population and 0.001% of the state's population, which is negligible. Cumulatively, APHIS-WS take has been approximately 4.6% of the state low population estimate and is not substantial. Under the CSA, assuming a similar number of removals as baseline conditions, the proposed project would not reduce the number of raccoon or cause the species to drop below self-sustaining levels. The impact would be less-than-significant.

Striped Skunk

Striped skunk is found in most habitats from sea level to timberline. Litter averages four young and young reach maturity at 10 months.

Table B-15 in Attachment B presents population and take data for striped skunk. The median take of striped skunk by APHIS-WS in the County (10 individuals) represents 0.09% of the total County population and 0.003% of the state's population, which is negligible. Cumulatively, APHIS-WS take has been approximately 2% of the state low population estimate and is not substantial. Under the CSA, assuming a similar number of removals as baseline conditions, the proposed project would not reduce the number of striped skunk or cause the species to drop below self-sustaining levels. The impact would be less-than-significant.

Wild Pig

Wild pigs are feral and introduced, and common at low to middle elevations at scattered locations in cismontane California. The population is common, and increasing in numbers, in local areas, occurring in riparian areas, oak woodlands, annual grasslands, mature conifer and hardwood forests, and in chaparral and other brush areas. The average litter is five to six piglets and weaning occurs in three to four months. Females can produce one to two litters per year.

Wild pig can be legally hunted by the public with a valid CDFW license. The 2017-18 season yielded 4,637 pigs harvested. Because feral swine is a nonnative, invasive species that causes extensive damage, California FGC Section 4181.1 provides that take may be implemented immediately by the permit holder when the animal is damaging or destroying, or threatening to immediately damage or destroy, land or property, or the landowner, agent, or employee encounters damage or threat. Sport hunters may also take feral pig.

Table B-16 in Attachment B presents population and take data for wild pig. The median take of wild pig by APHIS-WS in the County (3 individuals) represents 0.24% of the total County population and 0.0025% of the state's population. APHIS-WS is implementing a national program to stabilize and eventually reduce the range and size of feral swine populations.[7] Ongoing take would not cause the species or community to drop below self-sustaining levels under baseline plus project conditions, and the impact would be less-than-significant. While correcting habitat damage caused by wild pig is not an objective of IWDM, nor is the County responsible for such activities, removal of wild pig may provide a benefit to sensitive habitat and protected species.

Nontarget Species

Few, if any, nontarget effects would be expected to result from the project. Historically, the number of nontarget species take has been very small, so it is reasonable to assume continuation of the services would not result in an increase in nontarget take that would affect species populations. However, if a nontarget species is caught, as under previous CSAs, every effort is made to release it unharmed, unless the nontarget animal is injured and determined to not likely survive if released. Incidents of nontarget animal deaths are extremely low. This is due to the techniques used by the APHIS-WS field specialist to ensure that the correct location(s) for the nontarget species is identified.

Birds

APHIS-WS activities have resulted in the removal of over 70,000 blackbirds (Brewer's, red-winged, and yellow-headed) and lesser levels of other species during the 2007-2017 baseline period. For blackbirds, the removals for most years were near statewide totals (see Table B-6 in Attachment B). Of those, almost all were red-winged blackbirds. However, the number of blackbirds dispersed (not removed by lethal methods) by APHIS-WS personnel totaled nearly 3.5 million during the same time frame (Table B-3 in Attachment B). There has been a substantial decline in blackbird removals since listing of the tricolored blackbird in 2014, as shown in Table B-6 in Attachment B, and as indicated in Table B-3 and Table B-4, no mixed flocks have been removed or dispersed since that time. Because tricolored blackbird may be present in mixed flocks dominated by red-winged and Brewer's blackbird, APHIS-WS does not use any potentially lethal actions in mixed flocks. As such, the number of blackbird removals under a new CSA would be less than in previous years.

Other birds such as American coots, cowbirds, house sparrows, and European starlings have also been removed, as indicated in Table B-6 in Attachment B. Like blackbirds, these are abundant, common species. APHIS-WS could use nonlethal deterrent methods such as pyrotechnics for bird control. However, such use would be determined on a case-by-case basis by the field specialist to ensure that nests and eggs of special-status avian species and birds protected under the MBTA would not be affected.

Although Brewer's, red-winged, and yellow-headed blackbirds, along with other species not protected by federal or state endangered species laws that have historically been removed, are included on the MBTA Section 10.13 List, APHIS-WS is authorized by the federal government under 50 Code of Federal Regulations Section 21.41 to respond to damage caused by migratory birds. No federal permit is required to scare, harass, or herd depredating migratory birds other than migratory birds that are also listed as endangered or threatened species and bald or golden eagles. Therefore, although common birds may be removed by APHIS-WS if the CSA is implemented, it would not result in significant impacts on the common avian species populations.

Mitigation/Monitoring: No mitigation is required.

V. CULTURAL RESOURCES Would the project:	Potentially Significant Impact	Less-Than-Significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource pursuant to '15064.5?				✓
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to '15064.5?				✓
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?				✓
d) Disturb any human remains, including those interred outside of formal cemeteries?				✓

Discussion: Based on the related documents listed in the Sources of Documentation for Initial Study Checklist, staff review of the project, and knowledge of conditions in the County, the following findings can be made:

a-d) The project would not result in the construction or alteration of structures or other facilities. It would not include activities that would result in significant ground-disturbing activities, such as grading or excavation. Minor ground disturbance would result from installation of traps or snares, but the disturbance would be minimal and limited to surface soils. Therefore, the project would not cause a substantial adverse change in the significance of historic or archaeological resources, nor would it result in destruction of a unique paleontological resource or geological feature or disturbance of human remains. Therefore, the project would have no impact.

Mitigation/Monitoring: No mitigation is required.

VI. GEOLOGY AND SOILS Would the project:	Potentially Significant Impact	Less-Than-Significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving: 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 Publications 42. ii) Strong seismic ground shaking? iii) Seismic-related ground failure, including liquefaction? iv) Landslides?				✓
b) Result in substantial soil erosion or the loss of topsoil?				✓
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?				✓
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?				✓
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of waste water?				✓

Discussion: Based on the related documents listed in the Sources of Documentation for Initial Study Checklist, staff review of the project, and knowledge of conditions in the County, the following findings can be made:

a) The proposed project would not generate housing and/or population, nor would it increase nonresidential development or result in construction of any permanent structures. Ground disturbance would be limited to disturbance of surface soils for setting wildlife traps. Therefore, the project would not expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving seismic hazards such as earthquake fault rupture, strong seismic ground shaking, seismic-related ground failure, or landslides. No impact would occur.

b) The proposed project would not result in significant ground disturbance, construction, or grading activities that would result in substantial soil erosion or loss of topsoil. As a result, the project would have no impacts.

c-e) The proposed project would not involve any construction activities or installation of a septic tank or alternative wastewater disposal system. Therefore, the project would not result in a direct or indirect risk to life or property and the project would have no impact.

Mitigation/Monitoring: No mitigation is required.

VII. GREENHOUSE GAS EMISSIONS: Would the project:	Potentially Significant Impact	Less-Than-Significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?			✓	
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?			✓	

Discussion: Based on these comments, the related documents listed in the Sources of Documentation for Initial Study Checklist, staff review of the project, and knowledge of conditions in the County, the following findings can be made:

a,b) California Senate Bill (SB) 97 established that an individual project's effect on greenhouse gas (GHG) emission levels and global warming must be assessed under CEQA. SB 97 further directed that the Governor's Office of Planning and Research (OPR) develop guidelines for the assessment of a project's GHG emissions. Those guidelines for GHG emissions were subsequently included as amendments to the CEQA Guidelines. The guidelines did not establish thresholds of significance and there are currently no state, regional, county, or city guidelines or thresholds with which to direct project-level CEQA review. As a result, Shasta County reserves the right to use a qualitative and/or quantitative threshold of significance until a specific quantitative threshold is adopted by the state or regional air district.

The City of Redding, located in Shasta County, currently utilizes a quantitative non-zero project-specific threshold based on a methodology recommended by the California Air Pollution Control Officers Association (CAPCOA) and accepted by the California Air Resources Board (CARB). According to CAPCOA's Threshold 2.3, CARB Reporting Threshold, 10,000 metric tons of carbon dioxide equivalents per year ($MTC0_2eq/yr$) is recommended as a quantitative non-zero threshold. This threshold would be the operational equivalent of 550 dwelling units, 400,000 square feet of office use, 120,000 square feet of retail, or 70,000 square feet of supermarket use. This approach is estimated to capture over half the future residential and commercial development projects in the state of California and is designed to support the goals of Assembly Bill 32 and not hinder it. The use of this quantitative non-zero project-specific threshold by Shasta County, as lead agency, would be consistent with certain practices of other lead agencies in the County and throughout the state of California.

The proposed project would not result in an increase in population, housing, or other development that would increase motor vehicle usage, thus generating GHG emissions. Exhaust containing GHGs, such as CO_2, would be generated by the use of vehicles and ATVs by APHIS-WS personnel. The number of vehicles and ATVs used would remain the same as previous years because no changes to how the APHIS-WS program operates in the County that would substantially increase vehicle and ATV use is expected under the new CSA. Therefore, the project would not result in a substantial net increase in GHG emissions that would have a significant impact on the environment or conflict with applicable GHG plans or policies, and the impact would be less-than-significant.

Mitigation/Monitoring: No mitigation is required.

VIII. HAZARDS AND HAZARDOUS MATERIALS: Would the project:	Potentially Significant Impact	Less-Than-Significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?			✓	
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?			✓	
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?				✓
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section				✓

VIII. HAZARDS AND HAZARDOUS MATERIALS: Would the project:	Potentially Significant Impact	Less-Than-Significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
65962.5 and, as a result, would it create a significant hazard to the public or the environment?				
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 for people residing or working in the project area?				✓
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?				✓
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan, including those related to wildfire hazard?				✓
h) If located in or near state responsibility areas or lands classified as very high fire hazard severity zones: expose people or structures to a significant risk of loss, injury, or death involving wildland fires and related effects due to slope, prevailing winds, or other factors (e.g., wildfire air pollutants, uncontrolled spread of wildfire, post-fire flooding or landslides from post-fire slope instability) including where wildlands are adjacent to urbanized areas, or where residences are intermixed with wildlands.			✓	

Discussion: Based on these comments, the related documents listed in the Sources of Documentation for Initial Study Checklist, staff review of the project, and knowledge of conditions in the County, the following findings can be made:

a,b) The proposed project would involve the transport, handling/use, and disposal of a limited amount of toxicants (such as euthanasia drugs) approved by the U.S. Environmental Protection Agency (EPA) and U.S. Drug Enforcement Administration (DEA) necessary for APHIS-WS field personnel to perform the suite of wildlife management duties described in the project description. Pesticides may also be used. All chemicals and certain methods used by APHIS-WS are regulated by the EPA, DEA, and/or the Bureau of Alcohol, Tobacco, Firearms and Explosives, as applicable, as well as by WS Directives, such as WS Directive 2.465 and WS Directive 2.430.[1] WS Directive 2.465 provides guidelines related to maintaining accurate hazardous material inventories and records, and establishes accountability and oversight by all field personnel, supervisors, and managers.[2] WS Directive 2.430 addresses the uses of controlled chemicals and euthanizing agents, including training standards and certification requirements for APHIS-WS personnel.[3] Pesticide use is subject to procedures in WS Directive 2.401.[4] APHIS-WS Directive Section 2.435 (Explosives Use and Safety) provides protocols for the use of explosives for removing beaver dams causing damage to property or other resources.[5] If pyrotechnics or incidental explosives are used for non-lethal controls, such use would be subject to the requirements set forth in WS Directive 2.625 and WS Directive 2.627.[6,7]

Per the above-mentioned WS Directives, as well as EPA regulations, any hazardous materials transported, used, or disposed of as a result of the project would be subject to oversight and accountability by trained and certified APHIS-WS personnel. Furthermore, these substances would be used in limited amounts under controlled circumstances, are highly selective to target individuals or populations, and there would be no change in such use as a result of re-establishment of the IWDM program as provided for under the CSA. Therefore, they would not be expected to create a significant hazard to the public or the environment from their transport, use, or disposal or through reasonably foreseeable upset and accident conditions involving their release into the environment. As such, the proposed project's impact would be less-than-significant.

c) As stated in response to threshold VIII a,b), hazardous materials transported, used, or disposed of as a result of the project would be subject to WS Directives and EPA regulations intended to prevent significant hazards to the public or the environment, including public schools. The hazardous materials associated with this proposed project would be used under limited circumstances and in limited amounts. Further, the hazardous materials are highly selective to target individuals or populations. Therefore, the project would not involve hazardous emissions or hazardous substances in quantities that could cause impacts to an existing or proposed school and there would be no impact.

d) The proposed project would not involve grading or construction activities that could disturb existing contamination, if any, from the historical use of a site. Therefore, the proposed project would not create a significant hazard to the public or the environment.

e,f) The project would not include development near aviation facilities, aerial features such as antennas, or development with reflective materials. As such, the proposed project would have no impact on people residing or working in the vicinity of public or private

airstrips in the County. There would be no impact.

g) The County of Shasta has a Multi-Hazard Functional Plan, which details evacuation routes and procedures for first responders in the case of an emergency. Importantly, the project would not involve any construction activities that would erect physical structures or barriers that could impede the use of emergency evacuation routes. Further, the project would not result in an increase in vehicle traffic over baseline conditions that could significantly contribute to roadway congestion during an evacuation. As such, the project would not result in changes to any of the major transportation arterials that would be used in the event of an emergency, nor would it impair implementation of an emergency response or fire evacuation plan within the County. Therefore, the project would not impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan.

h) The Fire Safety and Sheriff Protection Chapter of the Shasta County General Plan Safety Element states that human activities such as smoking, debris burning, and equipment operation are the major causes (90%) of wildland fires in the County, with lightning causing the remaining 10% of the wildland fires.[8] There was an average of 333 wildland fires in Shasta County per year between 1992 and 2003, the majority of which were in northern Shasta County, which has an abundance of vegetation and long, dry summers. The Fire Safety and Sheriff Protection Chapter, Figure FS-1 shows that the majority of Shasta County is considered part of a Very High fire hazard severity zone, with portions of the County to the north and the southwest considered to be a High fire hazard severity zone.[9]

The project would not result in construction of urbanized development or permanent placement of people in a wildland area and thus would not result in a significant risk of loss, injury, or death involving wildland fires. Additionally, WS Directives summarized in Item a, above, direct that any wildlife management methods that could result in fire hazards, such as pyrotechnics, would be subject to oversight and accountability by trained and certified APHIS-WS personnel. Therefore, the project would not 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. Project impacts would be less-than-significant.

Mitigation/Monitoring: No mitigation is required.

IX. HYDROLOGY AND WATER QUALITY: Would the project:	Potentially Significant Impact	Less-Than-Significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements?				✓
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a new 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)?				✓
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?				✓
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 offsite?				✓
e) Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?				✓
f) Otherwise substantially degrade water quality?				✓
g) Place housing within 100-year flood hazard area as mapped on a Federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?				✓

IX. HYDROLOGY AND WATER QUALITY: Would the project:	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?				✓
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?				✓
j) Inundation by seiche, tsunami, or mudflow?				✓

Discussion: Based on the related documents listed in the Sources of Documentation for Initial Study Checklist, staff review of the project, and knowledge of conditions in the County, the following findings can be made:

a-f) There would be no construction, grading, vegetation removal, or other significant earth-moving activities associated with the proposed project. The project would not generate stormwater runoff, nor would it involve substantial use of groundwater supplies. Therefore, the proposed project has no potential for discharges to watercourses, construction erosion and sedimentation of watercourses, the alteration of drainage patterns, the concentration or redirecting of pollutants, the depletion of groundwater supplies, or the violation of existing water quality standards. As such, no impact to water quality would occur.

g,h) The proposed project would not involve any construction or placement of permanent structures. As such, the project would not place housing within a 100-year flood hazard area, nor would it place a structure within a 100-year flood hazard area, which would impede or redirect flood flows. Therefore, the project would have no impact.

i,j) The proposed project would not generate housing and/or population, nor would it increase nonresidential development. As a result, the project would not result in the exposure of people or structures to flooding or inundation by seiche, tsunami, or mudflow. Therefore, the project would have no impact.

Mitigation/Monitoring: No mitigation is required.

X. LAND USE AND PLANNING - Would the project:	Potentially Significant Impact	Less-Than-Significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a) Physically divide an established community?				✓
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?				✓
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?				✓

Discussion: Based on the related documents listed in the Sources of Documentation for Initial Study Checklist, staff review of the project, and knowledge of conditions in the County, the following findings can be made:

a) The proposed project would not involve construction of housing or other permanent structure, feature, or barrier that could physically divide an established community. As such, no impact would occur.

b) The project would not conflict with any plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect as discussed throughout this Initial Study. General Plan Goal AG-1 states: "Preservation of agricultural lands at a size capable of supporting full-time agricultural operations in order to allow the continuation of such uses and to provide opportunities for the future expansion and/or establishment of such uses." The project supports this goal in the County by preventing and reducing damage to agricultural property, crops, and livestock.[1] Therefore, the project would have no impact.

c) As stated in threshold IV f), Biological Resources, the project would not conflict with any applicable habitat conservation plan or

natural community conservation plan. Therefore, there would be no impact.

Mitigation/Monitoring: No mitigation is required.

XI. MINERAL RESOURCES - Would the project:	Potentially Significant Impact	Less-Than-Significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
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?				✓
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?				✓

Discussion: Based on the related documents listed in the Sources of Documentation for Initial Study Checklist, staff review of the project, and knowledge of conditions in the County, the following findings can be made:

a,b) The proposed project would not include any changes to zoning, changes in land use, construction, development of permanent structures, or other project activities that would result in the permanent or temporary loss of availability of a known mineral resource or of a locally important mineral resource recovery site. As such, the project would result in no impacts.

Mitigation/Monitoring: No mitigation is required.

XII. NOISE - Would the project result in:	Potentially Significant Impact	Less-Than-Significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
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?			✓	
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels				✓
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?				✓
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?			✓	
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?				✓
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?				✓

Discussion: Based on the related documents listed in the Sources of Documentation for Initial Study Checklist, staff review of the project, and knowledge of conditions in the County, the following findings can be made:

a) Wildlife damage management equipment, tools, and methods may generate temporary, intermittent noise during project implementation. Such temporary, intermittent noise could include noise from firearms, trailing hounds, ATVs, pyrotechnics, and

electronic calling devices. These noises would predominantly occur on large agricultural parcels, rather than in dense urban areas, so substantial numbers of people would not be exposed to these temporary, loud noises and the noises would be widely dispersed. No changes in noise-producing tools or equipment would occur as compared with baseline activities. Therefore, the proposed project's impacts would be less-than-significant.

b) The project would not include vibration-producing land uses or the use of vibration-producing construction equipment, such as bulldozers, jackhammers, or pile drivers. As such, no impact would occur.

c) The proposed project would not generate permanent sources of noise, nor would it place new land uses near sensitive receptors or land uses where sensitive receptors reside. As such, the project would not result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project. No impact would occur.

d) As discussed above, the project would generate temporary, intermittent noise associated with the use of wildlife damage management tools and equipment. Importantly, these types of wildlife management and dispersal tools have been used for IWDM activities, and no changes would occur under the proposed project. Therefore, the project would not result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project. Impacts would be less-than-significant.

e,f) The proposed project would not directly result in construction of new housing, nor would the project indirectly result in an increase in housing or population. Further, the project would not increase nonresidential development. Therefore, the project would not result in exposure of people or structures to excessive noise from public or private airstrips. As a result, no impact would occur.

Mitigation/Monitoring: No mitigation is required.

XIII. POPULATION AND HOUSING: Would the project:	Potentially Significant Impact	Less-Than-Significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
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)?				✓
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?				✓
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?				✓

Discussion: Based on the related documents listed in the Sources of Documentation for Initial Study Checklist, staff review of the project, and knowledge of conditions in the County, the following findings can be made:

a) The proposed project would not directly induce population growth in the County or in surrounding areas, as it would not include the construction of new residential structures or result in the need for new residential structures. In addition, the project would not result in or encourage the extension of paved roadways or public service/utility infrastructure into an undeveloped area and thus indirectly encourage population and housing growth. Further, a substantial number of new jobs is not anticipated because the number of funded staff hours, and therefore the number of staff working, would not increase compared to historical staffing levels provided by the CSA. Therefore, the project is not expected to induce substantial growth in the area and no impact would occur.

b,c) Implementation of the proposed project would not displace existing housing or people and would not change any land use designation or zoning to restrict the development of housing. As such, no impact would occur.

Mitigation/Monitoring: No mitigation is required.

XIV. PUBLIC SERVICES: 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:	Potentially Significant Impact	Less-Than-Significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a) Fire Protection?				✓
b) Police Protection?				✓
c) Schools?				✓
d) Parks?				✓
e) Other public facilities?				✓

Discussion: Based on the related documents listed in the Sources of Documentation for Initial Study Checklist, staff review of the project, and knowledge of conditions in the County, the following findings can be made:

a-e) The proposed project would not generate housing or induce population growth, nor would it increase nonresidential development. Further, the proposed project would not construct any physical structures that would require protection from theft/vandalism or protection from fire dangers. Therefore, the project would not increase the demand for other public services such as schools and parks and would not require new or physically altered governmental facilities, the construction of which could cause significant environmental impacts. The proposed project would have no impact.

Mitigation/Monitoring: No mitigation is required.

XV. RECREATION:	Potentially Significant Impact	Less-Than-Significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
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?				✓
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?				✓

Discussion: Based on the related documents listed in the Sources of Documentation for Initial Study Checklist, staff review of the project, and knowledge of conditions in the County, the following findings can be made:

a,b) The proposed project would not involve construction of new housing, nor would the proposed project induce population growth. As such, the project would not 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. Therefore, the proposed project would not result in physical impacts to the environment from construction of new recreational facilities or the degradation of existing residential facilities. The project would have no impact.

Mitigation/Monitoring: No mitigation is required.

XVI. TRANSPORTATION/TRAFFIC: Would the project:	Potentially Significant Impact	Less-Than-Significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
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?				✓
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?				✓
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?				✓
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?				✓
e) Result in inadequate emergency access?				✓
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?				✓

Discussion: Based on the related documents listed in the Sources of Documentation for Initial Study Checklist, staff review of the project, and knowledge of conditions in the County, the following findings can be made:

a,b) The proposed project would not increase the number of vehicles and ATVs currently used by APHIS-WS personnel to conduct wildlife management activities beyond that which has occurred historically because the CSA would not provide for additional vehicles compared to previous CSAs. The proposed project would not result in an increase in vehicle use, mass transit use, or non-motorized travel within Shasta County that would contribute to increased congestion. Therefore, the project would not cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system and there would be no impact relative to transportation plans.

c) The proposed project would not result in the construction of permanent or temporary structures that would directly or indirectly increase air traffic levels, change air travel locations, or otherwise affect air traffic patterns. Because no changes are proposed in the CSA compared to previous CSAs, no change in aircraft operations are expected. Aerial operations, if any, would be subject to standards for safe use of aircraft set forth in WS Directive 2.620.[1] Therefore, the proposed project would have no impact.

d) The proposed project would not result in any new development or require the construction or extension of roadways, nor will it change any land use designation or zoning. Therefore, the project would not substantially increase hazards due to a design feature and no impact would occur.

e) The proposed project would not involve any construction of permanent structures, barriers, or transportation networks. Therefore, the project would not require the provision of emergency access, nor would it impair implementation of emergency response within the County. As such, there would be no impact.

f) The project would not involve any construction of residential or nonresidential structures that would burden existing transportation networks. Further, the proposed project would not interfere with any existing transit routes, nor would it remove or relocate any existing transit stops/stations. Therefore, the project would not conflict with any adopted County policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, as identified in the County's General Plan Circulation Element. Therefore, the project would have no impacts as it relates to public transit, bicycle, or pedestrian facilities or networks.

Mitigation/Monitoring: No mitigation is required.

XVII. TRIBAL CULTURAL RESOURCES: Would the project:	Potentially Significant Impact	Less-Than-Significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is: i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.				✓

Discussion: Based on the related documents listed in the Sources of Documentation for Initial Study Checklist, staff review of the project, and knowledge of conditions in the County, the following findings can be made:

ai,aii) The project would not result in the construction or alteration of structures or other facilities. The project would not include activities that would result in grading or excavation; any ground disturbance necessary for the installation of traps or snares would be minimal and limited to surface soils. Therefore, the project would not cause a substantial adverse change in the significance of a tribal cultural resource and there would be no impact.

Mitigation/Monitoring: No mitigation is required.

XVIII. UTILITIES AND SERVICE SYSTEMS: Would the project:	Potentially Significant Impact	Less-Than-Significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?				✓
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?				✓
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?				✓
d) Have sufficient water supplies available to serve the project which serves or may serve the project from existing entitlements and resources, or are new or expanded entitlements needed?				✓

XVIII. UTILITIES AND SERVICE SYSTEMS: Would the project:	Potentially Significant Impact	Less-Than-Significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
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?				✓
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?				✓
g) Comply with Federal, State, and local statutes and regulations related to solid waste?				✓
h) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?				✓
i) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?				✓

Discussion: Based on the related documents listed in the Sources of Documentation for Initial Study Checklist, staff review of the project, and knowledge of conditions in the County, the following findings can be made:

a-e) The proposed project would not involve construction of permanent or temporary housing or nonresidential structures, which would induce population growth within Shasta County. As such, the proposed project would not increase the demand for water, wastewater treatment, and storm drainage facilities and would not require new or expanded facilities, the construction of which could cause environmental effects. Therefore, the proposed project would have no impacts.

f,g) Animal control measures associated with implementation of the proposed project would result in animal carcasses that would require disposal. Wildlife Service Directive WS 2.515 sets forth requirements for the disposal of wildlife carcasses, requiring that all carcasses be disposed of in a manner consistent with federal, state, county, and local regulations.[1] The County of Shasta is served by two landfills. These landfills include the Anderson Landfill, a permitted, active landfill with over 10 million cubic yards of capacity owned and operated by Waste Management of California, and the West Central Landfill, a permitted, active landfill with over 6.5 million cubic yards of capacity owned and operated by the County of Shasta.[2,3] Given the amount of existing capacity within these two landfills, disposal of animal carcasses associated with the proposed project would not impact capacity of the landfills requiring an expansion that could result in environmental impacts. As such, the proposed project would have no impact.

h) The proposed project would result in short-term consumption of petroleum-based energy products to power vehicles used by APHIS-WS personnel to travel to and from agricultural areas where wildlife management is required. There would be no changes to how the APHIS-WS program historically operated in the County that would substantially increase vehicle and ATV use. As a result, the amount of petroleum-based energy products used to power vehicles transporting APHIS-WS personnel would remain small and would be consumed by modern, internal-combustion engines in vehicles and ATVs. Therefore, proposed project implementation would not constitute a waste of fossil-fuel resources, and the project would have no impact.

i) The proposed project would not involve construction of any residential or nonresidential permanent structures. The lack of permanent structures requiring substantial energy resources (e.g., energy to power lighting or air conditioning) means that energy conservation or energy efficiency measures mandated by California Energy Code or local building codes are not applicable to the proposed project. The project would not conflict with any state or local energy conservation or energy efficiency programs. Therefore, the proposed project would have no impact.

Mitigation/Monitoring: No mitigation is required.

XIX. MANDATORY FINDINGS OF SIGNIFICANCE:	Potentially Significant Impact	Less-Than-Significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
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 the 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?			✓	
b) Does the project have impacts that are individually limited, but cumulatively considerable? (ACumulatively considerable@ means that the incremental effects of a project are considerable when viewed in connection the effects of past projects, the effects of other current projects, and the effects of probable future projects)?			✓	
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?			✓	

Discussion:

a) The continuation of the IWDM program by APHIS-WS through reestablishment of the CSA with the County of Shasta would not substantially impact fish or wildlife habitat because it would cause no physical habitat disturbance. Section IV, Biological Resources, evaluated the project's potential effects on wildlife populations and concluded that the proposed project would not result in any significant impacts. The program is designed to avoid direct and indirect impacts on special-status species and would result only in selective take of individual targeted common wildlife animals as a last resort when other control methods have not been successful. The proposed project would not affect wildlife migration corridors or restrict the range of wildlife species. The proposed project would not have a significant impact on wildlife species such that the wildlife population would drop below self-sustaining levels. Impacts would be less-than-significant.

Regarding cultural or historic resources, based on the discussion and findings in Section V, Cultural Resources, there is no evidence to support a finding that the project would have the potential to eliminate important examples of the major periods of California history or prehistory. There would be no impact.

b) As described in the other sections of this Initial Study, some environmental impacts could occur, but the proposed project would not result in any potentially significant impacts because there would be no change in the types of impacts that could occur compared to historical (baseline) conditions. Therefore, the potential for project cumulative effects in combination with other planned or anticipated improvements is minimal. The project would not have cumulative impacts on future projects or other projects in the general area.

c) The proposed project is intended to protect, rather than have adverse effects on, human beings. The stated goal of the project is to conduct a biologically sound, environmentally safe, and responsive IWDM Program in an accountable manner to assist property owners, businesses, private citizens, and governmental agencies in resolving wildlife damage problems, as well as to conduct control activities in accordance with applicable federal, state, and local laws and regulations. As described in this Initial Study, all services are conducted in compliance with a series of WS Directives that provide guidance to APHIS-WS personnel.[1] Upon review of the discussion and findings in all sections above, there is no evidence to support a finding that the project would have environmental effects which would cause substantial adverse effects on human beings, either directly or indirectly. The directives address proper transport, use, and disposal of any pesticide or immobilization/euthanasia toxicants, explosives, or pyrotechnics used for the project, as well as the proper disposal of animal carcasses generated by the project. Noise generated by the project would be temporary, intermittent, and would not significantly increase from existing noise levels under the proposed project. Therefore, the proposed project would not have environmental effects which would cause substantial adverse effects on human beings, either directly or indirectly.

Mitigation/Monitoring: No mitigation is required.

SOURCES OF DOCUMENTATION FOR INITIAL STUDY CHECKLIST

All headings of this source document correspond to the headings of the initial study checklist. In addition to the resources listed below, initial study analysis may also be based on field observations by the staff person responsible for completing the initial study. Most resource materials are on file in the office of the Shasta County Department of Resource Management, Planning Division, 1855 Placer Street, Suite 103, Redding, CA 96001, Phone: (530) 225-5532.

ENVIRONMENTAL IMPACTS

I. AESTHETICS

1. United States Department of Agriculture, APHIS-WS. 2014. WS Directive 2.450, Traps and Trapping Devices.
2. United States Department of Agriculture, APHIS-WS. 2011. WS Directive 2.515, Disposal of Wildlife Carcasses.

II. AGRICULTURAL AND FORESTRY RESOURCES

None.

III. AIR QUALITY

1. Shasta County. 2004. Shasta County Air Quality Management Plan.
2. California Air Resources Board. 2017. Area Designations Maps / State and National. Accessed February 18, 2019. Available at https://www.arb.ca.gov/desig/adm/adm.htm.
3. Sacramento Valley Engineering and Enforcement Professionals. 2013. *Northern Sacramento Valley Planning Area 2012 Triennial Air Quality Attainment Plan.*

IV. BIOLOGICAL RESOURCES

1. United States Department of Agriculture. 2019. Animal and Plant Health Inspection Service Wildlife Services. Management Information System. [2007-2017 datasets included in Attachment B, Table B-3 and Table B-4].
2. Shasta County. 2004. General Plan Resources Group, Fish and Wildlife Habitat Chapter. https://www.co.shasta.ca.us/docs/libraries/resource-management-docs/docs/67fish.pdf?sfvrsn=8c29849c_0.
3. California Department of Fish and Wildlife. 2018. Black Bear Take Report 2016.
4. California Department of Fish and Wildlife. 2011. Draft Environmental Document Sections 265, 365, 366, 367.5, 401, 708, Title 14, California Code of Regulations Regarding Bear Hunting.
5. California Department of Fish and Wildlife. 2018. Bobcat Harvest Assessment.
6. California Department of Fish and Wildlife. 2015. Harvest of Small Game, Upland Birds, and Other Wildlife in California. Prepared by Responsive Management.
7. United States Department of Agriculture. 2016. APHIS National Feral Swine Damage Management Program. https://www.aphis.usda.gov/aphis/resources/pests-diseases/feral-swine/feral-swine-program.

V. CULTURAL RESOURCES

None.

VI. GEOLOGY AND SOILS

None.

VII. GREENHOUSE GAS EMISSIONS

None.

VIII. HAZARDS AND HAZARDOUS MATERIALS

1. United States Department of Agriculture, APHIS-WS. Various years. WS Program Directives. Accessed February 18, 2019. Available at https://www.aphis.usda.gov/aphis/ourfocus/wildlifedamage/sa_ws_program_directives/ct_ws_dir_ch2.
2. United States Department of Agriculture, APHIS-WS. 2008. WS Directive 2.465, Accountability and Oversight of Hazardous Materials.
3. United States Department of Agriculture, APHIS-WS. 2009. WS Directive 2.430, Controlled Chemical Immobilization and Euthanizing Agents.
4. United States Department of Agriculture, APHIS-WS. 2009. WS Directive 2.401, Pesticide Use.
5. United States Department of Agriculture, APHIS-WS. 2017. WS Directive 2.435, Explosives Use and Safety.

6. United States Department of Agriculture, APHIS-WS. 2006. WS Directive 2.625, Pyrotechnics, Rocket Net Charges, and Incidental Explosive Materials.
7. United States Department of Agriculture, APHIS-WS. 2017. WS Directive 2.627, Pyrotechnics.
8. County of Shasta. 2004. General Plan Fire Safety and Sheriff Protection Element. https://www.co.shasta.ca.us/docs/libraries/resource-management-docs/docs/54firesafety.pdf?sfvrsn=204962bd_0.
9. County of Shasta. 2004. General Plan Fire Safety and Sheriff Protection Element, Figure FS-1.

IX. HYDROLOGY AND WATER QUALITY

None.

X. LAND USE AND PLANNING

1. County of Shasta. 2004. General Plan Resources Group, Agricultural Lands Chapter. https://www.co.shasta.ca.us/docs/libraries/resource-management-docs/docs/61agriculture.pdf?sfvrsn=dc72037e_0.

XI. MINERAL RESOURCES

None.

XII. NOISE

None.

XIII. POPULATION AND HOUSING

None.

XIV. PUBLIC SERVICES

None.

XV. RECREATION

None.

XVI. TRANSPORTATION/TRAFFIC

1. United States Department of Agriculture, APHIS-WS. 2009. WS Directive 2.620, WS Aviation Safety and Operations.

XVII. TRIBAL CULTURAL RESOURCES

None.

XVIII. UTILITIES AND SERVICE SYSTEMS

1. United States Department of Agriculture, APHIS-WS. 2011. WS Directive 2.515, Disposal of Wildlife Carcasses.
2. CalRecycle. 2019. Solid Waste Disposal System Facility Detail report for Anderson Landfill, Inc. Accessed February 18, 2019. Available at https://www2.calrecycle.ca.gov/swfacilities/Directory/45-AA-0020/.
3. CalRecycle. 2019. Solid Waste Disposal System Facility Detail report for West Central Landfill. Accessed February 18, 2019. Available at https://www2.calrecycle.ca.gov/swfacilities/Directory/45-AA-0043/.

XIX. MANDATORY FINDINGS OF SIGNIFICANCE

1.United States Department of Agriculture (USDA), APHIS-WS. Various years. WS Program Directives. Accessed February 18, 2019. Available at https://www.aphis.usda.gov/aphis/ourfocus/wildlifedamage/sa_ws_program_directives/ct_ws_dir_ch2.

ATTACHMENT A
PROJECT BACKGROUND

INTRODUCTION

The proposed project evaluated in this Initial Study is Shasta County's cost-share Cooperative Service Agreement (CSA) with the U.S. Department of Agriculture (USDA) Animal and Plant Health Inspection Service – Wildlife Services (APHIS-WS) to perform integrated wildlife damage management (IWDM services in the County. Under the proposed project, these management services would be provided solely by APHIS-WS personnel and only at the request of the resource owner. Shasta County would not decide whether a resource owner should receive assistance, nor would the County be materially involved in conducting any of the IWDM technical assistance efforts or measures to control wildlife damage other than to cost-share the financial portion of the program. The project description in the Initial Study describes the administrative elements of the CSA that would allow APHIS-WS to perform services for resource owners upon request.

This attachment provides a context for these services and is also intended to disclose relevant information and data to the public and decision makers. It describes what wildlife damage is and the approach to managing it; the regulatory framework that allows APHIS-WS to provide wildlife damage management services in the County; and direct control methods that are or may be used for wildlife damage management (including nonlethal and lethal methods). This section also presents information about resource value and wildlife damage loss data from the USDA as well as the Shasta County Office of the Agricultural Commissioner. Data regarding the types of assistance provided by APHIS-WS is also included.

Included at the end of this document is information about the types of direct controls that APHIS-WS could use in Shasta County.

BACKGROUND

Wildlife Damage

Across the United States, wildlife habitat is altered as human populations expand and land is used for human needs. These human uses and needs often compete with wildlife, which increases the potential for conflicting human-wildlife interactions. Damage-causing wildlife in California includes a range of species that prey on livestock and wildlife, cause damage to property and other resources, and threaten public safety. There are several categories of resources that can be damaged or threatened by wildlife. The following summarizes information about the types of damage and the wildlife associated with that damage. Additional data specific to Shasta County appears at the end of this document under the "Shasta County Information" subheading.

Agricultural Resources

Predators, including coyotes, mountain lions, bobcats, and black bears, and smaller wildlife such as skunks and weasels can kill, injure, and harass domestic livestock. In California, predators depredate on cattle, goats, sheep, chickens, and eggs, as well as other livestock. Cattle and calves are most vulnerable to predation (killing, harassment, or injury resulting in monetary losses to the owner) at calving season and less vulnerable at other times of year. However, sheep, and especially lambs, can sustain high predation rates throughout the year. Individual livestock producers can experience serious economic hardship from unexpected losses due to predation.

Infected wildlife can also transmit zoonotic (transmissible from wildlife to humans) disease to livestock. Introduction of disease into the domestic livestock herds can damage the infected herd as well as the livestock industry (Shwiff et al. 2016).

ATTACHMENT A: PROJECT BACKGROUND

The USDA National Agricultural Statistics Service (NASS) compiles death losses for livestock and reports those data every five years as a cooperative effort between the NASS and APHIS-WS and APHIS Veterinary Services. NASS reported California farmers and ranchers suffered predation losses of cattle and calves valued at more than $4.1 million in 2010 (NASS 2011:7), and sheep and lambs valued at approximately $1.1 million in 2014 (USDA 2015c: Table A.2.b). In California, coyotes were responsible for the majority of cattle, calf, sheep, and lamb losses to predators (NASS 2011:9; USDA 2015c: Table C.8). Loss/damage data specific to Shasta County are presented under the "Shasta County Information" subheading, below.

Agricultural resources that can be damaged by wildlife include hay, pasture, vegetable and fruit crops, apiaries. Predation by wildlife can also adversely affect backyard and hobby animals. Examples of species that cause damage are: badger and ground squirrel to hay fields, crops, and pastures; coyote, raccoon, and ground squirrel to vegetable and fruit crops; black bears to bees, hives, and honey; ground squirrel to pastures, rangeland, and fruit, nut, and row crops; and fox, coyote, or bobcat on small enterprise operations with rabbits, chickens, sheep, goats, or other animals. Birds and other wildlife such as feral swine can damage and consume row crops, orchards, and vineyards.

Public Health and Safety

Wildlife that becomes habituated to human presence can pose a risk to human health and safety through direct contact (e.g., bites/attacks) and disease transmission (e.g., zoonotic disease, food contamination). Zoonotic diseases are one of the leading infectious causes of illness and death to humans. For example, *Escherichia coli* (a human pathogen) in bagged spinach killed three people and sickened many others in a nationwide outbreak in 2007 was likely related to the presence of feces from wildlife in a spinach field in San Benito County (Jay et al. 2007). Rabies is frequently carried in raccoons, skunks, bats, foxes, and other animals. Plague can be carried in coyotes and other predators, and in ground squirrels and other rodents. Wildlife can also result in odor and noise nuisances (skunks and raccoons under houses). The species most commonly involved in human health and safety conflicts in California are coyotes, mountain lions, black bears, beavers, raccoons, and striped skunks. Coyotes and other mammals on airport property can damage aircraft, affect flights, and threaten human safety if present on runways during takeoffs and landings.

Property

Wildlife living close to humans can damage homes and roofs while attempting to access human dwellings for shelter or food. Beavers may damage or destroy roads, homes, and other infrastructure while altering watercourses and plugging water control features. Wild turkeys may damage lawns and vehicles foraging and displaying during the breeding season. Feral swine can cause substantial damage to row crops and landscaping. Reports of coyote attacks on pets have steadily risen in the past several years in California (Timm et al. 2004). Many cases were reported to veterinarians and animal regulation organizations where APHIS-WS does not have a program in place and receives no record of the calls (Baker and Timm 1998).

Natural Resources

Predation from abundant common predatory species may act as a limiting factor in the recovery of sensitive, threatened, or endangered species (e.g., coyote predation on snowy plovers). The behavior of some species may cause damage to sensitive habitats (e.g., beaver and feral swine damage to restoration or conservation lands). Although the APHIS-WS IWDM program has activities that address natural resources protection, APHIS-WS does not perform activities to protect natural resources in Shasta County with County funds.

Wildlife Damage Management

Federal Wildlife Damage Management Program Authority

The primary statutory authorities for the APHIS-WS IWDM program are the Animal Damage Control Act of 1931 (7 United States Code Section 426-426c; 46 Stat 1468) and the Rural Development, Agriculture, and Related Agencies Appropriations Act (Public Law 100-202, Dec. 22, 1987, Stat 1329-1331; 7 United States Code 426c, as amended in the Fiscal Year 2001 Agriculture Appropriations Bill). The APHIS-WS program operates under the provisions of numerous laws, including the National Environmental Policy Act of 1969, as amended, and the federal Endangered Species Act of 1973, as amended.

APHIS-WS receives both federal appropriations funding and cooperator-provided funds to sustain its operations. APHIS-WS uses federal-appropriated funds for its national and regional office operations, and for its research functions. It funds state office operations through a combination of federal-appropriated and cooperator-provided funds.

Services provided by APHIS-WS personnel are conducted in compliance with its Wildlife Services Policy Manual (WS Policy Manual), which provides guidance to APHIS-WS personnel conducting official activities by addressing national policy and via a series of WS Directives.[1] Services are also conducted in compliance with applicable federal, state, and local laws and regulations (APHIS-WS Directive 2.210 [USDA 2009]).

Overview of Integrated Wildlife Damage Management Approach

APHIS-WS uses an adaptive IWDM approach, sometimes called integrated pest management (WS Directive 2.105 [USDA 2004]), in which a combination of methods are considered and may be used or recommended to reduce damage. The purposes of these methods are to alter the behavior of or repel the target species, physically prevent wildlife access to sensitive resources, remove specific damage-causing individuals from the population after other reasonable deterrent methods are attempted, or control invasive exotic species populations in order to eliminate or reduce the potential for loss or damage to resources.

APHIS-WS Decision Model

When selecting a specific course of action, the WS Policy Manual requires that a range of management approaches and alternatives be evaluated. To do this, APHIS-WS managers, biologists, and specialists use the manual when responding to requests for assistance. The Decision Model (see Figure A-1) determines the appropriate damage management method(s) to implement based on several factors: (1) species responsible, (2) magnitude, geographic extent, frequency, historical damage, and duration of the problem, (3) status of target and nontarget species, (4) environmental conditions, (5) potential biological, physical, economic, and social impacts, (6) potential legal restrictions, and (7) costs of damage management options (WS Directives 2.101 (USDA 2009) and 2.201 [USDA 2014]).

[1] The entire WS Policy Manual and WS Directives are available at https://www.aphis.usda.gov/aphis/ourfocus/wildlifedamage/sa_ws_program_directives/ct_ws_directives.

ATTACHMENT A: PROJECT BACKGROUND

FIGURE A-1: APHIS-WS DECISION MODEL

The APHIS-WS field specialists conducting service visits in response to calls treat each situation individually based on the facts at hand. A typical call may involve an investigation to positively identify the species involved and to understand the scope of the problems occurring; development of a plan of action for the property owner to mitigate the problem using reasonable nonlethal means; and if necessary, take (i.e., the removal by lethal means) of an animal. Confirmed losses are verified by APHIS-WS specialists during a site visit. APHIS-WS specialists not only confirm that the loss was caused by predators but also which predator species was responsible.

Before wildlife damage management is conducted, a Work Initiation Document (WID) must be signed by APHIS-WS and the landowner or manager. APHIS-WS cooperates with land and wildlife management agencies when appropriate and as requested to combine efforts to effectively and efficiently resolve wildlife damage problems in compliance with all applicable federal, state, and local laws and MOUs between APHIS-WS and other agencies.

IWDM methods may include alteration of cultural practices and habitat and behavioral modification to prevent or reduce damage. The reduction of wildlife damage may also require that offending animal(s) be removed through lethal means. However, killing the offending animal(s) is a last resort and is only one strategy considered by APHIS-WS in developing management approaches. The methods that may be used by APHIS-WS personnel, as provided under its directive and guidance, are described at the end of this document.

The APHIS-WS program does not seek to eradicate any species, regardless of legal status, or result in take that would substantially reduce species' populations. It does not "target" certain species for reduction.

Results of 2014 Federal Audit of APHIS-WS Wildlife Damage Management Activities

In 2014, the U.S. Office of the Inspector General (OIG) completed an audit of APHIS-WS wildlife damage management activities for the period fiscal year 2012 through the second quarter of 2014 (USDA 2015b).[2] In its report, OIG noted that "WS wildlife damage management activities can be controversial among the general public, animal rights organizations, and conservation groups. WS has received considerable media attention due to alleged unsanctioned activities conducted by some of its field employees. OIG has received numerous hotline complaints and letters from the public outlining concerns about WS employees and wildlife management activities. The complaints by animal rights organizations have included the following concerns: (1) WS uses indiscriminate methods to kill animals, which result in the killing of animals that are not the target of WS' wildlife management activities; (2) animals suffer because WS' wildlife management activities do not result in immediate death; and (3) WS wildlife management activities are not transparent. The organizations that raised these complaints, as well as some members of Congress, requested that [OIG] perform an audit of WS' wildlife management activities."

As described in the audit report, the objectives of the audit were to: 1) determine whether wildlife damage management activities were justified and effective; 2) assess the controls over cooperative agreements; 3) assess WS's information system for reliability and integrity; and 4) follow up on implementation of prior audit recommendations concerning hazardous materials. California was one of five state offices selected for field site visits as part of the audit. California was selected because it is one of the states with large allocated budgets for fiscal years 2012 and 2013 and it was a state with the most kills of selected predators such as coyotes.

OIG auditors interviewed property owners and state game and wildlife officials, observed specialists in the field, reviewed cooperative service agreements to determine if relevant regulations, policies, and procedures were followed, and reviewed APHIS-WS's recordkeeping system, Management Information System (MIS), for monitoring wildlife damage management and predator control activities. OIG reviewed state and federal laws as well as state and local requirements to determine whether APHIS-WS was in compliance with those requirements and therefore justified in its actions. OIG also examined APHIS-WS policies and procedures (USDA 2015b).

The OIG concluded that APHIS-WS wildlife damage management activities and its system for tracking controlled materials complied with all applicable federal and state laws and regulations. The audit report did not identify any findings or recommendations associated with those areas. Auditors found that the MIS contained inaccurate information, which resulted in inflated wildlife control numbers and transmission of inaccurate data to the public. Another finding concerned WIDs ("Form 12s"). APHIS-WS agreed with the audit's findings and recommendations and is implementing the recommended improvements to the MIS (USDA 2015b; USDA 2015d).

The MIS data is used extensively by APHIS-WS for evaluating its program, and these data are also used in this Initial Study. Although some deficiencies were found by the OIG, the data compiled and maintained by APHIS-WS represent the best available information with regard to the type, detail, and amount of data with respect to reporting information about resources affected, value of damages, the types of wildlife management services provided by APHIS-WS, methods for control, and the numbers of intentional and unintentional take of species.

[2] The full report, which describes the audit methodology in detail, is available at https://www.usda.gov/oig/webdocs/33601-0002-41.pdf.

Cooperator Agreements

APHIS-WS Directives 3.101 and 3.102 (USDA 2013; 2015) authorize APHIS-WS to enter into cooperative agreements with federal agencies, states, local jurisdictions, individuals, and public and private agencies, organizations, and institutions to reduce the risks of injurious animal species and/or nuisance mammals and birds and those mammal and bird species that are reservoirs for zoonotic diseases. Shasta County is an example of a cooperator. However, the directives do not require that local jurisdictions such as Shasta County enter into cooperative agreements. The decision to enter into a cooperative agreement with APHIS-WS is at the discretion of each entity.

CSA terms, agreements for control, memorandums of understanding (MOU), and other documents establish the need for the requested work, legal authorities allowing the requested work, and the responsibilities of APHIS-WS and its cooperators. If a cooperative agreement is in place, APHIS-WS responds to requests for assistance when valued resources are lost, damaged, or threatened by wildlife. Responses can be in the form of technical assistance or operational damage management. The degree of APHIS-WS's involvement varies, depending on the complexity of the wildlife problem.

APHIS-WS IWDM Program Activities in California

Since 1916, APHIS-WS has operated in partnership with federal, (U.S. Forest Service, U.S. Fish and Wildlife Service (USFWS), Bureau of Land Management [BLM]), state (California Department of Food and Agriculture [CDFA], California Department of Fish and Wildlife [CDFW], California Department of Public Health [CDPH]), and local (County governments and regional authorities) agencies to respond to requests for assistance on wildlife damage-related issues throughout California. APHIS-WS has current MOUs with CDFW, CDFA, and CDPH (USDA 2015a: 11). Currently, APHIS-WS has agreements with 34 of the state's 58 counties to conduct wildlife damage management activities on public or private property when the property/resource owners or managers request assistance.

APHIS-WS operational activities at the state level provide wildlife damage control assistance in four major areas: (1) agricultural resources, which includes protecting livestock from predators and alleviating bird damage at aquaculture facilities; (2) natural resources, which includes protecting threatened and endangered species and managing invasive species; (3) property, which includes protecting homes, landscaping, and industrial facilities from damage by mammals and birds; and (4) public safety and health, which includes reducing the risk of aircraft strikes of wildlife around airport runways as well as reducing and monitoring the spread of wildlife diseases to livestock, pets, or humans.

In California, there are five APHIS-WS districts: North District, Sacramento District, Central District, San Luis District, and South District. Shasta County is in the North District.

<u>Environmental Review of APHIS-WS Activities in California</u>

In order to implement its services in California, and in Shasta County, specifically, APHIS-WS has prepared the following environmental reviews for its activities:

- Pre-decision Environmental Assessment for Predator Damage Management for the Protection of Livestock and Property in the California APHIS-WS North District (USDA 2015a)

- Pre-decision Environmental Assessment for Mammal Damage Management for the Protection of Human Health and Safety, Property, Agricultural Resources and Natural Resources in California (USDA 2005)

In 2018, APHIS-WS entered into a memorandum of understanding with the California Department of Food and Agriculture (CDFA) to prepare a joint environmental impact statement/ environmental impact report that will address APHIS-WS activities at the statewide level. As of April 2019, the joint document has not been completed.

ROLE OF OTHER AGENCIES

California Department of Fish and Wildlife

CDFW has management authority and responsibility for resident wildlife, and conducts management programs for furbearers, game species, and nongame mammals. CDFW can request assistance from APHIS-WS for any species under its primary responsibility. APHIS-WS may provide recommendations and referral of callers to CDFW, as well as operational management assistance with the implementation of wildlife damage management upon request and as permitted or otherwise authorized by CDFW.

APHIS-WS is not authorized to issue take permits for wildlife. Species such as mountain lion and bobcat as well as all game species (feral swine, deer, elk, black bear, beaver, turkey, etc.) require a depredation permit. Such permits are issued to individual landowners by CDFW when criteria for a permit are met. Under the cooperative agreement, APHIS-WS may act on the permit at the permit holder's request.

Services provided by APHIS-WS to the County under the cooperative agreement are required to be implemented in cooperation with CDFW and in accordance with applicable regulations of that agency pertaining to wildlife damage management. CDFW does not allow for the relocation of wildlife causing damage. Except in limited cases where CDFW makes an individual exemption, CDFW dictates that the disposition of all wildlife captured for resource protection must be euthanized. Relocation of wildlife known to cause resource damage in one area does not correct the damaging behavior and can spread the problem to a new area. Relocation can also spread disease to other wildlife and domestic species.

CDFW has completed environmental documents in accordance with CEQA for evaluating its hunting and trapping regulations. The most recent documents were completed in 2004: *Draft Environmental Document, Sections 265, 460-467, and 472-480, Title 14, California Code of Regulations Regarding Furbearing and Nongame Mammal Hunting and Trapping*; and *Final Environmental Document, Sections 250, 250.5, 251, 251.5, 252, 257, 257.5, 307-310, 310.5, 311, and 354, Title 14, California Code of Regulations Regarding Resident Small Game Mammal Hunting*. CDFW concluded that even with APHIS-WS take, assumed to be 33 percent of statewide take, and in conjunction with other related past, present, and reasonably foreseeable future projects identified in the cumulative analysis, cumulative impacts would not be significant (CDFG 2004: 32-35, 47, 95-111). Additional information on the scope of the analysis is provided in Checklist Item IV, Biological Resources, in the Initial Study.

Shasta County Animal Regulations Office

The Shasta County Sheriff's Office Animal Regulations Office handles concerns regarding stray animals, animal cruelty, animal bites, injured or diseased animals, dangerous or vicious dogs, nuisance barking, and kennel inspections. The office does not handle incidents involving wildlife damage.

DIRECT CONTROL METHODS

Nonlethal Controls

APHIS-WS may recommend nonlethal control methods to resource owners. Those methods and their associated limitations are described at the end of this document. Many nonlethal methods may be safely

used by resource owners (e.g., animal husbandry practices, exclusion [fencing/penning], and frightening devices (e.g., lights)). However, the current federal program does not allow for federal funds to be used in a cost-share program to provide materials (e.g., fencing or fladry) or resources (guard animals) directly to resource owners for use by and for the benefit of private resource owners. Some methods must be used only by trained professionals (e.g., pyrotechnics). Other nonlethal methods have the potential to result in unintentional effects on species that are protected by federal and/or state law. Shasta County staff would not be responsible for determining the nonlethal methods to be used by private parties.

Lethal Controls

The lethal control of animals is authorized under APHIS-WS Directive 2.505 (USDA 2011). A variety of methods for removing a target animal species are available in California. Those methods are described at the end of this document. These descriptions are provided for disclosure purposes. The descriptions herein also indicate which methods APHIS-WS may not use in Shasta County because they are no longer allowed. As with nonlethal methods, Shasta County would not be responsible for determining the methods to be used.

SHASTA COUNTY INFORMATION

Agricultural Resources

Table A-1 summarizes information about crop and livestock production in Shasta County for the period 2007-2017 as reported in the Agricultural Commissioner's Office annual reports (Shasta County, 2010, 2013, and 2017). Between 2007 and 2017, crop production (fruits and nuts, nursery stock, field crops, and apiaries,) have accounted for approximately one-half of the County's total production value. Livestock production accounts for approximately 15 to 20 percent of total production. No analysis of these data is required for purposes of environmental review under CEQA.

Loss/Damage Data

Table A-2 summarizes confirmed damages caused by wildlife from 2007 to 2017 by resource category (crops, livestock, other agricultural resources, natural resources and property) and whether the damage was caused by mammal species or avian species. The table also includes data for natural resources protection, although the CSA is not used for that purpose, and the values are provided for informational purposes. Not all resource, property, or land owners who experience damage from wildlife report the damage or request assistance. APHIS-WS specialists do not attempt to locate every head of livestock reported by ranchers to be killed by predators, but rather to verify sufficient losses to determine whether a problem exists that requires a management action. Confirmed losses are verified by APHIS-WS specialists during a site visit. APHIS-WS specialists not only confirm that the loss was caused by predators but also which predator species was responsible. Because only a fraction of the damage or loss is reported to or can be confirmed by APHIS-WS (similar to statewide loss data), wildlife damage loss in Shasta County is likely underestimated. As shown by the damage values, not all damage is associated with livestock loss. A considerable amount of damages is caused by avian species.

Table A-3 and Table A-4 present annual APHIS-WS staff-confirmed damage information for each year for damage caused by mammals and other non-avian species and avian species, respectively. As illustrated by the data, the total value of confirmed damages has varied widely from year to year. These data are provided for background and disclosure purposes and to inform the decision-making process. An analysis of loss/damage data is not required under CEQA nor is it necessary for purposes of evaluating the biological resources impacts of the proposed project.

As indicated by these data, black bears were responsible for over one-quarter of the damages to agricultural resources, natural resources, and property between 2007 and 2017. Table A-5 presents data specific to black bear damages. Because only a fraction of the total predation attributable to black bears is reported to or can be confirmed by APHIS-WS (similar to statewide loss data), loss in Shasta County is likely underestimated.

Wildlife Damage Management in Shasta County

The Shasta County Agricultural Commissioner's Office and APHIS-WS have cooperatively conducted wildlife damage management activities in the County since 1998. In February 2017, the Board of Supervisors approved a five-year CSA to remain in effect until June 30, 2021 or until either of the parties requests to terminate the agreement. In July 2018, the County terminated the CSA, which would have provided for services for the first year of the CSA. Prior to the County's decision to discontinue its agreement with APHIS-WS in July 2018, the last annual work and financial plan approved under the current CSA was approved by the Board of Supervisors in 2017 for fiscal year 2017-18.

As part of entering into cost-share agreements with cooperators, APHIS-WS prepares a budget for the total cost of services, which includes the anticipated number of personnel hours, equipment, and expenses. For fiscal year 2017-18, the County authorized funding for up to approximately $122,000, which was approximately 80 percent of the total cost of services to be provided by APHIS-WS (USDA 2017). Previous years were slightly lower.

The previous CSA work and financial plan and the current CSA work and financial plan specific the maximum number of hours to be spent by APHIS-WS personnel. Previous work and financial plans used capped number of hours to be funded under the work and financial plan at approximately 3,600, with little variation between years.

Nearly 60 percent of the land in the County is privately owned. Under previous CSAs, this is where most of the work has been performed. APHIS-WS has also responded to requests from private ranchers leasing U.S. Bureau of Land Management (BLM) land for grazing, so some work has performed on federal land but for that purpose only. No work has been performed on tribal lands. A limited amount of work has been performed at County-managed airports.

ATTACHMENT A: PROJECT BACKGROUND

TABLE A-1: SHASTA COUNTY TOTAL CROP, TIMBER, AND LIVESTOCK PRODUCTION VALUE

Year	Fruits and Nuts ($)	Nursery Stock ($)	Field Crops ($)	Apiary ($)	Total Crops ($)	Timber and Forest Products ($)	Livestock ($)	Total Crops + Timber + Livestock ($)	Crops as percent of total	Livestock as percent of total
2007	2,488,400	10,817,200	33,509,100	5,565,200	52,379,900	67,404,866	22,163,700	141,948,466	36.9%	15.6%
2008	1,789,500	9,189,300	37,322,000	5,272,800	53,573,600	56,846,995	20,440,500	130,861,095	40.9%	15.6%
2009	2,770,900	8,127,000	33,218,500	5,130,400	49,246,800	7,056,270	19,921,900	76,224,970	64.6%	26.1%
2010	4,259,000	9,182,000	29,135,000	5,430,000	48,006,000	39,587,093	22,690,000	110,283,093	43.5%	20.6%
2011	3,969,000	7,236,000	34,757,000	5,795,000	51,757,000	40,394,202	24,571,000	116,722,202	44.3%	21.1%
2012	3,469,000	8,852,000	35,247,000	5,353,000	52,921,000	51,428,938	24,320,000	128,669,938	41.1%	18.9%
2013	6,402,000	6,369,000	38,463,000	6,646,000	57,880,000	60,627,807	23,348,000	141,855,807	40.8%	16.5%
2014	7,217,000	5,182,000	38,890,000	7,383,000	58,672,000	55,957,730	28,965,000	143,594,730	40.9%	20.2%
2015	5,518,000	6,579,000	33,034,000	7,900,000	53,031,000	47,135,749	27,884,000	128,050,749	41.4%	21.8%
2016	4,010,000	14,347,000	33,023,000	8,777,000	60,157,000	40,077,695	20,976,000	121,210,695	49.6%	17.3%
2017	5,474,000	12,181,000	34,800,000	10,356,000	62,811,000	41,897,540	21,927,000	126,635,540	49.6%	17.3%

Source: Shasta County 2010, 2013, and 2017

TABLE A-2: SHASTA COUNTY CONFIRMED WILDLIFE DAMAGES SUMMARY 2007-2017

Year	Agriculture Field Crops	Agriculture Livestock	Agriculture Other - Hives	Natural Resources	Property	Total Damages Confirmed by APHIS-WS
Total all confirmed damages all species over 11-year period	**$838,071**	**$202,131**	**$356,652(a)**	**$27,627(b)**	**$139,495**	**$1,563,976**
Percent caused by mammals and other non-avian species	17%	100%	100%	100%	99%	
Percent caused by avian species over 11-year period	83%	0%	0%	0%	1%	
Mammals and Other Non-Avian Species						
Total confirmed damages from mammals and other over 11-year period	$138,692	$202,131	$356,652(a)	$27,627(b)	$137,995	$863,097
Primary mammal species causing damage	Beaver: 47% Feral Swine: 26% Muskrat: 25%	Mountain Lion: 46% Coyote: 21% Black Bear: 19%	Black Bear: 99.9% Racoon: 0.1%	Black Bear: 73% Muskrat: 20%	Beaver: 31% Muskrat: 30% Black Bear: 14% Coyote: 13%	
Avian Species						
Total confirmed damages from avian species over 11-year period	$699,379	-	-	-	$1,500	$700,879
Primary avian species causing damage	American Coots: 56% Red-Winged Blackbird: 44%	N/A	N/A	N/A	Acorn Woodpecker: 100%	

Notes:
(a) Wildlife damages to hives includes damages to bees, consumption of honey, and damages to hive structures.
(b) Natural resources damages are predominantly from wildlife damage to aquaculture activities.
Source: USDA 2019 (see Exhibit A, Table A-1)

ATTACHMENT A: PROJECT BACKGROUND

TABLE A-3: SHASTA COUNTY CONFIRMED DAMAGE CAUSED BY MAMMALS AND OTHER NON-AVIAN SPECIES 2007-2017

Year	Agriculture Field Crops	Agriculture Livestock	Agriculture Other - Hives	Natural Resources	Property	Total Damages Confirmed by APHIS-WS
2007	$500	$6,405	$11,000	-	$2,050	$19,955
2008	-	$6,960	$1,200	-	$3,000	$11,160
2009	$1,400	$10,750	$16,500	-	$18,850	$47,500
2010	$500	$15,550	$8,450	$15,125	$34,635	$74,260
2011	-	$29,680	$41,100	$5,652	$7,985	$84,417
2012	-	$20,948	$26,349	-	$13,800	$61,097
2013	$84,980	$36,023	$27,439	-	$14,850	$164,793
2014	$50,616	$24,448	$28,771	$5,750	$17,450	$125,535
2015	$60	$17,835	$33,748	$1,100	$18,775	$71,518
2016	$635	$21,033	$89,539	-	$4,750	$115,983
2017	-	$12,472	$72,552	-	$1,850	$86,875
Total confirmed damages from mammals and other non-avian species over 11-year period	$138,692	$202,131	$356,652	$27,627	$137,995	$863,097
Percent of total over 11-year period	16%	24%	41%	3%	16%	100%
Total all confirmed damages all species over 11-year period	$838,071	$202,131	$356,652(a)	$27,627(b)	$139,495	$1,563,976
Percent of total of all confirmed damages all species over 11-year period	53%	13%	23%	2%	9%	100%

Notes:
(-) indicates $0 damage value
(a) Wildlife damages to hives includes damages to bees, consumption of honey, and damages to hive structures.
(b) Natural resources damages are predominantly from wildlife damage to aquaculture activities.
Source: USDA 2019 (see Exhibit A, Table A-2)

TABLE A-4: SHASTA COUNTY CONFIRMED DAMAGE CAUSED BY AVIAN SPECIES 2007-2017

Year	Agriculture Field Crops	Agriculture Livestock	Agriculture Other - Hives	Natural Resources	Property	Total Damages Confirmed by APHIS-WS
2007	-	-	-	-	-	-
2008	-	-	-	-	-	-
2009	-	-	-	-	-	-
2010	-	-	-	-	-	-
2011	$1,500	-	-	-	-	$1,500
2012	-	-	-	-	-	-
2013	$136,663	-	-	-	-	$136,663
2014	$122,211	-	-	-	$1,500	$123,711
2015	$101,843	-	-	-	-	$101,843
2016	$177,322	-	-	-	-	$177,322
2017	$159,840	-	-	-	-	$159,840
Total confirmed damages from avian species over 11-year period	$699,379	-	-	-	$1,500	$700,879
Percent of total over 11-year period	>99%	0%	0%	0%	<1%	100%
Total all confirmed damages all species over 11-year period	$838,071	$202,131	$356,652(a)	$27,627(b)	$139,495	$1,563,976
Percent of total of all confirmed damages all species over 11-year period	53%	13%	23%	2%	9%	100%

Notes:
(-) indicates $0 damage value
(a) Wildlife damages to hives includes damages to bees, consumption of honey, and damages to hive structures.
(b) Natural resources damages are predominantly from wildlife damage to aquaculture activities.
Source: USDA 2019 (see Exhibit A, Table A-3)

ATTACHMENT A: PROJECT BACKGROUND

TABLE A-5: SHASTA COUNTY CONFIRMED BLACK BEAR DAMAGE BY RESOURCE CATEGORY 2007-2017

Year	Field Crops	Livestock	Agriculture Other - Hives	Natural Resources	Property	Total Black Bear-Caused Damages	Total All Damage, All Species, All Resource Categories
2007	-	$660	$11,000	-	$860	$12,520	$19,955
2008	-	$2,500	$1,200	-	$1,500	$5,200	$11,160
2009	$1,400	$6,120	$16,500	-	$1,200	$25,200	$47,500
2010	$500	$750	$8,450	$15,125	$1,350	$26,175	$74,260
2011	-	$7,300	$40,700	$5,000	$1,725	$54,725	$85,917
2012	-	$7,862	$26,349	-	$6,000	$40,211	$61,097
2013	-	$265	$27,439	-	$2,600	$30,304	$301,456
2014	-	$622	$28,771	$250	$5,250	$34,893	$249,246
2015	-	$1,343	$33,748	-	-	$35,091	$173,361
2016	-	$5,969	$89,539	-	$100	$95,608	$293,305
2017	-	$4,950	$72,552	-	-	$77,502	$246,715
Total confirmed black bear damage over 11 years	**$1,900**	**$38,341**	**$356,248(a)**	**$20,375(b)**	**$20,585**	**$437,449**	**$1,563,972**
Percent of total Black Bear damage over 11 years	<1%	9%	81%	5%	5%	100%	
Primary resources experiencing loss	Produce: $1,900 (100%)	Cattle/calves: $26,628 (69%)	Hives, Bees, Honey: $356,248 (100%)	Aquaculture (rainbow trout): $20,125 (98%)	Residential and Non-residential Buildings: $13,000 (63%)		
Percent of total damage, all species, over 11 years	<1%	2%	23%	1%	1%	28%	100%

Notes:
(-) indicates $0 damage value
(a) Wildlife damages to hives includes damages to bees, consumption of honey, and damages to hive structures.
(b) Natural resources damages are predominantly from wildlife damage to aquaculture activities.
Source: USDA 2019 (compiled from Exhibit A, Table A-2)

Some of the wildlife damage management performed by APHIS-WS in Shasta County is for protection of threatened and endangered species. The threatened and endangered species projects have not been funded by the County under former CSAs, nor would they be under the proposed CSA.

Technical Assistance

Technical assistance includes recommendations for implementing various techniques for protecting resources from damage caused by wildlife. Technical assistance projects associated with specific species in Shasta County for the 2007–2017 reporting period are shown in Table A-6. During the 11-year reporting period, APHIS-WS specialists in Shasta County performed nearly 2,000 technical assistance projects. Activities included individual phone calls, field visits, presentations, and informational pamphlets and literature. Nearly 90 percent of all technical assistance projects were associated with mammal species. As indicated by these data, black bear, mountain lion, coyote, muskrat, skunk, and beaver were the mammal species resulting in the most requests for technical assistance, with blackbirds comprising the greatest number for avian species. The data in Table A-6 only provides information about technical assistance. It does not indicate the number of wildlife species removed by lethal means. The reader is referred to Checklist Item IV, Biological Resources, and Tables 2 and 3 therein for additional information and analyses regarding species take data and information about these species. Some species, such as feral dogs, Virginia opossum, and red fox, are nonnative species. Feral swine is a nonnative invasive species. The data presented in Table A-6 includes all technical assistance projects regardless of whether they were performed under the CSA or through agreements with private parties. Not all technical assistance projects listed in Table A-6 resulted in take by lethal methods. The Environmental Setting subsection of Checklist Item IV, Biological Resources, presents comprehensive take data for Shasta County.

Table A-7 summarizes information about the number of hours spent on APHIS-WS activities in the County for the same 11-year period. As illustrated by the data, the number of hours is relatively consistent between years, and the number of hours spent by staff was under the maximum hours capped in the work plan and financial plan. Table A-7 also provides a summary of take data under the direct control category for the same timeframe. (The reader is referred to Tables 2 and 3 in Checklist Item IV, Biological Resources, in the Initial Study for detailed information.) This comparison shows that there is not a direct correlation between the number of wildlife species taken for agricultural resources, public health and safety, and property protection and the number of hours spent by APHIS-WS personnel on direct control activities.

Between 2007 and 2017, APHIS-WS provided technical assistance to resource owners on private land totaling 360,827 acres (an annual median of approximately 22,000 acres). Work was also performed on approximately 285,000 acres on BLM land where there are private grazing leases (an annual median of approximately 16,500 acres) (USDA 2019 [see Exhibit A, Table A-4]). However, APHIS-WS does not implement its services on the total number of acres. When a WID is signed by the requesting party, the agreement applies to the entire acreage of the parcel(s) for which services are requested. In some cases, this could be hundreds or thousands of acres. The total annual acreage reflects the sum of all parcel acreages for which the WID has been signed. Thus, the "on-the-ground" impact of services is limited in geographic scope to only those specific locations on a property where the wildlife damage is occurring and where control services are actually provided.

For purposes of the impact analysis in the context of evaluating potential impacts on species populations resulting from take via lethal methods, the historical technical assistance data (Table A-6) and hours worked (Table A-7) combined with mammal and avian species take data presented in Tables 2 and 3 in Checklist Item IV, Biological Resources, respectively, are a reasonable indicator of future activity levels under the proposed CSA.

Nonlethal Methods

Some producers in the County use one or more nonlethal methods as common practice (e.g., fencing, guard animals). An APHIS-WS field specialist may recommend certain nonlethal practices as part of the technical assistance services provided to a requestor. Producers in Shasta County may use nonlethal methods at their discretion and are not funded by the County's agreement with APHIS-WS. Producers are not required under any federal, state, or local regulation to report the type(s) of methods they use, and it is the producers, not APHIS-WS or the County, who are responsible for monitoring the efficacy of various methods in reducing damage to agricultural resources or property on private lands. There is no requirement that producers or property owners report data about nonlethal method use or cost/benefit information to the County or APHIS-WS.

Cost/Benefit of APHIS-WS Direct Control Methods in Shasta County

CEQA Considerations

The following discussion regarding costs and benefits of APHIS-WS services is provided for purposes of disclosure and to aid the decision-making process. It does not require analysis under CEQA, nor is an environmental document required to resolve concerns about this topic under CEQA because it is an economic consideration. However, to the extent that implementation of the activities performed by APHIS-WS under agreement with the County could result in the removal of animals by lethal methods, this Initial Study does evaluate what the environmental impact would be on species populations, pursuant to CEQA Guidelines Section 15131 (Economic and Social Effects). This analysis is presented in Checklist Item IV, Biological Resources.

Cost/Benefit Considerations

APHIS-WS has prepared cost-benefit studies for its services in California (Shwiff et al. 2006) and for Shasta County specifically (Shwiff n.d.). These studies, which focused primarily on damage in agricultural areas, concluded that county investment in the cost-share program with APHIS-WS does provide a financial benefit by helping to reduce livestock losses. County staff is also aware of more recent studies suggesting that the costs and benefits of predator control (particularly by APHIS-WS) have not been adequately substantiated (for example, Rashford, Grant, and Strauch 2008; NRDC 2012). Key topics addressed by the authors of these more recent publications included how losses are calculated relative to the value of the resource protected, methodology for performing cost-benefit analyses, and that the economic and ecologic value of predators has not been accounted for in cost-benefit analyses to date. A key concern expressed by the authors is that the loss attributable to livestock predation is small relative to the production value and how that is accounted for in the cost-benefit analyses.

Under a CSA, APHIS-WS only conducts direct control methods in response to requests from residents and/or resource owners for purposes of agricultural resource, public health and safety, and property protection and when WID has been signed, as noted throughout this document. And, as explained elsewhere, direct control by lethal methods is used only as a last resort. Unlike examples of widespread predator control efforts noted in the above-referenced publications, APHIS-WS's scope of services in Shasta County is limited to targeting individual animals and only when it has been determined by the APHIS-WS field specialist it is the animal responsible for damage. The request for APHIS-WS assistance is at the discretion of the resource owner, and neither APHIS-WS nor the County have the authority to compel the resource owner to use (or not use) APHIS-WS services. For an individual resource owner with losses, it remains a personal decision whether the costs of wildlife damage management services provided APHIS-WS borne by Shasta County justify the benefit of having APHIS-WS provide assistance.

TABLE A-6: APHIS-WS TECHNICAL ASSISTANCE PROJECTS (2007-2017)

Species	Total Projects[a]
Mammals	
Mountain lion	585
Black bear	464
Coyote	280
Muskrat	153
Stiped skunk	95
Beaver	82
Raccoon	28
Feral swine	28
Grey fox	23
Bobcat	17
Feral dog	11
River otter	3
Botta's pocket gopher	3
Ground squirrel	3
Deer	2
Hare / Jackrabbit	1
Mole	1
Virginia opossum	1
Woodchuck	1
Subtotal Mammals	1,785
Birds	
Brewer's blackbird	29
Red-winged blackbird	44
Yellow-headed blackbird	28
American coot	36
Brown-headed cowbird	28
Northern flicker	1
Great horned owl	1
Feral pigeon	1
European starling	5
Wild turkey	3
Acorn woodpecker	2
Canada goose	1
Subtotal Birds	179
Other	
General/multi-species	10
Non-wildlife species	1
Subtotal Other	11
Total	**1,975**

Source USDA 2019 (see Exhibit A, Table A-5)
a Total: Number of calls, face-to-face interactions, and training/instructional sessions.

ATTACHMENT A: PROJECT BACKGROUND

TABLE A-7: NUMBER OF APHIS-WS HOURS BY TECHNICAL ASSISTANCE PROJECT CATEGORY

Category	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Total Hours
Direct control activities[a]	2,193	2,207	2,547	2,566	2,557	2,350	2,202	2,270	2,447	2,651	23,990
Percent of total	77%	72%	74%	71%	72%	67%	60%	62%	96%	76%	
Technical assistance[b]	232	340	192	170	159	221	280	200	213	123	2,130
Percent of total	8%	11%	6%	5%	4%	6%	8%	5%	8%	4%	
Administrative functions	433	531	695	894	825	912	1,205	1,213	882	727	8,317
Percent of total	15%	17%	20%	25%	23%	26%	33%	33%	35%	21%	
Total Hours	2,857	3,078	3,434	3,630	3,541	3,483	3,686	3,682	2,542	3,501	33,434

Notes:
a Includes field work, training, and equipment maintenance and repair.
B Includes consultation, outreach, and education
Source: USDA 2019 (see Exhibit A, Table A-6)

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Direct Control Methods

LETHAL CONTROL METHODS

The lethal control of animals by APHIS-WS is authorized under APHIS-WS Directive 2.505 (USDA 2011). A variety of methods for removing a target animal species are available in California. Those methods and their descriptions are presented below and are summarized from USDA 2015a: Appendix C [Wildlife Damage Management Methods Available for Use in California]). These descriptions are provided for disclosure purposes. Shasta County would not be responsible for determining the methods to be used. A formal risk assessment of APHIS-WS wildlife damage management methods documented low levels of risk associated with APHIS-WS personnel use of direct control methods. No public safety incidents are known to have been reported to the APHIS-WS program (USDA 2015a: 76). The lethal methods that have been used in Shasta County from 2007 to 2017 are identified in the take tables in Attachment B in this Initial Study.

Physical Capture and Control Methods Overview

APHIS-WS Directive 2.450 (USDA 2014) sets forth the guidelines for the use of certain types of capture devices by APHIS-WS field specialists. Policy 4 directs that the use of all traps, snares (cable device), and other capture devices must comply with applicable federal, state, and local laws and regulations; traps and trapping devices are not to be used unless appropriate authorization is granted by the landowner or designee; and all exceptions must be authorized by the director. Trapping regulations for California are specified in Section 465.5 of the California Fish and Game Code, and County-funded APHIS-WS activities in the County must adhere to those regulations.

WS Directive 2.450 requires that appropriate warning signs be posted on main entrances or commonly used access points to areas where traps or snares are in use. Signs must be routinely checked by APHIS-WS field specialists to ensure they are present, obvious, and readable. Appropriate notification signs must be posted within the direct line of sight of mountain lion foot-snare device sets. Capture devices are to be set where they would minimize the public's view of captured animals. In California, pursuant to Fish and Game Code Section 465.5, traps must be checked at least once daily, and each time traps are checked, all trapped animals must be removed.

Except in limited cases where CDFW makes an individual exemption, CDFW does not allow the relocation of wildlife causing damage. Relocation of wildlife known to cause resource damage in one area does not correct the damaging behavior and can spread the problem to a new area. Relocation can also spread disease to other wildlife and domestic species. CDFW dictates that the type of disposition of all wildlife captured for resource protection be euthanasia, unless it grants an individual exemption. Captured wildlife may be euthanized using a handgun or rifle, or by chemical means.

The types of capture methods are protective of threatened and endangered species. In the unlikely event a protected species is captured (e.g., in a trap, snare, or cage), APHIS-WS is required to make efforts to release it unharmed, unless the animal is injured and the field specialist has determined that it would not likely survive if released. Incidents of nontarget animal deaths are extremely low. This is due to the techniques used by the APHIS-WS field specialist to ensure that the correct location(s) for the target species is identified.

Padded Leg-Hold Traps

Padded leg-hold traps are used to capture animals such as coyote and bobcat. These traps are the most versatile and widely used tool for capturing these species. The padded leg-hold trap can be set under a wide variety of conditions. In some situations a "draw station," such as a carcass or large piece of meat, is used to attract target animals. In this approach, one to several traps are placed in the vicinity of the draw station.

APHIS-WS program policy prohibits placement of traps closer than 30 feet to the draw station. This provides protection to nontarget animals. These traps usually permit the release of nontarget animals. In California, padded leg-hold traps are used only for the protection of public health and safety and threatened and endangered species. They may not be used to capture animals for agricultural resources protection.

Cage Traps

A variety of cage traps are used in different wildlife damage control efforts. The most commonly known cage traps used in the current program are box traps, which are usually rectangular, made from wood or heavy gauge mesh wire. These traps are used to capture animals alive and can often be used where many lethal or more dangerous tools would be too hazardous. Cage traps usually work best when baited with foods attractive to the target animal. They are used to capture animals ranging in size from mice to deer, but are usually impractical in capturing most large animals. They are virtually ineffective for coyotes.

Cage traps are well suited for use in residential areas, and are the primary management tool used to remove small mammals such as raccoons, skunks, and opossums in urban areas. Traps are placed in the shade whenever feasible, and in California they must be checked at least once daily; each time traps are checked, all trapped animals must be removed, pursuant to California Fish and Game Code Section 465.5. Checking cage traps frequently is done to ensure that captured animals are not subjected to extreme environmental conditions. Some animals fight to escape from cage traps and become injured.

There are some animals that avoid cage traps and others that become "trap happy" and purposely get captured to eat the bait, making the trap unavailable to catch other animals.

Snares

Snares made of wire or cable are among the oldest existing control tools. They can be used effectively to catch most species but are most frequently used to capture coyotes. They have limited application but are effective when used under proper conditions. They are much lighter and easier to use than padded leg-hold traps and are not generally affected by inclement weather.

Snares may be employed as both lethal or live-capture devices depending on how and where they are set. Snares set to capture an animal by the neck are usually lethal but stops can be applied to the cable to make the snare a live-capture device. Snares positioned to capture the animal around the body can be useful live-capture devices. Also, most snares incorporate a breakaway feature to release nontarget wildlife and livestock. These snares can be effectively used wherever a target animal moves through a restricted lane of travel (e.g., crawls under fences, trails through vegetation, or den entrances). When an animal moves forward into the loop formed by the cable, the noose tightens and the animal is held.

The foot or leg snare is a spring-powered nonlethal device, activated when an animal places its foot on the trigger. In some situations, using snares to capture wildlife is impractical due to the behavior or animal morphology of the animal, or the location of many wildlife conflicts. Snares must be set in locations where the likelihood of capturing nontarget animals is minimized. The APHIS-WS program uses a leg snare with a built-in pan tension device that can be set to exclude capturing animals lighter than the target animal.

The catch-pole snare is used to capture or safely handle problem animals. This device consists of a hollow pipe with an internal cable or rope that forms an adjustable noose at one end. The free end of the cable or rope extends through a locking mechanism on the end opposite of the noose. By pulling on the free end of the cable or rope, the size of the noose is reduced sufficiently to hold an animal. Catch poles are used primarily to remove live animals from traps without danger to or from the captured animal.

The Collarum is a nonlethal, spring-powered, modified neck snare device that is primarily used to capture coyotes. It is activated when the animal bites and pulls a cap with an attractive lure, whereby the snare is projected from the ground up and over its head. As with other types of snares, the use of the Collarum device to capture coyotes is greatly dependent upon finding a location where coyotes frequently travel where the device can be set. Collarums must also be set in locations where the likelihood of capturing nontarget animals is minimized.

A number of specialized "quick-kill" traps are used in wildlife damage management work. A Conibear is an example of such a trap and is used mostly in shallow water or underwater to capture beaver. The Conibear consists of a pair of rectangular wire frames that close like scissors when triggered, killing the captured animal with a quick body blow. Other examples include snap-traps, such as those commonly used for small rodents such as rats and mice.

Hunting Dogs

Trained dogs are used primarily to locate, pursue, or decoy animals. Training and maintaining suitable dogs requires considerable skill, effort, and expense. There must be sufficient need for dogs to make the effort worthwhile.

Shooting

Shooting is frequently performed in conjunction with calling particular predators such as coyotes, bobcats, and fox. Trap-wise coyotes are often vulnerable to calling. Shooting is limited to locations where it is legal and safe to discharge firearms. Shooting may be ineffective for controlling damage by some species and may actually be detrimental to control efforts. Shooting is used selectively for target species but may be relatively expensive because of the staff hours required. The use of no-lead ammunition is required under California Fish and Game Code (Section 3004.5(b)).

The Airborne Hunting Act (Shooting from Aircraft Act) enacted by Congress in 1971 was added to the Fish and Wildlife Act of 1956 (Section 742j-1) and allows shooting animals from aircraft for certain reasons, including protection of wildlife, livestock, and human life as authorized by a federal- or state-issued license or permit.

Chemicals

Pesticides have been developed to reduce wildlife damage and are used because of their efficiency. Most chemicals are aimed at a specific target species, and suitable chemicals are not available for most animals. All pesticides used or recommended by the APHIS-WS program are registered with, and regulated by, the U.S. Environmental Protection Agency and the Department of Pesticide Regulation. APHIS-WS is required to use all chemicals according to label directions as required by these agencies and in accordance with WS Directive 2.401 (USDA 2009), which identifies steps that must be implemented to minimize risk to the environment and the public. Warning signs must be posted. The directive prohibits APHIS-WS from conducting operational activities involving pesticide use on private property where other persons are known to be using the same or a similar pesticide(s) intended for control of the same target species.

Fumigants or gases may be used to reduce burrowing wildlife by placing cartridges in the active burrows of target animals (sometimes referred to as denning), which results in oxygen depletion and carbon monoxide poisoning. Denning is not used in Shasta County.

Sodium cyanide is used in the M-44, a spring-activated, baited ejector device developed specifically to kill coyotes and other canine predators. The M-44 was banned in California in 2014 except as authorized on

sovereign tribal lands.[3] County funds would not be used for APHIS-WS activities on tribal lands, consistent with historic practices under the CSAs.

Immobilizing and Euthanizing Drugs

Several chemicals are authorized for immobilization and euthanasia by APHIS-WS. WS Directive 2.430 (USDA 2009) identifies approved drugs and sets forth requirements for using these substances, most of which are regulated by state and federal law (including the U.S. Food and Drug Administration and the Drug Enforcement Administration) because of their potential hazard to animals or humans. Within APHIS-WS, only properly trained personnel are certified to possess and use approved immobilizing and euthanizing agents. In urban and suburban locations, chemical techniques can be more appropriate for euthanizing wildlife. Chemical capture methods require specialized training and skill.

NONLETHAL CONTROL METHODS

APHIS-WS may recommend nonlethal control methods to resource owners. Those methods, descriptions, and their associated limitations are presented below and are summarized from USDA 2015a: Appendix C [Wildlife Damage Management Methods Available for Use in California]). Some nonlethal methods are appropriate and may be safely used by resource owners (e.g., animal husbandry practices, exclusion [fencing/penning], and frightening devices (e.g., lights)). However, some methods must be used only by trained professionals (e.g., pyrotechnics). Some nonlethal methods have the potential to result in unintentional effects on species that are protected by federal and/or state law. As with lethal methods, Shasta County would not be responsible for determining the nonlethal methods to be used.

Resource Management

Resource management includes a variety of practices that may be used by agriculture producers to reduce their exposure to potential wildlife depredation losses. Implementation of these practices is appropriate when the potential for depredation can be reduced without significantly increasing the cost of production or diminishing the resource owner's ability to achieve land management and production goals. Changes in resource management are recommended through the technical assistance extended to producers when the change appears to present a continuing means of averting losses.

Animal Husbandry

This general category includes modifications in the level of care and attention given to livestock, shifts in the timing of breeding and births, selection of less vulnerable livestock species to be produced, and the introduction of human custodians or guarding animals to protect livestock.

The level of care or attention given to livestock may range from daily to seasonal. Generally, as the frequency and intensity of livestock handling increases, so does the degree of protection. In operations where livestock are left unattended for extended periods, the risk of depredation is greatest. The risk of depredation can be reduced when operations permit nightly gathering so that livestock are inaccessible during the hours when predators are most active. This risk diminishes as age and size increase and can be minimized by holding expectant females in pens or sheds to protect births and by holding newborn livestock

[3] In OIG's 2014 audit of APHIS-WS, the audit report specifically noted: "The State of California banned the use of M-44 devices. While we were conducting site visits in California, we examined the hazardous materials records of WS' State and district offices, and of its field specialists. In addition, we conducted a physical inventory of WS' State, districts, and field specialists' hazardous materials inventories. We determined that WS in California did not use or maintain M-44 devices." (USDA 2015b: 9)

in pens for the first two weeks. Shifts in breeding schedules can also reduce the risk of depredation by altering the timing of births to coincide with the greatest availability of natural prey to predators or to avoid seasonal concentrations of migrating predators such as golden eagles.

The use of human custodians and guarding animals can also provide significant protection in some instances. The presence of herders to accompany bands of sheep on an open range may help ward off predators. Guard dogs have also proven successful in many sheep and goat operations. The supply of proven guarding dogs is generally quite limited, requiring that most people purchase and rear a pup. Therefore, there is usually a four- to eight-month period of time necessary to raise a guarding dog before it becomes an effective deterrent to predators. Because 25 to 30 percent of dogs are not successful, there is a reasonable chance that the first dog raised as a protector will not be useful. The effectiveness of guarding dogs may not be sufficient in areas where there is a high density of predators, where livestock widely scatter to forage, or where dog-to-livestock ratios are less than recommended. Guarding dogs often harass and kill nontarget wildlife.

Altering animal husbandry to reduce wildlife damage has many limitations. Nightly gathering may not be possible where livestock are in many fenced pastures and where grazing conditions require livestock to scatter. Hiring extra herders, building secure holding pens, and adjusting the timing of births is usually expensive. Furthermore, the timing of births may be related to weather or seasonal marketing of young livestock. The expense associated with a change in husbandry practice may exceed the savings.

Habitat Management

Some habitat can be managed to not produce or attract certain wildlife species. For example, when depredation cannot be avoided by careful crop selection or modified planting schedules, lure crops can sometimes be used to mitigate the loss potential. Lure crops are planted or left for consumption by wildlife as an alternative food source. This approach provides relief for critical crops by sacrificing less important or specifically planted fields. For lure crops to be successful, frightening techniques may be necessary in fields where crops are to be protected; wildlife should not be disturbed in sacrificial fields.

Limitations of habitat management as a method of reducing wildlife damage are determined by the characteristics of the species involved, the nature of the damage, economic feasibility, and other factors. Also, legal constraints may preclude altering particular habitats, particularly those that support threatened and endangered species, California species of special concern, critical habitat, or rare plants.

Establishing lure crops is expensive, requires considerable time and planning to implement, and may attract other unwanted species to the area, causing additional wildlife damage problems. Also, there are potential legal consequences regarding hunting near lure crops, which must be considered before lure crops or alternate foods are used.

Urban Design

Change in the architectural design of a building or a public space can often help to avoid potential wildlife damage. For example, selecting species of trees and shrubs that are not attractive to wildlife can reduce the likelihood of potential wildlife damage to parks, public spaces, or residential areas. Similarly, incorporating devices into architectural design that exclude wildlife can significantly reduce potential problems. Grids or screens that prevent birds from entering are an example.

Architectural changes are often more feasible if considered during the design stage, rather than after a facility is built. The consideration of wildlife conflicts is frequently overlooked in the construction of new buildings and facilities. Modifying structures or public spaces to remove the potential for wildlife conflicts

is often impractical because of economics or the presence of other nearby habitat features that attract wildlife.

Physical Exclusion

Physical exclusion methods restrict the access of wildlife to resources. These methods, including fences, sheathing, tree protectors, and entrance barricades, provide a means of appropriate and effective prevention of wildlife damage in many situations.

Fences are widely used to prevent damage to farm crops caused by rabbits and other wildlife. Predator exclusion fences constructed of woven wire or multiple strands of electrified wire are also effective in some areas, but fencing does have limitations. Even an electrified fence is not predator proof and the expense may exceed the benefit in most cases. Herd animals such as sheep may be protected through fencing/penning, as has been demonstrated in Marin County.

If large areas are fenced, the predators have to be removed from the enclosed area to make it useful. Some fences inadvertently trap, catch, or affect the movement of nontarget wildlife. It is not uncommon for coyotes to use fences to trap deer or antelope. As such, fencing large areas could result in unintended consequences on wildlife migratory corridors. Fencing may not be practical or legal in some areas (e.g., restricting access to public land). Predators deterred by fencing may move to another area where they could create new problems or exacerbate an existing one (i.e., predation would not necessarily be controlled, just relocated).

Entrance barricades of various kinds are used to exclude bobcats, coyotes, foxes, opossums, raccoons, or skunks from dwellings, storage areas, gardens, or other areas. Metal flashing may be used to prevent entry of small rodents into buildings.

Sheathing or tree protectors can be used in some situations to avoid damage to trees but may be impractical where there are numerous plants to protect.

Deterrents

Deterrents may effectively alter the behavior of the target animal to eliminate or reduce the potential for loss or damage to property. Most deterrent methods are used for birds. An important consideration for deterrent use is safety; some methods should be used only by trained professionals. In addition, some methods have a potential to affect nesting avian species.

Frightening Devices

The success of frightening methods depends on an animal's fear of and subsequent aversion to offensive stimuli. Once animals become habituated to a stimulus, they often resume their damaging activities. Persistent effort is usually required to consistently apply frightening techniques and then vary them sufficiently to prolong their effectiveness. Over time, some animals learn to ignore commonly used scare tactics. In many cases, animals frightened from one location become a problem at another. The effects of frightening devices on nontarget wildlife need to be considered. For example, special-status birds or birds protected under the Migratory Bird Treaty Act (MBTA) may be disturbed or frightened from nesting sites.

Electronic Distress Sounds

Distress and alarm calls of various animals have been used singly and in conjunction with other scaring devices to successfully scare or harass animals. Many of these sounds are available in digital format.

Animals react differently to distress calls; their use depends on the species and the problem. Calls may be played for short (few seconds) bursts, for longer periods, or even continually, depending on the severity of damage and relative effectiveness of different treatment or "playing" times. Some artificially created sounds also repel birds in the same manner as recorded "natural" distress calls. Calls are played back to the animals from either fixed or mobile equipment in the immediate or surrounding area of the problem.

Propane Exploders

Propane exploders operate on propane gas and are designed to produce loud explosions at controllable intervals. They are strategically located (elevated above the vegetation, if possible) in areas of high wildlife use to frighten wildlife from the problem site. Because animals are known to habituate to sounds, exploders must be moved frequently and used in conjunction with other scare devices. Exploders can be left in an area after dispersal is complete to discourage animals from returning. Similar to frightening devices, the effects of propane exploders on nontarget wildlife need to be considered. For example, special-status birds or birds protected under the MBTA may be disturbed or frightened from nesting sites.

Pyrotechnics

Pyrotechnic devices, such as shell crackers or scare cartridges fired from a shotgun, noise bombs, whistle bombs, racket bombs, rocket bombs fired from a flare pistol, firecrackers, rockets, and Roman candles, are used for dispersing animals. These methods are primarily used to disperse birds in crop fields. As with frightening devices and propane exploders, the effects of pyrotechnics on nontarget wildlife need to be considered. For example, special-status birds or birds protected under the MBTA may be disturbed or frightened from nesting sites.

Lights

A variety of lights, including strobe, barricade, and revolving units, can be used with mixed results to frighten birds. Brilliant lights, similar to those used on aircraft, are most effective in frightening night-feeding birds. These extremely bright-flashing lights have a blinding effect. Flashing amber barricade lights, like those used at construction sites, and revolving or moving lights may also frighten birds. However, most birds rapidly become accustomed to such lights and their long-term effectiveness is questionable. In general, the type of light, the number of units, and their location are determined by the size of the area to be protected and by the power source available.

Harassment

Scaring and harassment techniques to frighten animals are probably the oldest methods of combating wildlife damage. A number of sophisticated techniques have been developed to scare or harass wildlife from an area. The use of noise-making devices is the most popular and commonly used; however, other methods, including aerial hazing and visual stimuli, are also used. Harassment using vehicles, people, falcons, or dogs is used to frighten predators or birds from the immediate vicinity. Boats, planes, automobiles, and all-terrain vehicles are used as harassment methods. As with other wildlife damage management efforts, these techniques tend to be more effective when used collectively in a varied regime rather than individually.

Chemical Repellents

Chemical repellents are compounds that prevent consumption of food items or use of an area. They operate by producing an undesirable taste, odor, feel, or behavior pattern. Effective and practical chemical repellents need to be nonhazardous to wildlife; nontoxic to plants, seeds, and humans; resistant to weathering; easily applied; reasonably priced; and capable of providing good repelling qualities. The

reaction of different animals to a single chemical formulation varies, and for any species there may be variations in repellency between different habitat types. Chemical repellents are strictly regulated, and suitable repellents are not available for many wildlife species or wildlife damage situations.

Modification of Human Behavior

Many wildlife species adapt well to human settlements and activities, but their proximity to humans may result in damage to structures or threats to public health and safety. APHIS-WS field specialists may recommend alteration of human behavior to resolve potential conflicts between humans and wildlife. For example, APHIS-WS may recommend the elimination of feeding of wildlife that occurs in residential areas. Eliminating wildlife feeding and handling can reduce potential problems, but many people who are not directly affected by problems caused by wildlife enjoy wild animals and engage in activities that encourage their presence. It is difficult to consistently enforce no-feeding regulations and effectively educate all people concerning the potential liabilities of feeding wildlife.

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These reference materials are available for review upon request. To request or to review these items during normal business hours, please contact the Shasta County Department of Agriculture/Weights and Measures, 3179 Bechelli Lane, Suite 210, Redding, CA 96002 (telephone 530-224-4949.

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ATTACHMENT A
EXHIBITS

Confirmed wildlife damage summary CY 07-17

COUNTY	RESOURCE	CATEGORY	SUBCATEGORY	LOSS_REP_VER	TOTAL DAMAGES LOSS
SHASTA	BIRDS, SWANS, WILD (OTHER)	NATURAL RESOURCE	WILDLIFE	V	$652.00
	BUILDINGS, NON-RESIDENTIAL	PROPERTY	STRUCTURES	V	$6,050.00
	BUILDINGS, RESIDENTIAL	PROPERTY	STRUCTURES	V	$21,410.00
	CATTLE (ADULT)	AGRICULTURE	LIVESTOCK	V	$16,924.80
	CATTLE (CALVES)	AGRICULTURE	LIVESTOCK	V	$33,868.60
	CATTLE ADULT (BEEF)	AGRICULTURE	LIVESTOCK	V	$2,564.55
	CATTLE CALVES (BEEF)	AGRICULTURE	LIVESTOCK	V	$12,951.12
	DIKES/DAMS/IMPOUNDMENTS	PROPERTY	STRUCTURES	V	$23,375.00
	EQUINE, DONKEYS/BURROS	AGRICULTURE	LIVESTOCK	V	$2,090.00
	EQUINE, HORSES (ADULT)	AGRICULTURE	LIVESTOCK	V	$8,131.00
	EQUINE, HORSES (FOALS)	AGRICULTURE	LIVESTOCK	V	$2,788.00
	FEED, LIVESTOCK	AGRICULTURE	OTHER	V	$225.00
	FENCES	PROPERTY	STRUCTURES	V	$1,600.00
	FISH, TROUT, RAINBOW	NATURAL RESOURCE	AQUACULTURE	V	$20,125.00
	FISH, Z-(OTHER)	NATURAL RESOURCE	FISHERIES	V	$250.00
	FOOD ITEMS, NON-HUMAN *	PROPERTY	OTHER PROPERTY	V	$275.00
	FOWL, CHICKENS (OTHER)	AGRICULTURE	LIVESTOCK	V	$4,549.79
	FOWL, DUCKS (DOMESTIC)	AGRICULTURE	LIVESTOCK	V	$50.92
	FOWL, TURKEYS (DOMESTIC)	AGRICULTURE	LIVESTOCK	V	$679.80
	GARDENS, TRUCK	AGRICULTURE	FIELD CROPS	V	$60.00
	GOATS, ANGORA (KIDS)	AGRICULTURE	LIVESTOCK	V	$865.00
	GOATS, MEAT (ADULTS)	AGRICULTURE	LIVESTOCK	V	$3,519.08
	GOATS, MEAT (KIDS)	AGRICULTURE	LIVESTOCK	V	$105.12
	GOATS, Z-(OTHER ADULTS)	AGRICULTURE	LIVESTOCK	V	$48,511.59
	GOATS, Z-(OTHER KIDS)	AGRICULTURE	LIVESTOCK	V	$12,983.36
	GRAINS, RICE (WILD)	AGRICULTURE	FIELD CROPS	V	$765,180.00
	GRASSES/SOD	AGRICULTURE	FIELD CROPS	V	$69,796.00
	HAYFIELDS, ALFALFA	AGRICULTURE	FIELD CROPS	V	$1,135.44
	HIVES (BEES, HONEY, STRUCTURI	AGRICULTURE	OTHER	V	$356,651.70
	IRRIGATION DITCH/DRAINAGE S'	PROPERTY	STRUCTURES	V	$10,425.00
	IRRIGATION PIPE SYSTEM	PROPERTY	STRUCTURES	V	$500.00
	IRRIGATION, DRIP LINE	PROPERTY	STRUCTURES	V	$250.00
	LLAMAS (ALL)	AGRICULTURE	LIVESTOCK	V	$8,036.18
	MELONS, CANTELOUPE	AGRICULTURE	FIELD CROPS	V	$500.00
	PETS (COMPANION/HOBBY ANI	PROPERTY	ANIMAL	V	$5,935.00
	PROPERTY (GENERAL)	PROPERTY	OTHER PROPERTY	V	$8,125.00
	PUMPKINS	AGRICULTURE	FIELD CROPS	V	$1,400.00
	ROADS/BRIDGES	PROPERTY	STRUCTURES	V	$25,200.00
	SHEEP (ADULT)	AGRICULTURE	LIVESTOCK	V	$29,418.81
	SHEEP (LAMBS)	AGRICULTURE	LIVESTOCK	V	$10,205.47

Confirmed wildlife damage summary CY 07-17

COUNTY	RESOURCE	CATEGORY	SUBCATEGORY	LOSS_REP_VER	TOTAL DAMAGES LOSS
SHASTA	SOIL (I.E. EROSION)	PROPERTY	OTHER PROPERTY	V	$16,500.00
	SWINE (ADULT)	AGRICULTURE	LIVESTOCK	V	$2,000.00
	SWINE (PIGLETS)	AGRICULTURE	LIVESTOCK	V	$1,662.54
	TREES, STANDING	NATURAL RESOURCE	FORESTRY (NATRL. RESRC)	V	$1,100.00
	TURF AND/OR FLOWERS	PROPERTY	LANDSCAPING, TURF AND GA	V	$250.00
	VEHICLES, LAND	PROPERTY	EQUIPMENT	V	$4,600.00
	WETLANDS	NATURAL RESOURCE	OTHER NATURAL RESOURCES	V	$5,500.00
SHASTA COUNTY (AIR	EQUIPMENT/MACHINERY (OTHE	PROPERTY	EQUIPMENT	V	$10,000.00
	FENCES	PROPERTY	STRUCTURES	V	$5,000.00
Grand Total					$1,563,975.87

Shasta Confirmed Damage Non Avian Species

CALENDAR YEAR	COUNTY	CATEGORY	SUBCATEGORY	SPECIES	RESOURCE	DAMAGE	LOSS_REP_VER	Sum of TOTALDAMAGESLOSS
2007	SHASTA	AGRICULTURE	FIELD CROPS	BADGERS	HAYFIELDS, ALFALFA	DAMAGE	V	$500.00
			LIVESTOCK	BEARS, BLACK	CATTLE (ADULT)	PREDATION	V	$500.00
					FOWL, TURKEYS (DOMESTIC)	PREDATION	V	$160.00
				COYOTES	GOATS, Z-(OTHER ADULTS)	PREDATION	V	$420.00
					SHEEP (ADULT)	PREDATION	V	$1,000.00
					SHEEP (LAMBS)	PREDATION	V	$540.00
				LIONS, MOUNTAIN (COUGAR)	CATTLE (CALVES)	PREDATION	V	$500.00
					GOATS, MEAT (ADULTS)	PREDATION	V	$250.00
					GOATS, Z-(OTHER ADULTS)	PREDATION	V	$575.00
					LLAMAS (ALL)	PREDATION	V	$600.00
					SHEEP (ADULT)	PREDATION	V	$1,860.00
			OTHER	BEARS, BLACK	HIVES (BEES, HONEY, STRUCTURES)	DAMAGE	V	$1,000.00
						FEEDING (OTHER)	V	$10,000.00
		AGRICULTURE Total						$17,905.00
		PROPERTY	OTHER PROPERTY	SKUNKS, STRIPED	FOOD ITEMS, NON-HUMAN *	FEEDING (OTHER)	V	$25.00
					PROPERTY (GENERAL)	FEEDING (OTHER)	V	$25.00
			STRUCTURES	BEARS, BLACK	BUILDINGS, NON-RESIDENTIAL	DAMAGE	V	$250.00
				BEAVERS	IRRIGATION DITCH/DRAINAGE SYSTEM	DAMAGE	V	$1,750.00
		PROPERTY Total						$2,050.00
2007 Total								$19,955.00
2008	SHASTA	AGRICULTURE	LIVESTOCK	BEARS, BLACK	GOATS, MEAT (ADULTS)	PREDATION	V	$500.00
					SWINE (ADULT)	PREDATION	V	$2,000.00
				BOBCATS	FOWL, TURKEYS (DOMESTIC)	PREDATION	V	$125.00
				COYOTES	CATTLE (CALVES)	PREDATION	V	$500.00
					GOATS, MEAT (ADULTS)	PREDATION	V	$125.00
					SHEEP (ADULT)	PREDATION	V	$840.00
					SHEEP (LAMBS)	PREDATION	V	$400.00
				LIONS, MOUNTAIN (COUGAR)	GOATS, MEAT (ADULTS)	PREDATION	V	$600.00
					GOATS, Z-(OTHER ADULTS)	PREDATION	V	$950.00
					SHEEP (ADULT)	PREDATION	V	$920.00
			OTHER	BEARS, BLACK	HIVES (BEES, HONEY, STRUCTURES)	FEEDING (OTHER)	V	$1,200.00
		AGRICULTURE Total						$8,160.00
		PROPERTY	OTHER PROPERTY	BEARS, BLACK	PROPERTY (GENERAL)	FEEDING (OTHER)	V	$1,500.00
			STRUCTURES	BEAVERS	DIKES/DAMS/IMPOUNDMENTS	FLOODING	V	$1,500.00
		PROPERTY Total						$3,000.00
2008 Total								$11,160.00
2009	SHASTA	AGRICULTURE	FIELD CROPS	BEARS, BLACK	PUMPKINS	DAMAGE	V	$1,400.00
			LIVESTOCK	BEARS, BLACK	CATTLE (CALVES)	PREDATION	V	$6,000.00
					GOATS, Z-(OTHER ADULTS)	PREDATION	V	$120.00
				COYOTES	GOATS, MEAT (ADULTS)	PREDATION	V	$160.00
					GOATS, Z-(OTHER KIDS)	PREDATION	V	$100.00
					SHEEP (ADULT)	PREDATION	V	$600.00
				LIONS, MOUNTAIN (COUGAR)	CATTLE (CALVES)	PREDATION	V	$700.00
					EQUINE, DONKEYS/BURROS	PREDATION	V	$1,000.00
					EQUINE, HORSES (FOALS)	PREDATION	V	$600.00
					GOATS, MEAT (ADULTS)	PREDATION	V	$720.00
					GOATS, Z-(OTHER ADULTS)	PREDATION	V	$750.00
			OTHER	BEARS, BLACK	HIVES (BEES, HONEY, STRUCTURES)	DAMAGE	V	$16,500.00
		AGRICULTURE Total						$28,650.00
		PROPERTY	STRUCTURES	BEARS, BLACK	BUILDINGS, RESIDENTIAL	DAMAGE	V	$1,200.00
				BEAVERS	IRRIGATION DITCH/DRAINAGE SYSTEM	FLOODING	V	$1,200.00
					IRRIGATION PIPE SYSTEM	FLOODING	V	$500.00
				RACCOONS	BUILDINGS, RESIDENTIAL	FEEDING (OTHER)	V	$250.00
				SKUNKS, STRIPED	BUILDINGS, RESIDENTIAL	BURROWING/DIGGING	V	$700.00
		PROPERTY Total						$3,850.00
	SHASTA COUNTY (AIRPORTS)	PROPERTY	EQUIPMENT	COYOTES	EQUIPMENT/MACHINERY (OTHER)	DAMAGE	V	$10,000.00
			STRUCTURES	COYOTES	FENCES	BURROWING/DIGGING	V	$5,000.00
		PROPERTY Total						$15,000.00
2009 Total								$47,500.00
2010	SHASTA	AGRICULTURE	FIELD CROPS	BEARS, BLACK	MELONS, CANTELOUPE	DAMAGE	V	$500.00
			LIVESTOCK	BEARS, BLACK	FOWL, CHICKENS (OTHER)	PREDATION	V	$200.00
					GOATS, Z-(OTHER ADULTS)	PREDATION	V	$550.00
				COYOTES	GOATS, Z-(OTHER ADULTS)	PREDATION	V	$2,000.00
					SHEEP (ADULT)	PREDATION	V	$5,250.00
					SHEEP (LAMBS)	PREDATION	V	$200.00
				LIONS, MOUNTAIN (COUGAR)	GOATS, MEAT (ADULTS)	PREDATION	V	$450.00
					GOATS, Z-(OTHER ADULTS)	PREDATION	V	$6,600.00
					SHEEP (ADULT)	PREDATION	V	$300.00
			OTHER	BEARS, BLACK	HIVES (BEES, HONEY, STRUCTURES)	DAMAGE	V	$8,450.00

Shasta Confirmed Damage Non Avian Species

CALENDAR YEAR	COUNTY	CATEGORY	SUBCATEGORY	SPECIES	RESOURCE	DAMAGE	LOSS_REP_VER	Sum of TOTALDAMAGESLOSS
2010	SHASTA	AGRICULTURE Total						$24,500.00
		NATURAL RESOURCE	**AQUACULTURE**	BEARS, BLACK	**FISH, TROUT, RAINBOW**	PREDATION	V	$15,125.00
		NATURAL RESOURCE Total						$15,125.00
		PROPERTY	**ANIMAL**	LIONS, MOUNTAIN (COUGAR)	**PETS (COMPANION/HOBBY ANIMALS)**	PREDATION	V	$250.00
				RACCOONS	**PETS (COMPANION/HOBBY ANIMALS)**	PREDATION	V	$250.00
			OTHER PROPERTY	BEARS, BLACK	**PROPERTY (GENERAL)**	FEEDING (OTHER)	V	$250.00
				BEAVERS	**PROPERTY (GENERAL)**	GIRDLING/GNAWING/STRIPPNG	V	$1,000.00
			STRUCTURES	BEARS, BLACK	**BUILDINGS, NON-RESIDENTIAL**	DAMAGE	V	$1,100.00
					BUILDINGS, RESIDENTIAL	DAMAGE	V	$700.00
				BEAVERS	**IRRIGATION DITCH/DRAINAGE SYSTEM**	FLOODING	V	$1,000.00
					ROADS/BRIDGES	BURROWING/DIGGING	V	$24,000.00
				MUSKRATS	**DIKES/DAMS/IMPOUNDMENTS**	BURROWING/DIGGING	V	$5,000.00
				SKUNKS, STRIPED	**BUILDINGS, NON-RESIDENTIAL**	DAMAGE	V	$1,000.00
					BUILDINGS, RESIDENTIAL	BURROWING/DIGGING	V	$50.00
						DAMAGE	V	$35.00
		PROPERTY Total						$34,635.00
2010 Total								**$74,260.00**
2011	SHASTA	AGRICULTURE	**LIVESTOCK**	BEARS, BLACK	**CATTLE (CALVES)**	PREDATION	V	$7,000.00
					GOATS, Z-(OTHER ADULTS)	PREDATION	V	$300.00
				COYOTES	**CATTLE (CALVES)**	PREDATION	V	$2,000.00
					GOATS, Z-(OTHER ADULTS)	PREDATION	V	$420.00
					GOATS, Z-(OTHER KIDS)	PREDATION	V	$220.00
					SHEEP (ADULT)	PREDATION	V	$300.00
					SHEEP (LAMBS)	PREDATION	V	$750.00
				DOGS, FERAL, FREE-RANGING AND HYBRIDS	**CATTLE (ADULT)**	PREDATION	V	$9,500.00
				FOXES, GRAY	**FOWL, CHICKENS (OTHER)**	PREDATION	V	$40.00
				LIONS, MOUNTAIN (COUGAR)	**CATTLE (CALVES)**	HARASSMENT	V	$2,500.00
						PREDATION	V	$600.00
					GOATS, MEAT (ADULTS)	PREDATION	V	$250.00
					GOATS, Z-(OTHER ADULTS)	PREDATION	V	$3,390.00
					GOATS, Z-(OTHER KIDS)	PREDATION	V	$800.00
					SHEEP (ADULT)	PREDATION	V	$1,600.00
				RACCOONS	**FOWL, CHICKENS (OTHER)**	PREDATION	V	$10.00
			OTHER	BEARS, BLACK	**HIVES (BEES, HONEY, STRUCTURES)**	DAMAGE	V	$39,500.00
						FEEDING (OTHER)	V	$1,200.00
				RACCOONS	**HIVES (BEES, HONEY, STRUCTURES)**	DAMAGE	V	$400.00
		AGRICULTURE Total						$70,780.00
		NATURAL RESOURCE	**AQUACULTURE**	BEARS, BLACK	**FISH, TROUT, RAINBOW**	FEEDING (OTHER)	V	$5,000.00
			WILDLIFE	BOBCATS	**BIRDS, SWANS, WILD (OTHER)**	PREDATION	V	$652.00
		NATURAL RESOURCE Total						$5,652.00
		PROPERTY	**ANIMAL**	BEARS, BLACK	**PETS (COMPANION/HOBBY ANIMALS)**	PREDATION	V	$125.00
				COYOTES	**PETS (COMPANION/HOBBY ANIMALS)**	FEEDING (OTHER)	V	$10.00
						PREDATION	V	$500.00
			EQUIPMENT	BEARS, BLACK	**VEHICLES, LAND**	DAMAGE	V	$600.00
			STRUCTURES	BEARS, BLACK	**BUILDINGS, NON-RESIDENTIAL**	FEEDING (OTHER)	V	$1,000.00
				BEAVERS	**IRRIGATION DITCH/DRAINAGE SYSTEM**	DAMAGE	V	$300.00
						FLOODING	V	$450.00
				MUSKRATS	**BUILDINGS, RESIDENTIAL**	BURROWING/DIGGING	V	$5,000.00
		PROPERTY Total						$7,985.00
2011 Total								**$84,417.00**
2012	SHASTA	AGRICULTURE	**LIVESTOCK**	BEARS, BLACK	**CATTLE (ADULT)**	PREDATION	V	$862.40
					CATTLE (CALVES)	PREDATION	V	$7,000.00
					FOWL, CHICKENS (OTHER)	PREDATION	V	$65.80
					GOATS, Z-(OTHER ADULTS)	PREDATION	V	$308.00
				BOBCATS	**FOWL, CHICKENS (OTHER)**	PREDATION	V	$56.40
				COYOTES	**GOATS, Z-(OTHER ADULTS)**	PREDATION	V	$154.00
					GOATS, Z-(OTHER KIDS)	PREDATION	V	$324.00
					SHEEP (ADULT)	PREDATION	V	$1,800.00
					SHEEP (LAMBS)	PREDATION	V	$600.00
				DOGS, FERAL, FREE-RANGING AND HYBRIDS	**CATTLE (ADULT)**	PREDATION	V	$5,200.00
				LIONS, MOUNTAIN (COUGAR)	**EQUINE, HORSES (ADULT)**	PREDATION	V	$1,000.00
					FOWL, CHICKENS (OTHER)	PREDATION	V	$131.60
					GOATS, Z-(OTHER ADULTS)	PREDATION	V	$1,690.00
					LLAMAS (ALL)	PREDATION	V	$856.00
					SHEEP (ADULT)	PREDATION	V	$800.00
					SHEEP (LAMBS)	PREDATION	V	$100.00
			OTHER	BEARS, BLACK	**HIVES (BEES, HONEY, STRUCTURES)**	DAMAGE	V	$26,349.60
		AGRICULTURE Total						$47,297.80
		PROPERTY	**ANIMAL**	BEARS, BLACK	**PETS (COMPANION/HOBBY ANIMALS)**	PREDATION	V	$500.00

Shasta Confirmed Damage Non Avian Species

CALENDAR YEAR	COUNTY	CATEGORY	SUBCATEGORY	SPECIES	RESOURCE	DAMAGE	LOSS_REP_VER	Sum of TOTALDAMAGESLOSS
2012	SHASTA	PROPERTY	ANIMAL	BOBCATS	PETS (COMPANION/HOBBY ANIMALS)	INJURY	V	$400.00
				COYOTES	PETS (COMPANION/HOBBY ANIMALS)	PREDATION	V	$200.00
			OTHER PROPERTY	BEARS, BLACK	PROPERTY (GENERAL)	DAMAGE	V	$1,200.00
				MUSKRATS	SOIL (I.E. EROSION)	BURROWING/DIGGING	V	$5,000.00
			STRUCTURES	BEARS, BLACK	BUILDINGS, NON-RESIDENTIAL	DAMAGE	V	$2,100.00
					BUILDINGS, RESIDENTIAL	DAMAGE	V	$2,200.00
				BEAVERS	IRRIGATION DITCH/DRAINAGE SYSTEM	FLOODING	V	$2,200.00
		PROPERTY Total						$13,800.00
2012 Total								$61,097.80
2013	SHASTA	AGRICULTURE	FIELD CROPS	BEAVERS	GRAINS, RICE (WILD)	FLOODING	V	$15,184.80
				MUSKRATS	GRASSES/SOD	BURROWING/DIGGING	V	$34,848.00
				POCKET GOPHERS, BOTTA`S	GRASSES/SOD	BURROWING/DIGGING	V	$100.00
				SWINE, FERAL	GRASSES/SOD	BURROWING/DIGGING	V	$34,848.00
			LIVESTOCK	BEARS, BLACK	FOWL, CHICKENS (OTHER)	PREDATION	V	$149.40
					GOATS, MEAT (ADULTS)	PREDATION	V	$116.02
				BOBCATS	FOWL, CHICKENS (OTHER)	PREDATION	V	$522.90
				COYOTES	CATTLE (CALVES)	PREDATION	V	$2,356.20
					FOWL, CHICKENS (OTHER)	PREDATION	V	$203.00
					GOATS, MEAT (KIDS)	PREDATION	V	$105.12
					GOATS, Z-(OTHER ADULTS)	PREDATION	V	$365.70
					GOATS, Z-(OTHER KIDS)	PREDATION	V	$494.27
					SHEEP (ADULT)	PREDATION	V	$407.67
					SHEEP (LAMBS)	PREDATION	V	$2,511.60
				DOGS, FERAL, FREE-RANGING AND HYBRIDS	CATTLE (ADULT)	INJURY	V	$862.40
					CATTLE (CALVES)	PREDATION	V	$2,356.20
					EQUINE, HORSES (ADULT)	PREDATION	V	$3,731.00
				FOXES, GRAY	SHEEP (LAMBS)	PREDATION	V	$100.00
				LIONS, MOUNTAIN (COUGAR)	CATTLE (CALVES)	PREDATION	V	$785.40
					EQUINE, DONKEYS/BURROS	PREDATION	V	$1,090.00
					EQUINE, HORSES (ADULT)	INJURY	V	$3,000.00
					GOATS, MEAT (ADULTS)	PREDATION	V	$116.02
					GOATS, Z-(OTHER ADULTS)	PREDATION	V	$4,590.75
					GOATS, Z-(OTHER KIDS)	PREDATION	V	$3,745.94
					LLAMAS (ALL)	PREDATION	V	$4,194.80
					SHEEP (ADULT)	PREDATION	V	$3,833.01
					SHEEP (LAMBS)	PREDATION	V	$334.88
				RACCOONS	FOWL, DUCKS (DOMESTIC)	PREDATION	V	$50.92
			OTHER	BEARS, BLACK	HIVES (BEES, HONEY, STRUCTURES)	DAMAGE	V	$25,939.31
						FEEDING (OTHER)	V	$1,500.00
		AGRICULTURE Total						$148,443.31
		PROPERTY	ANIMAL	LIONS, MOUNTAIN (COUGAR)	PETS (COMPANION/HOBBY ANIMALS)	PREDATION	V	$100.00
			LANDSCAPING, TURF AND GARDENS	POCKET GOPHERS, BOTTA`S	TURF AND/OR FLOWERS	BURROWING/DIGGING	V	$150.00
			OTHER PROPERTY	MUSKRATS	SOIL (I.E. EROSION)	BURROWING/DIGGING	V	$7,000.00
				SKUNKS, STRIPED	PROPERTY (GENERAL)	DAMAGE	V	$2,700.00
			STRUCTURES	BEARS, BLACK	BUILDINGS, RESIDENTIAL	DAMAGE	V	$1,600.00
					FENCES	DAMAGE	V	$1,000.00
				BEAVERS	DIKES/DAMS/IMPOUNDMENTS	FEEDING (OTHER)	V	$150.00
					IRRIGATION DITCH/DRAINAGE SYSTEM	DAMAGE	V	$300.00
						FLOODING	V	$200.00
				MUSKRATS	BUILDINGS, RESIDENTIAL	BURROWING/DIGGING	V	$3,000.00
				SKUNKS, STRIPED	BUILDINGS, RESIDENTIAL	BURROWING/DIGGING	V	$125.00
						DAMAGE	V	$25.00
		PROPERTY Total						$16,350.00
2013 Total								$164,793.31
2014	SHASTA	AGRICULTURE	FIELD CROPS	BEAVERS	GRAINS, RICE (WILD)	FLOODING	V	$50,616.00
			LIVESTOCK	BEARS, BLACK	FOWL, CHICKENS (OTHER)	PREDATION	V	$622.50
				BOBCATS	FOWL, CHICKENS (OTHER)	PREDATION	V	$323.70
					SHEEP (LAMBS)	PREDATION	V	$334.88
				COYOTES	CATTLE (CALVES)	PREDATION	V	$785.40
					CATTLE CALVES (BEEF)	PREDATION	V	$1,622.52
					FOWL, CHICKENS (OTHER)	PREDATION	V	$74.70
					GOATS, Z-(OTHER ADULTS)	PREDATION	V	$1,460.00
					GOATS, Z-(OTHER KIDS)	PREDATION	V	$5,906.27
					SHEEP (ADULT)	PREDATION	V	$244.11
				DOGS, FERAL, FREE-RANGING AND HYBRIDS	CATTLE CALVES (BEEF)	PREDATION	V	$811.26
				LIONS, MOUNTAIN (COUGAR)	CATTLE (CALVES)	PREDATION	V	$785.40
					GOATS, ANGORA (KIDS)	PREDATION	V	$865.00
					GOATS, MEAT (ADULTS)	PREDATION	V	$232.04
					GOATS, Z-(OTHER ADULTS)	PREDATION	V	$6,029.85

Shasta Confirmed Damage Non Avian Species

CALENDAR YEAR	COUNTY	CATEGORY	SUBCATEGORY	SPECIES	RESOURCE	DAMAGE	LOSS_REP_VER	Sum of TOTALDAMAGESLOSS
2014	SHASTA	AGRICULTURE	**LIVESTOCK**	LIONS, MOUNTAIN (COUGAR)	**GOATS, Z-(OTHER KIDS)**	PREDATION	V	$777.68
					SHEEP (ADULT)	PREDATION	V	$2,875.60
				RACCOONS	**FOWL, CHICKENS (OTHER)**	PREDATION	V	$174.30
				SKUNKS, STRIPED	**FOWL, CHICKENS (OTHER)**	PREDATION	V	$522.90
			OTHER	BEARS, BLACK	**HIVES (BEES, HONEY, STRUCTURES)**	DAMAGE	V	$24,809.94
						FEEDING (OTHER)	V	$3,961.58
		AGRICULTURE Total						$103,835.63
		NATURAL RESOURCE	**FISHERIES**	BEARS, BLACK	**FISH, Z-(OTHER)**	PREDATION	V	$250.00
			OTHER NATURAL RESOURCES	MUSKRATS	**WETLANDS**	BURROWING/DIGGING	V	$5,500.00
		NATURAL RESOURCE Total						$5,750.00
		PROPERTY	**ANIMAL**	BOBCATS	**PETS (COMPANION/HOBBY ANIMALS)**	PREDATION	V	$100.00
				LIONS, MOUNTAIN (COUGAR)	**PETS (COMPANION/HOBBY ANIMALS)**	PREDATION	V	$2,200.00
			OTHER PROPERTY	MUSKRATS	**SOIL (I.E. EROSION)**	BURROWING/DIGGING	V	$4,500.00
			STRUCTURES	BEARS, BLACK	**BUILDINGS, NON-RESIDENTIAL**	DAMAGE	V	$600.00
					BUILDINGS, RESIDENTIAL	DAMAGE	V	$4,050.00
					FENCES	DAMAGE	V	$600.00
				BEAVERS	**DIKES/DAMS/IMPOUNDMENTS**	FLOODING	V	$2,025.00
					IRRIGATION DITCH/DRAINAGE SYSTEM	FLOODING	V	$200.00
				MUSKRATS	**DIKES/DAMS/IMPOUNDMENTS**	BURROWING/DIGGING	V	$1,000.00
				RACCOONS	**BUILDINGS, RESIDENTIAL**	DAMAGE	V	$500.00
				SKUNKS, STRIPED	**BUILDINGS, RESIDENTIAL**	DAMAGE	V	$50.00
				SQUIRRELS, GROUND, CALIFORNIA	**BUILDINGS, RESIDENTIAL**	BURROWING/DIGGING	V	$125.00
		PROPERTY Total						$15,950.00
2014 Total								**$125,535.63**
2015	SHASTA	AGRICULTURE	**FIELD CROPS**	RACCOONS	**GARDENS, TRUCK**	CONSUMPTION/CONTAMINATION	V	$60.00
			LIVESTOCK	BEARS, BLACK	**CATTLE CALVES (BEEF)**	PREDATION	V	$1,216.89
					FOWL, CHICKENS (OTHER)	PREDATION	V	$126.65
				BOBCATS	**FOWL, CHICKENS (OTHER)**	PREDATION	V	$125.03
				COYOTES	**CATTLE CALVES (BEEF)**	PREDATION	V	$1,216.89
					GOATS, Z-(OTHER ADULTS)	PREDATION	V	$314.29
					SHEEP (ADULT)	PREDATION	V	$244.11
					SHEEP (LAMBS)	PREDATION	V	$745.74
				FOXES, GRAY	**FOWL, CHICKENS (OTHER)**	PREDATION	V	$37.25
				LIONS, MOUNTAIN (COUGAR)	**CATTLE CALVES (BEEF)**	PREDATION	V	$811.26
					EQUINE, HORSES (ADULT)	INJURY	V	$400.00
					EQUINE, HORSES (FOALS)	PREDATION	V	$2,188.00
					GOATS, Z-(OTHER ADULTS)	PREDATION	V	$6,002.16
					GOATS, Z-(OTHER KIDS)	PREDATION	V	$194.42
					LLAMAS (ALL)	PREDATION	V	$2,385.38
					SHEEP (ADULT)	PREDATION	V	$1,464.66
					SHEEP (LAMBS)	PREDATION	V	$124.29
				RACCOONS	**FOWL, CHICKENS (OTHER)**	PREDATION	V	$238.40
			OTHER	BEARS, BLACK	**HIVES (BEES, HONEY, STRUCTURES)**	DAMAGE	V	$23,830.38
						FEEDING (OTHER)	V	$9,918.16
		AGRICULTURE Total						$51,643.96
		NATURAL RESOURCE	**FORESTRY (NATRL. RESRC)**	BEAVERS	**TREES, STANDING**	GIRDLING/GNAWING/STRIPPNG	V	$1,100.00
		NATURAL RESOURCE Total						$1,100.00
		PROPERTY	**ANIMAL**	LIONS, MOUNTAIN (COUGAR)	**PETS (COMPANION/HOBBY ANIMALS)**	PREDATION	V	$100.00
			EQUIPMENT	DOMESTIC ANIMAL (PET OR LIVESTOCK)	**VEHICLES, LAND**	DAMAGE	V	$4,000.00
			OTHER PROPERTY	SWINE, FERAL	**PROPERTY (GENERAL)**	BURROWING/DIGGING	V	$1,200.00
			STRUCTURES	BEAVERS	**DIKES/DAMS/IMPOUNDMENTS**	FLOODING	V	$1,600.00
					IRRIGATION DITCH/DRAINAGE SYSTEM	FLOODING	V	$525.00
					ROADS/BRIDGES	BURROWING/DIGGING	V	$1,200.00
				MUSKRATS	**DIKES/DAMS/IMPOUNDMENTS**	BURROWING/DIGGING	V	$10,000.00
				SKUNKS, STRIPED	**BUILDINGS, RESIDENTIAL**	DAMAGE	V	$150.00
		PROPERTY Total						$18,775.00
2015 Total								**$71,518.96**
2016	SHASTA	AGRICULTURE	**FIELD CROPS**	SWINE, FERAL	**HAYFIELDS, ALFALFA**	DAMAGE	V	$635.44
			LIVESTOCK	BEARS, BLACK	**CATTLE CALVES (BEEF)**	PREDATION	V	$4,049.04
					FOWL, CHICKENS (OTHER)	PREDATION	V	$103.65
					GOATS, Z-(OTHER ADULTS)	PREDATION	V	$628.58
					SHEEP (ADULT)	PREDATION	V	$488.22
					SWINE (PIGLETS)	PREDATION	V	$700.00
				COYOTES	**CATTLE CALVES (BEEF)**	PREDATION	V	$405.63
					SHEEP (ADULT)	PREDATION	V	$757.59
					SHEEP (LAMBS)	PREDATION	V	$1,977.08
				DOGS, FERAL, FREE-RANGING AND HYBRIDS	**FOWL, CHICKENS (OTHER)**	PREDATION	V	$20.73
					SHEEP (ADULT)	PREDATION	V	$81.37
				LIONS, MOUNTAIN (COUGAR)	**CATTLE ADULT (BEEF)**	PREDATION	V	$2,564.55

Shasta Confirmed Damage Non Avian Species

CALENDAR YEAR	COUNTY	CATEGORY	SUBCATEGORY	SPECIES	RESOURCE	DAMAGE	LOSS_REP_VER	Sum of TOTALDAMAGESLOSS
2016	SHASTA	AGRICULTURE	**LIVESTOCK**	LIONS, MOUNTAIN (COUGAR)	**CATTLE CALVES (BEEF)**	PREDATION	V	$405.63
					GOATS, Z-(OTHER ADULTS)	PREDATION	V	$6,878.06
					GOATS, Z-(OTHER KIDS)	PREDATION	V	$140.26
					SHEEP (ADULT)	PREDATION	V	$650.96
					SHEEP (LAMBS)	PREDATION	V	$743.82
					SWINE (PIGLETS)	PREDATION	V	$85.62
				RACCOONS	**FOWL, CHICKENS (OTHER)**	PREDATION	V	$13.82
				SQUIRRELS, GROUND, CALIFORNIA	**FOWL, TURKEYS (DOMESTIC)**	PREDATION	V	$338.40
			OTHER	BEARS, BLACK	**HIVES (BEES, HONEY, STRUCTURES)**	DAMAGE	V	$84,645.00
						FEEDING (OTHER)	V	$4,894.88
				SKUNKS, STRIPED	**FEED, LIVESTOCK**	FEEDING (OTHER)	V	$25.00
		AGRICULTURE Total						$111,233.33
		PROPERTY	**ANIMAL**	BEARS, BLACK	**PETS (COMPANION/HOBBY ANIMALS)**	PREDATION	V	$100.00
				COYOTES	**PETS (COMPANION/HOBBY ANIMALS)**	PREDATION	V	$1,000.00
				LIONS, MOUNTAIN (COUGAR)	**PETS (COMPANION/HOBBY ANIMALS)**	PREDATION	V	$100.00
			STRUCTURES	BEAVERS	**IRRIGATION DITCH/DRAINAGE SYSTEM**	DAMAGE	V	$300.00
						FLOODING	V	$2,000.00
				COYOTES	**IRRIGATION, DRIP LINE**	DAMAGE	V	$250.00
				MUSKRATS	**DIKES/DAMS/IMPOUNDMENTS**	BURROWING/DIGGING	V	$1,000.00
		PROPERTY Total						$4,750.00
2016 Total								**$115,983.33**
2017	SHASTA	AGRICULTURE	**LIVESTOCK**	BEARS, BLACK	**FOWL, CHICKENS (OTHER)**	PREDATION	V	$787.06
					FOWL, TURKEYS (DOMESTIC)	PREDATION	V	$28.20
					GOATS, Z-(OTHER ADULTS)	PREDATION	V	$1,338.40
					SHEEP (ADULT)	PREDATION	V	$2,719.89
					SWINE (PIGLETS)	PREDATION	V	$76.92
				COYOTES	**CATTLE CALVES (BEEF)**	PREDATION	V	$2,010.00
					FOWL, TURKEYS (DOMESTIC)	PREDATION	V	$28.20
					GOATS, Z-(OTHER KIDS)	PREDATION	V	$280.52
					SHEEP (ADULT)	PREDATION	V	$84.18
				LIONS, MOUNTAIN (COUGAR)	**CATTLE CALVES (BEEF)**	PREDATION	V	$402.00
					GOATS, Z-(OTHER ADULTS)	PREDATION	V	$2,676.80
					SHEEP (ADULT)	PREDATION	V	$297.44
					SHEEP (LAMBS)	PREDATION	V	$743.18
					SWINE (PIGLETS)	PREDATION	V	$800.00
			OTHER	BEARS, BLACK	**FEED, LIVESTOCK**	FEEDING (OTHER)	V	$200.00
					HIVES (BEES, HONEY, STRUCTURES)	DAMAGE	V	$50,172.52
						FEEDING (OTHER)	V	$22,380.33
		AGRICULTURE Total						$85,025.64
		PROPERTY	**LANDSCAPING, TURF AND GARDENS**	SWINE, FERAL	**TURF AND/OR FLOWERS**	DAMAGE	V	$100.00
			OTHER PROPERTY	RACCOONS	**FOOD ITEMS, NON-HUMAN ***	FEEDING (OTHER)	V	$250.00
				SKUNKS, STRIPED	**PROPERTY (GENERAL)**	DAMAGE	V	$150.00
						DISEASE THREAT	V	$100.00
			STRUCTURES	BEAVERS	**DIKES/DAMS/IMPOUNDMENTS**	BURROWING/DIGGING	V	$250.00
						FLOODING	V	$500.00
				COYOTES	**DIKES/DAMS/IMPOUNDMENTS**	BURROWING/DIGGING	V	$350.00
				SKUNKS, STRIPED	**BUILDINGS, RESIDENTIAL**	DAMAGE	V	$150.00
		PROPERTY Total						$1,850.00
2017 Total								**$86,875.64**
Grand Total								**$863,096.67**

Confirmed damage caused by avian species CY

CALENDAR YEAR	COUNTY	CATEGORY	SUBCATEGORY	SPECIES	RESOURCE	LOSS_DMGT_NAME	LOSS_REP_VER	Sum of TOTALDAMAGESLOSS
2011	SHASTA	AGRICULTURE	FIELD CROPS	GEESE, CANADA	GRAINS, RICE (WILD)	FEEDING (OTHER)	V	$1,500.00
2011 Total								$1,500.00
2013	SHASTA	AGRICULTURE	FIELD CROPS	BLACKBIRDS, RED-WINGED	GRAINS, RICE (WILD)	FEEDING (OTHER)	V	$10,123.20
				COOTS, AMERICAN	GRAINS, RICE (WILD)	FEEDING (OTHER)	V	$126,540.00
2013 Total								$136,663.20
2014	SHASTA	AGRICULTURE	FIELD CROPS	COOTS, AMERICAN	GRAINS, RICE (WILD)	FEEDING (OTHER)	V	$122,211.00
		PROPERTY	STRUCTURES	WOODPECKERS, ACORN	BUILDINGS, RESIDENTIAL	DAMAGE	V	$1,500.00
2014 Total								$123,711.00
2015	SHASTA	AGRICULTURE	FIELD CROPS	COOTS, AMERICAN	GRAINS, RICE (WILD)	FEEDING (OTHER)	V	$101,842.50
2015 Total								$101,842.50
2016	SHASTA	AGRICULTURE	FIELD CROPS	BLACKBIRDS, RED-WINGED	GRAINS, RICE (WILD)	FEEDING (OTHER)	V	$177,322.50
2016 Total								$177,322.50
2017	SHASTA	AGRICULTURE	FIELD CROPS	BLACKBIRDS, RED-WINGED	GRAINS, RICE (WILD)	FEEDING (OTHER)	V	$119,880.00
				COOTS, AMERICAN	GRAINS, RICE (WILD)	FEEDING (OTHER)	V	$39,960.00
2017 Total								$159,840.00
Grand Total								$700,879.20

Shasta Land Class Acres by Calendar Years 2007-2017

Sum of ACRES		CALENDARYEAR											
COUNTY	**LANDCLASS**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**Grand Total**
SHASTA	BLM LAND	16,500	16,500	16,500	16,500	16,500	16,500	16,500	16,500	16,500	76,500	60,000	285,000
	PRIVATE LAND	61,273	63,429	53,960	43,888	40,522	16,539	17,133	21,888	20,728	14,049	7,418	360,827
SHASTA COUNTY (AIRPORTS)	COUNTY OR CITY LAND			1,500	1,500				1,500	1,500	1,500	1,500	9,000
Grand Total		**77,773**	**79,929**	**71,960**	**61,888**	**57,022**	**33,039**	**33,633**	**39,888**	**38,728**	**92,049**	**68,918**	**654,827**

Shasta Technical Assistance by Species CY 2007-2017

COUNTY	SPECIES	Sum of TA PROJECTS
SHASTA	BEARS, BLACK	464
	BEAVERS	82
	BLACKBIRDS, BREWER`S	29
	BLACKBIRDS, RED-WINGED	44
	BLACKBIRDS, YELLOW-HEADED	28
	BOBCATS	17
	COOTS, AMERICAN	36
	COWBIRDS, BROWN-HEADED	28
	COYOTES	280
	DEER, BLACK-TAILED	2
	DOGS, FERAL, FREE-RANGING AND HYBRIDS	11
	DOMESTIC ANIMAL (PET OR LIVESTOCK)	1
	FLICKERS, NORTHERN	1
	FOXES, GRAY	23
	HARES, JACKRABBITS, BLACK-TAILED	1
	LIONS, MOUNTAIN (COUGAR)	585
	MOLES (ALL)	1
	MULTIPLE SPECIES	10
	MUSKRATS	153
	OPOSSUMS, VIRGINIA	1
	OTTERS, RIVER	3
	OWLS, GREAT HORNED	1
	PIGEONS, FERAL (ROCK)	1
	POCKET GOPHERS, BOTTA`S	3
	RACCOONS	28
	SKUNKS, STRIPED	95
	SQUIRRELS, GROUND (OTHER)	2
	SQUIRRELS, GROUND, CALIFORNIA	1
	STARLINGS, EUROPEAN	5
	SWINE, FERAL	28
	TURKEYS, WILD	3
	WOODCHUCKS	1
	WOODPECKERS, ACORN	2
SHASTA COUI	COYOTES	3
	DEER, BLACK-TAILED	1
	GEESE, CANADA	1
Grand Total		1,975

Shasta Hours by Work Task Form Type CY 2007-2017

Sum of TIME	Form Type			
Category	admin	dc_DC	TA	Grand Total
2007		2,689	225	2,914
2008	433	2,193	232	2,857
2009	531	2,207	340	3,078
2010	695	2,547	192	3,434
2011	894	2,566	170	3,630
2012	825	2,557	159	3,541
2013	912	2,350	221	3,483
2014	1,205	2,202	280	3,686
2015	1,213	2,270	200	3,682
2016	882	2,447	213	3,542
2017	727	2,651	123	3,501
Grand Total	**8,315**	**26,677**	**2,354**	**37,346**

ATTACHMENT B
BIOLOGICAL RESOURCES
DATA TABLES

TABLE B-1
SHASTA COUNTY HABITAT TYPES

Type	Acreage
Alpine-Dwarf Shrub	120
Annual Grassland	118,999
Aspen	363
Barren	43,880
Bitterbrush	1,061
Blue Oak-Foothill Pine	96,034
Blue Oak Woodland	209,816
Closed-Cone Pine-Cypress	14,560
Chamise-Redshank Chaparral	15,446
Cropland	51,245
Douglas-Fir	41,704
Evergreen Orchard	9
Eastside Pine	42,089
Freshwater Emergent Wetland	168
Jeffrey Pine	2,128
Juniper	11,631
Klamath Mixed Conifer	7,306
Lacustrine	42,052
Lodgepole Pine	5,634
Low Sage	621
Mixed Chaparral	166,703
Montane Chaparral	142,220
Montane Chaparral	162,492
Montane Hardwood-Conifer	199,435
Montane Riparian	2,382
Pasture	11,843
Perennial Grassland	32,839
Ponderosa Pine	159,404
Red Fir	30,017
Rice	774
Riverine	4,763
Subalpine Conifer	1,870
Sagebrush	23,182
Sierran Mixed Conifer	727,120
Urban	25,282
Vineyard	2
Valley Oak Woodland	6,009
Valley Foothill Riparian	4,411
White Fir	51,128
Wet Meadow	8,479

Source: CWHR Model (CDFW) and CALVEG (USFS 2018)

TABLE B-2A
SHASTA COUNTY THREATENED AND ENDANGERED SPECIES

Scientific Name	Common Name	Federal List	California List	Global Rank	State Rank	Other Status	Habitats
Amphibian							
Hydromantes shastae	Shasta salamander	None	Threatened	G1G2	S3	BLM-S|USFS-S	Cismontane woodland | Limestone
Rana boylii	foothill yellow-legged frog	None	Candidate Threatened	G3	S3	BLM-S|SSC | USFS-S	Aquatic | Chaparral | Cismontane woodland | Coastal scrub | Klamath/North coast flowing waters | Lower montane coniferous forest | Meadow & seep | Riparian forest | Riparian woodland | Sacramento/San Joaquin flowing waters
Rana cascadae	Cascades frog	None	Candidate Endangered	G3G4	S3	SSC	Aquatic | Lower montane coniferous forest
Rana pretiosa	Oregon spotted frog	Threatened	None	G2	SH	BLM-S|SSC	Aquatic | Meadow & seep
Bird							
Agelaius tricolor	tricolored blackbird	None	Candidate Endangered	G2G3	S1S2	BLM-S|SSC	Freshwater marsh | Marsh & swamp | Swamp | Wetland
Antigone canadensis tabida	greater sandhill crane	None	Threatened	G5T4	S2	BLM-S| SSC | U_SFS-S	Marsh & swamp | Meadow & seep | Wetland
Empidonax traillii	willow flycatcher	None	Endangered	G5	S1S2	USFS-S	Meadow & seep | Riparian scrub | Riparian woodland | Wetland
Falco peregrinus anatum	American peregrine falcon	Delisted	Delisted	G4T4	S3S4	CDF-S |CDFW-FP	
Haliaeetus leucocephalus	bald eagle	Delisted	Endangered	G5	S3	BLM-S|CDF-S | CDFW-FP|USFS-S |	Lower montane coniferous forest | Oldgrowth
Laterallus jamaicensis coturniculus	California black rail	None	Threatened	G3G4T1	S1	BLM-S| CDFW-FP	Brackish marsh | Freshwater marsh | Marsh & swamp | Salt marsh | Wetland
Riparia riparia	bank swallow	None	Threatened	G5	S2	BLM-S	Riparian scrub | Riparian woodland
Crustacean							
Branchinecta lynchi	vernal pool fairy shrimp	Threatened	None	G3	S3		Valley & foothill grassland | Vernal pool | Wetland
Lepidurus packardi	vernal pool tadpole shrimp	Endangered	None	G4	S3S4		Valley & foothill grassland | Vernal pool | Wetland

TABLE B-2A
SHASTA COUNTY THREATENED AND ENDANGERED SPECIES

Scientific Name	Common Name	Federal List	California List	Global Rank	State Rank	Other Status	Habitats
Pacifastacus fortis	Shasta crayfish	Endangered	Endangered	G1	S1		Aquatic | Sacramento/San Joaquin flowing waters | Sacramento/San Joaquin standing waters
Fish							
Cottus asperrimus	rough sculpin	None	Threatened	G2	S2	BLM-S |CDFW-FP	Aquatic | Sacramento/San Joaquin flowing waters
Oncorhynchus mykiss irideus pop. 11	steelhead - Central Valley DPS	Threatened	None	G5T2Q	S2		Aquatic | Sacramento/San Joaquin flowing waters
Oncorhynchus tshawytscha pop. 6	chinook salmon - Central Valley spring-run ESU	Threatened	Threatened	G5	S1		Aquatic | Sacramento/San Joaquin flowing waters
Oncorhynchus tshawytscha pop. 7	chinook salmon - Sacramento River winter-run ESU	Endangered	Endangered	G5	S1		Aquatic | Sacramento/San Joaquin flowing waters
Salvelinus confluentus	bull trout	Threatened	Endangered	G4	SX		Aquatic | Sacramento/San Joaquin flowing waters
Insect							
Desmocerus californicus dimorphus	valley elderberry longhorn beetle	Threatened	None	G3T2	S2		Riparian scrub
Mammal							
Gulo gulo	California wolverine	Proposed Threatened	Threatened	G4	S1	CDFW-FP| USFS-S	Alpine | Alpine dwarf scrub | Meadow & seep | Montane dwarf scrub | North coast coniferous forest | Riparian forest | Subalpine coniferous forest | Upper montane coniferous forest | Wetland
Pekania pennanti	fisher - West Coast DPS	None	Threatened	G5T2T3Q	S2S3	BLM-S |SSC|USFS-S	North coast coniferous forest | Oldgrowth | Riparian forest
Vulpes vulpes necator	Sierra Nevada red fox	Candidate	Threatened	G5T1T2	S1	USFS-S	Alpine | Alpine dwarf scrub | Broadleaved upland forest | Meadow & seep | Riparian scrub | Subalpine coniferous forest | Upper montane coniferous forest | Wetland

Source: Rarefind (CDFW 2019)

TABLE B-2B
SHASTA COUNTY SPECIES OF SPECIAL CONCERN

Scientific Name	Common Name	Global Rank	State Rank	Other Status	Habitats
Amphibian					
Ambystoma macrodactylum sigillatum	southern long-toed salamander	G5T4	S3	SSC	Not Available
Ascaphus truei	Pacific tailed frog	G4	S3S4	SSC	Aquatic | Klamath/North coast flowing waters | Lower montane coniferous forest | North coast coniferous forest | Redwood | Riparian forest
Spea hammondii	western spadefoot	G3	S3	BLM - Sensitive |SSC	Cismontane woodland | Coastal scrub | Valley & foothill grassland | Vernal pool | Wetland
Bird					
Accipiter cooperii	Cooper's hawk	G5	S4		Cismontane woodland | Riparian forest | Riparian woodland | Upper montane coniferous forest
Accipiter gentilis	northern goshawk	G5	S3	BLM-S |CDF-S- |SSC	North coast coniferous forest | Subalpine coniferous forest | Upper montane coniferous forest
Ardea alba	great egret	G5	S4	CDF-S	Brackish marsh | Estuary | Freshwater marsh | Marsh & swamp | Riparian forest | Wetland
Ardea herodias	great blue heron	G5	S4	CDF-S	Brackish marsh | Estuary | Freshwater marsh | Marsh & swamp | Riparian forest | Wetland
Cypseloides niger	black swift	G4	S2	SSC	
Pandion haliaetus	osprey	G5	S4	CDF-S	Riparian forest
Picoides arcticus	black-backed woodpecker	G5	S2		

TABLE B-2B
SHASTA COUNTY SPECIES OF SPECIAL CONCERN

Scientific Name	Common Name	Global Rank	State Rank	Other Status	Habitats
Progne subis	purple martin	G5	S3	SSC	Broadleaved upland forest | Lower montane coniferous forest
Crustacean					
Linderiella occidentalis	California linderiella	G2G3	S2S3		Vernal pool
Fish					
Cottus klamathensis macrops	bigeye marbled sculpin	G4T3	S2S3	SSC	Aquatic | Sacramento/San Joaquin flowing waters
Entosphenus tridentatus	Pacific lamprey	G4	S4	BLM-S|SSC| USFS-S	Aquatic | Klamath/North coast flowing waters | Sacramento/San Joaquin flowing waters | South coast flowing waters
Lavinia symmetricus mitrulus	Pit roach	G4T2	S2	SSC	Aquatic | Sacramento/San Joaquin flowing waters
Mylopharodon conocephalus	hardhead	G3	S3	SSC |USFS-S	Klamath/North coast flowing waters | Sacramento/San Joaquin flowing waters
Oncorhynchus mykiss ssp. 2	McCloud River redband trout	G5T1	S1S2	SSC| USFS-S	Aquatic | Sacramento/San Joaquin flowing waters | Sacramento/San Joaquin standing waters
Mammals					
Antrozous pallidus	pallid bat	G5	S3	BLM-S|SSC|USFS-S |	Chaparral | Coastal scrub | Desert wash | Great Basin grassland | Great Basin scrub | Mojavean desert scrub | Riparian woodland | Sonoran desert scrub | Upper montane coniferous forest | Valley & foothill grassland
Aplodontia rufa californica	Sierra Nevada mountain beaver	G5T3T4	S2S3	SSC	Riparian forest | Riparian scrub | Riparian woodland

TABLE B-2B
SHASTA COUNTY SPECIES OF SPECIAL CONCERN

Scientific Name	Common Name	Global Rank	State Rank	Other Status	Habitats
Corynorhinus townsendii	Townsend's big-eared bat	G3G4	S2	BLM-S| SSC|USFS-S-	Broadleaved upland forest | Chaparral | Chenopod scrub | Great Basin grassland | Great Basin scrub | Joshua tree woodland | Lower montane coniferous forest | Meadow & seep | Mojavean desert scrub | Riparian forest | Riparian woodland | Sonoran desert scrub
Erethizon dorsatum	North American porcupine	G5	S3		Broadleaved upland forest | Cismontane woodland | Closed-cone coniferous forest | Lower montane coniferous forest | North coast coniferous forest | Upper montane coniferous forest
Euderma maculatum	spotted bat	G4	S3	BLM-S |SSC	
Lasionycteris noctivagans	silver-haired bat	G5	S3S4		Lower montane coniferous forest | Oldgrowth | Riparian forest
Lasiurus blossevillii	western red bat	G5	S3	SSC	Cismontane woodland | Lower montane coniferous forest | Riparian forest | Riparian woodland
Lasiurus cinereus	hoary bat	G5	S4		Broadleaved upland forest | Cismontane woodland | Lower montane coniferous forest | North coast coniferous forest
Lepus americanus klamathensis	Oregon snowshoe hare	G5T3T4Q	S2	SSC	Riparian woodland
Martes caurina sierrae	Sierra marten	G5T3	S3	USFS-S	
Myotis evotis	long-eared myotis	G5	S3	BLM-S-Sensitive	
Myotis thysanodes	fringed myotis	G4	S3	BLM-S | USFS-S	

TABLE B-2B
SHASTA COUNTY SPECIES OF SPECIAL CONCERN

Scientific Name	Common Name	Global Rank	State Rank	Other Status	Habitats
Myotis volans	long-legged myotis	G5	S3		Upper montane coniferous forest
Myotis yumanensis	Yuma myotis	G5	S4	BLM-S	Lower montane coniferous forest | Riparian forest | Riparian woodland | Upper montane coniferous forest
Ochotona princeps schisticeps	gray-headed pika	G5T2T4	S2S4		Alpine talus & scree slope | Talus slope
Taxidea taxus	American badger	G5	S3	SSC	Alkali marsh | Alkali playa | Alpine | Alpine dwarf scrub | Bog & fen | Brackish marsh | Broadleaved upland forest | Chaparral | Chenopod scrub | Cismontane woodland | Closed-cone coniferous forest | Coastal bluff scrub | Coastal dunes | Coastal prairie
Reptile					
Emys marmorata	western pond turtle	G3G4	S3	BLM-S|SSC| USFS-S	Aquatic | Artificial flowing waters | Klamath/North coast flowing waters | Klamath/North coast standing waters | Marsh & swamp | Sacramento/San Joaquin flowing waters | Sacramento/San Joaquin standing waters | South coast flowing waters

Source: Rarefind (CDFW 2019)

SHASTA TARGET MAMMAL.AVIAN SPECIES CY 07-17

Sum of TAKE						CALYEAR											
COUNTY	**DA_TYPE**	**SPECIES**	**FATE**	**TARGET**	**INTENTIONAL**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**Grand Total**
SHASTA	**BIRD**	BLACKBIRDS, BREWER`S	**DISPERSED**	Y	Y									250			250
		BLACKBIRDS, BREWER`S	**KILLED**	Y	Y	619	374	22		37		190	21	54			1,317
		BLACKBIRDS, RED-WINGED	**DISPERSED**	Y	Y					26,000	198,300	456,400	902,600	299,800	665,187	865,113	3,413,400
		BLACKBIRDS, RED-WINGED	**KILLED**	Y	Y	831	5,859	4,291	2,497	3,171	10,868	4,303	5,070	21,412	8,090	5,782	72,174
		BLACKBIRDS, YELLOW-HEADED	**DISPERSED**	Y	Y								8,650	800			9,450
		BLACKBIRDS, YELLOW-HEADED	**KILLED**	Y	Y	390	1,022	396		5		61	473	317			2,664
		BLACKBIRDS, Z-(MIXED SPECIES)	**DISPERSED**	Y	Y								75,000				75,000
		COOTS, AMERICAN	**DISPERSED**	Y	Y						1,075	3,075	9,200	3,950			17,300
		COOTS, AMERICAN	**KILLED**	Y	Y	110		211	252		94	529	232	90		211	1,729
		COWBIRDS, BROWN-HEADED	**DISPERSED**	Y	Y									1,750			1,750
		COWBIRDS, BROWN-HEADED	**KILLED**	Y	Y	3,675	2,233	549		180	504	950	147	715			8,953
		DUCKS, BUFFLEHEAD	**DISPERSED**	Y	Y								15				15
		DUCKS, MALLARD	**DISPERSED**	Y	Y								435	100			535
		DUCKS, SCAUP, LESSER	**DISPERSED**	Y	Y								10				10
		DUCKS, TEAL, CINNAMON	**DISPERSED**	Y	Y								82				82
		DUCKS, WOOD	**DISPERSED**	Y	Y								94				94
		GEESE, WHITE-FRONTED, GREATER	**DISPERSED**	Y	Y					500							500
		SPARROWS, HOUSE	**KILLED**	Y	Y	4					35						39
		STARLINGS, EUROPEAN	**KILLED**	Y	Y	706	369	533		117	642	171	29	1			2,568
	BIRD Total					**6,335**	**9,857**	**6,002**	**2,749**	**30,010**	**211,518**	**465,679**	**1,002,058**	**329,239**	**673,277**	**871,106**	**3,607,830**
	MAMMAL	BEARS, BLACK	**FREED**	Y	Y				1								1
		BEARS, BLACK	**KILLED**	Y	Y	7	7	12	22	22	27	10	12	8	17	28	172
		BEARS, BLACK	**RELOCATED**	Y	Y		1			1							2
		BEARS, BLACK	**TRANSFER OF CUSTODY**	Y	Y				1		1					1	3
		BEAVERS	**KILLED**	Y	Y	13	9	7	14	12	11	3	3	5	9	1	87
		BEAVERS	**REMOVED/DESTROYED**	Y	Y		1	2									3
		BOBCATS	**KILLED**	Y	Y		1			1	6	2					10
		COYOTES	**DISPERSED**	Y	Y									1			1
		COYOTES	**KILLED**	Y	Y	84	55	53	48	75	93	60	47	42	46	23	626
		DEER, BLACK-TAILED	**KILLED**	Y	Y								1				1
		DOGS, FERAL, FREE-RANGING AND HYBRIDS	**KILLED**	Y	Y					1	1			1			3
		FOXES, GRAY	**KILLED**	Y	Y			4		1	3	2	3				13
		FOXES, GRAY	**RELOCATED**	Y	Y					1							1
		LIONS, MOUNTAIN (COUGAR)	**DISPERSED**	Y	Y				1								1
		LIONS, MOUNTAIN (COUGAR)	**KILLED**	Y	Y	16	6	6	8	13	5	8	9	5	7	2	85
		MUSKRATS	**KILLED**	Y	Y	815	1,168	301	391	90	113	120	95	195	9	109	3,406
		OPOSSUMS, VIRGINIA	**KILLED**	Y	Y			1		1			1				3
		RACCOONS	**KILLED**	Y	Y	1		1	12	1	1		11			1	28
		SKUNKS, STRIPED	**FREED**	Y	Y		1										1
		SKUNKS, STRIPED	**KILLED**	Y	Y	10		7	4	10	25	11	13	1		3	84
		SQUIRRELS, GROUND, CALIFORNIA	**KILLED**	Y	Y				19						3		22
		SWINE, FERAL	**DISPERSED**	Y	Y						11						11
		SWINE, FERAL	**KILLED**	Y	Y				3		1		3			3	10
	MAMMAL Total					**946**	**1,249**	**394**	**524**	**229**	**298**	**216**	**198**	**258**	**91**	**171**	**4,574**
SHASTA Total						**7,281**	**11,106**	**6,396**	**3,273**	**30,239**	**211,816**	**465,895**	**1,002,256**	**329,497**	**673,368**	**871,277**	**3,612,404**
SHASTA COUN	**MAMMAL**	COYOTES	**KILLED**	Y	Y			5	4				2	4		1	16
	MAMMAL Total							**5**	**4**				**2**	**4**		**1**	**16**
SHASTA COUNTY (AIRPORTS) Total								**5**	**4**				**2**	**4**		**1**	**16**
Grand Total						**7,281**	**11,106**	**6,401**	**3,277**	**30,239**	**211,816**	**465,895**	**1,002,258**	**329,501**	**673,368**	**871,278**	**3,612,420**

Animals Target Unintentional Taken Shasta County CY

CALYEAR	COUNTY	DA_TYPE	SPECIES	METHOD	FATE	RESULT_TARGET	RESULT_INTENTIONAL	Sum of TAKE
2012	SHASTA	MAMMAL	CATS, FERAL/FREE RANGING	TRAPS, CAGE	FREED	Y	N	1
			DOGS, FERAL, FREE-RANGING AND HYBRIDS	TRAPS, CAGE	FREED	Y	N	1
			SWINE, FERAL	TRAPS, CAGE	FREED	Y	N	1
	SHASTA Total							3
2012 Total								3
2014	SHASTA	MAMMAL	FOXES, GRAY	TRAPS, CAGE	FREED	Y	N	1
			RACCOONS	TRAPS, CULVERT	FREED	Y	N	1
	SHASTA Total							2
2014 Total								2
2016	SHASTA	MAMMAL	DOGS, FERAL, FREE-RANGING AND HYBRIDS	TRAPS, CAGE	TRANSFER	Y	N	1
			OTTERS, RIVER	TRAPS, BODY GRIP	KILLED	Y	N	1
	SHASTA Total							2
2016 Total								2
Grand Total								7

Animals NonTarget Unintentional Taken Shasta County CY

CA: 01/01/2007 to 12/31/2017

COUNTY	CALYEAR	DA_TYPE	SPECIES	METHOD	FATE	RESULT_TARGET	RESULT_INTENTIONAL	TAKE
SHASTA	2013	MAMMAL	OPOSSUMS, VIRGINIA	TRAPS, CAGE	FREED	N	N	4

Shasta All Take by Method CY

Sum of TAKE					CALYEAR											
COUNTY	DA_TYPE	FATE	SPECIES	METHOD	2,007	2,008	2,009	2,010	2,011	2,012	2,013	2,014	2,015	2,016	2,017	Grand Total
SHASTA	BIRD	DISPERSED	BLACKBIRDS, BREWER`S	FIREARMS									250			250
			BLACKBIRDS, RED-WINGED	FIREARMS					26,000	198,300	456,400	902,600	299,800	665,187	865,113	3,413,400
			BLACKBIRDS, YELLOW-HEADED	FIREARMS								8,650	800			9,450
			BLACKBIRDS, Z-(MIXED SPECIES)	FIREARMS								75,000				75,000
			COOTS, AMERICAN	FIREARMS						1,075	3,075	9,200	3,950			17,300
			COWBIRDS, BROWN-HEADED	FIREARMS									1,750			1,750
			DUCKS, BUFFLEHEAD	FIREARMS								15				15
			DUCKS, MALLARD	FIREARMS								435	100			535
			DUCKS, SCAUP, LESSER	FIREARMS								10				10
			DUCKS, TEAL, CINNAMON	FIREARMS								82				82
			DUCKS, WOOD	FIREARMS								94				94
			GEESE, WHITE-FRONTED, GREATER	WHISTLERS/SCREAMERS					500							500
		KILLED	BLACKBIRDS, BREWER`S	FIREARMS	42	60						17	54			173
				TRAPS, DECOY	577	314	22		37		190	4				1,144
			BLACKBIRDS, RED-WINGED	FIREARMS	701	5,581	4,088	2,497	3,028	10,868	4,277	5,069	21,412	8,090	5,782	71,393
				TRAPS, DECOY	130	278	203		143		26	1				781
			BLACKBIRDS, YELLOW-HEADED	FIREARMS		15						412	317			744
				TRAPS, DECOY	390	1,007	396		5		61	61				1,920
			COOTS, AMERICAN	FIREARMS	110		211	252		94	529	232	90		211	1,729
			COWBIRDS, BROWN-HEADED	FIREARMS	29	15						46	715			805
				TRAPS, DECOY	3,646	2,218	549		180	504	950	101				8,148
			SPARROWS, HOUSE	TRAPS, DECOY	4					35						39
			STARLINGS, EUROPEAN	FIREARMS								11	1			12
				TRAPS, DECOY	706	369	533		117	642	171	18				2,556
	BIRD Total				6,335	9,857	6,002	2,749	30,010	211,518	465,679	1,002,058	329,239	673,277	871,106	3,607,830
	MAMMAL	DISPERSED	COYOTES	FIREARMS									1			1
			LIONS, MOUNTAIN (COUGAR)	DOG				1								1
			SWINE, FERAL	FIREARMS						11						11
		FREED	BEARS, BLACK	TRAPS, CULVERT				1								1
			CATS, FERAL/FREE RANGING	TRAPS, CAGE						1						1
			DOGS, FERAL, FREE-RANGING AND HYBRIDS	TRAPS, CAGE						1						1
			FOXES, GRAY	TRAPS, CAGE								1				1
			OPOSSUMS, VIRGINIA	TRAPS, CAGE							4					4
			RACCOONS	TRAPS, CULVERT								1				1
			SKUNKS, STRIPED	TRAPS, CAGE		1										1
			SWINE, FERAL	TRAPS, CAGE						1						1
		KILLED	BEARS, BLACK	FIREARMS				4	5	4	1	2	2	3	2	23
				SNARES, FOOT/LEG				1	1	1						3
				TRAPS, CAGE			5		3	2			2		1	13
				TRAPS, CULVERT	7	7	7	17	13	20	9	10	4	14	25	133
			BEAVERS	FIREARMS	1	1			1	4	2		2	4		15
				SNARES, NECK	5	3	6	3	2	5			1	2	1	28
				TRAPS, BODY GRIP	7	5	1	11	8	2	1	3	2	3		43
				TRAPS, CAGE					1							1
			BOBCATS	FIREARMS						3						3
				SNARES, NECK						1	1					2
				TRAPS, CAGE		1			1	2	1					5
			COYOTES	CALLING DEVICE, ELECTRONIC	49	33	14	2	18	9	1	6		2	1	135
				CALLING DEVICE, MANUAL(HAND,BLOWN)	12	9	15	17	8	3	4	11		1		80
				FIREARMS	13	1	2	5	31	45	22	19	25	32	19	214
				FIXED WING		2	9									11
				SNARES, FOOT/LEG				7			2					9
				SNARES, NECK	10	10	13	17	18	36	31	11	17	11	3	177
			DEER, BLACK-TAILED	FIREARMS								1				1
			DOGS, FERAL, FREE-RANGING AND HYBRIDS	SNARES, NECK					1				1			2
				TRAPS, CAGE						1						1
			FOXES, GRAY	FIREARMS						3	1	1				5
				TRAPS, CAGE			4		1		1	2				8
			LIONS, MOUNTAIN (COUGAR)	CALLING DEVICE, ELECTRONIC	1											1
				FIREARMS	14	6	4	6	11	4	8	5	1	1		60
				TRAPS, CAGE	1		2	2	2	1		4	4	6	2	24

Shasta All Take by Method CY

Sum of TAKE					CALYEAR											
COUNTY	**DA_TYPE**	**FATE**	**SPECIES**	**METHOD**	**2,007**	**2,008**	**2,009**	**2,010**	**2,011**	**2,012**	**2,013**	**2,014**	**2,015**	**2,016**	**2,017**	**Grand Total**
SHASTA	**MAMMAL**	KILLED	**MUSKRATS**	CDFA (SLN) RODENT BAIT BLK								19				19
				FIREARMS	798	1,168	289	377	90	113	120	76	195	9	109	3,344
				TRAPS, BODY GRIP	17		12									29
				TRAPS, CAGE				14								14
			OPOSSUMS, VIRGINIA	CATCH POLE								1				1
				TRAPS, CAGE			1		1							2
			OTTERS, RIVER	TRAPS, BODY GRIP										1		1
			RACCOONS	FIREARMS						1						1
				TRAPS, CAGE	1		1	12	1			11			1	27
			SKUNKS, STRIPED	CATCH POLE				1								1
				FIREARMS	2		1		2	13	3	4				25
				HANDCAUGHT/GATHERED					1						2	3
				TRAPS, CAGE	8		6	3	7	12	8	9	1		1	55
			SQUIRRELS, GROUND, CALIFORNIA	FIREARMS				19								19
				TRAPS, SNAP (RAT, MOUSE, ETC.)										3		3
			SWINE, FERAL	FIREARMS				1		1		1				3
				TRAPS, CORRAL				2							3	5
				TRAPS, LIVE, FERAL HOGS								2				2
		RELOCATED	**BEARS, BLACK**	DRUG DELIVERY DEVICES (OTHER)		1										1
				TRAPS, CULVERT					1							1
			FOXES, GRAY	CATCH POLE					1							1
		REMOVED/DE	**BEAVERS**	HAND TOOLS		1	2									3
		TRANSFER OF	**BEARS, BLACK**	TRAPS, CAGE				1								1
				TRAPS, CULVERT						1					1	2
			DOGS, FERAL, FREE-RANGING AND HYBRIDS	TRAPS, CAGE										1		1
	MAMMAL Total				**946**	**1,249**	**394**	**524**	**229**	**301**	**220**	**200**	**258**	**93**	**171**	**4,585**
SHASTA Total					**7,281**	**11,106**	**6,396**	**3,273**	**30,239**	**211,819**	**465,899**	**1,002,258**	**329,497**	**673,370**	**871,277**	**3,612,415**
SHASTA COUNTY (AIRPORTS)	**MAMMAL**	KILLED	**COYOTES**	FIREARMS			2									2
				SNARES, NECK			3	4				2	4		1	14
	MAMMAL Total						**5**	**4**				**2**	**4**		**1**	**16**
SHASTA COUNTY (AIRPORTS) Total							**5**	**4**				**2**	**4**		**1**	**16**
Grand Total					**7,281**	**11,106**	**6,401**	**3,277**	**30,239**	**211,819**	**465,899**	**1,002,260**	**329,501**	**673,370**	**871,278**	**3,612,431**

Statewide Species and Fate (for Comparison to Shasta County)

Sum of TAKE		CALENDAR YEAR											
TAKE SPECIES	FATE	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Grand Total
BEARS, BLACK	DISPERSED	1			5	2	10	1	1	8	1		29
BEARS, BLACK	FREED	17	8	5	4	4	6	5	7	11	2	5	74
BEARS, BLACK	KILLED	148	83	137	175	126	134	70	167	88	83	134	1,345
BEARS, BLACK	RELOCATED	2	3	4		1				1		1	12
BEARS, BLACK	TRANSFER OF CUSTODY				4	3	2	1	7	4		24	45
BEAVERS	KILLED	1,086	1,359	1,135	1,110	869	999	1,167	1,153	997	912	887	11,674
BEAVERS	RELOCATED									2		1	3
BLACKBIRDS, BREWER`S	DISPERSED	4,232	32,807	90,760	34,246	18,399	21,139	12,910	11,274	6,216	10,308	4,993	247,284
BLACKBIRDS, BREWER`S	FREED			26	1								27
BLACKBIRDS, BREWER`S	KILLED	2,409	3,289	2,158	861	830	1,780	947	694	202	78	77	13,325
BLACKBIRDS, BREWER`S	RELOCATED			1									1
BLACKBIRDS, BREWER`S	TRANSFER OF CUSTODY			6									6
BLACKBIRDS, RED-WINGED	DISPERSED	11,784	3,571	12,990	49,461	28,595	268,330	467,328	919,951	333,582	685,926	878,141	3,659,659
BLACKBIRDS, RED-WINGED	FREED			24		11		1				2	38
BLACKBIRDS, RED-WINGED	KILLED	9,980	13,132	4,580	3,003	4,012	11,298	4,713	5,164	21,533	8,193	6,006	91,614
BLACKBIRDS, RED-WINGED	RELOCATED										1		1
BLACKBIRDS, TRI-COLORED	DISPERSED								265	14,535	3,425	7,368	25,593
BLACKBIRDS, TRI-COLORED	FREED										96	289	385
BLACKBIRDS, YELLOW-HEADED	DISPERSED		35			1	1	1	8,697	822			9,557
BLACKBIRDS, YELLOW-HEADED	FREED				1				13	3	1	16	34
BLACKBIRDS, YELLOW-HEADED	KILLED	500	1,776	396	4	10	10	61	483	320		1	3,561
BLACKBIRDS, YELLOW-HEADED	RELOCATED			26			56	1	4	19	3	49	158
BLACKBIRDS, Z-(MIXED SPECIES)	DISPERSED		12,345	115,250	12,150	3,711	164,291	18,655	122,515	18,117			467,034
BLACKBIRDS, Z-(MIXED SPECIES)	FREED		25	42									67
BLACKBIRDS, Z-(MIXED SPECIES)	KILLED			1,005	22								1,027
BOBCATS	DISPERSED					1	4	4	1				10
BOBCATS	FREED	6	8	9	3	3	5	3	4	4	4	1	50
BOBCATS	KILLED	57	81	73	53	58	84	44	28	12	16	11	517
BOBCATS	RELOCATED	4											4
COOTS, AMERICAN	DISPERSED	8,586	6,385	2,479	9,673	15,426	5,557	16,829	25,864	15,253	547	1,196	107,795
COOTS, AMERICAN	KILLED	2,092	2,537	1,977	612	1,673	3,301	2,739	1,158	1,051	292	253	17,685
COWBIRDS, BROWN-HEADED	DISPERSED	31	2	80	461	5,034	2,013	148	134	2,358	54	1,240	11,555
COWBIRDS, BROWN-HEADED	FREED	29		11									40
COWBIRDS, BROWN-HEADED	KILLED	7,055	6,087	1,993	821	522	879	1,110	364	999	817	563	21,210
COYOTES	DISPERSED	15	33	19	11	14	39	44	60	59	113	410	817
COYOTES	FREED	1	3	5		4	3	4	1	1		1	23
COYOTES	KILLED	6,963	6,160	6,530	5,326	5,746	5,696	4,988	4,083	3,958	3,702	3,514	56,666
COYOTES	RELOCATED	1											1
COYOTES	TRANSFER OF CUSTODY			1									1
CROWS, AMERICAN	DISPERSED	2,229	2,973	3,344	3,431	3,154	5,021	7,829	5,132	4,712	6,749	6,449	51,023
CROWS, AMERICAN	FREED											6	6
CROWS, AMERICAN	KILLED	555	553	722	565	788	646	521	475	305	240	335	5,705
DEER, BLACK-TAILED	DISPERSED		1		1		6			1			9
DEER, BLACK-TAILED	FREED		2	2	6				1	1			12
DEER, BLACK-TAILED	KILLED	6	11	11	8	8	3	16	15	22	20	2	122
DOGS, FERAL, FREE-RANGING AND HYBRIDS	DISPERSED				1	3	8	2	7	7	12	2	42
DOGS, FERAL, FREE-RANGING AND HYBRIDS	FREED	31	22	11	8	10	7	9	1		1	4	104
DOGS, FERAL, FREE-RANGING AND HYBRIDS	KILLED	33	32	36	29	28	13	13	20	3	13	7	227
DOGS, FERAL, FREE-RANGING AND HYBRIDS	RELOCATED		2	1									3
DOGS, FERAL, FREE-RANGING AND HYBRIDS	TRANSFER OF CUSTODY		3	6	15	12	7	24	9	3	10	4	93
FOXES, GRAY	DISPERSED			1		1	4	10	2	6	7	7	38
FOXES, GRAY	FREED	95	124	151	107	75	75	118	66	61	61	81	1,014
FOXES, GRAY	KILLED	134	202	171	193	200	179	177	126	99	121	112	1,714
FOXES, GRAY	RELOCATED	1	1			1				1			4
FOXES, GRAY	TRANSFER OF CUSTODY					4	2			1		1	8
LIONS, MOUNTAIN (COUGAR)	DISPERSED				3	3			10			2	18
LIONS, MOUNTAIN (COUGAR)	FREED	10	3	2	1	3				1		1	21
LIONS, MOUNTAIN (COUGAR)	KILLED	141	113	110	103	102	67	57	86	77	75	67	998
LIONS, MOUNTAIN (COUGAR)	TRANSFER OF CUSTODY											1	1
MUSKRATS	KILLED	836	1,201	324	427	166	138	146	1,277	228	48	109	4,900
MUSKRATS	RELOCATED				1								1
OPOSSUMS, VIRGINIA	DISPERSED			1				1	3	2		1	8
OPOSSUMS, VIRGINIA	FREED	92	129	68	61	43	129	106	29	14	22	16	709
OPOSSUMS, VIRGINIA	KILLED	1,176	1,183	1,198	1,013	1,218	1,024	793	633	731	630	1,011	10,610
OPOSSUMS, VIRGINIA	RELOCATED						9			2		1	12
OPOSSUMS, VIRGINIA	TRANSFER OF CUSTODY						1						1
RACCOONS	DISPERSED			3	2				1	4		87	97
RACCOONS	FREED	59	58	51	26	17	53	31	23	17	26	40	401
RACCOONS	KILLED	2,359	2,772	2,537	2,424	2,549	2,595	2,637	2,098	1,481	1,454	1,405	24,311
RACCOONS	RELOCATED	4		1					3				8
RACCOONS	TRANSFER OF CUSTODY			4	4		5	8				1	22
SKUNKS, STRIPED	DISPERSED				1	1	15	3	12	19	8	1	60
SKUNKS, STRIPED	FREED	24	10	3		3	8	2	4	44	115	135	348

Statewide Species and Fate (for Comparison to Shasta County)

Sum of TAKE		CALENDAR YEAR											
TAKE SPECIES	FATE	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Grand Total
SKUNKS, STRIPED	KILLED	5,036	5,497	4,680	4,533	3,922	3,780	3,473	3,475	2,771	2,488	2,866	42,521
SKUNKS, STRIPED	RELOCATED											2	2
SKUNKS, STRIPED	TRANSFER OF CUSTODY			9	3								12
SPARROWS, HOUSE	DISPERSED	3,965	3,500	3,458	2,520	113	30	253	7	285	278	182	14,591
SPARROWS, HOUSE	FREED				3			1					4
SPARROWS, HOUSE	KILLED	242	495	601	648	316	179	205	303	121	52	90	3,252
SPARROWS, HOUSE	RELOCATED		4										4
SQUIRRELS, GROUND, CALIFORNIA	DISPERSED	1,082	17			3	24	4	33	2	8	53	1,226
SQUIRRELS, GROUND, CALIFORNIA	FREED	23	46	19	21	60	6	34	6	3		5	223
SQUIRRELS, GROUND, CALIFORNIA	KILLED	3,078	2,235	3,050	4,472	4,356	4,383	6,994	5,904	5,789	5,834	5,761	51,856
STARLINGS, EUROPEAN	DISPERSED	14,584	29,860	59,040	46,895	62,412	50,751	33,942	25,227	103,772	143,302	56,408	626,193
STARLINGS, EUROPEAN	FREED	5				1	6	4				2	18
STARLINGS, EUROPEAN	KILLED	14,620	14,271	21,019	33,214	18,196	9,666	6,498	6,848	1,729	2,572	3,169	131,802
SWINE, FERAL	DISPERSED						11						11
SWINE, FERAL	FREED	3		3		1	2		1	109	205	10	334
SWINE, FERAL	KILLED	578	833	946	840	884	883	1,059	717	624	690	873	8,927
SWINE, FERAL	TRANSFER OF CUSTODY				5	2	4					4	15
Grand Total		218,610	455,300	609,132	527,811	407,828	956,918	1,217,664	1,620,498	1,087,595	1,587,450	2,100,009	10,788,815

Table B-5
APHIS-WS Mammals Removed (Total Take and County-State Comparison)

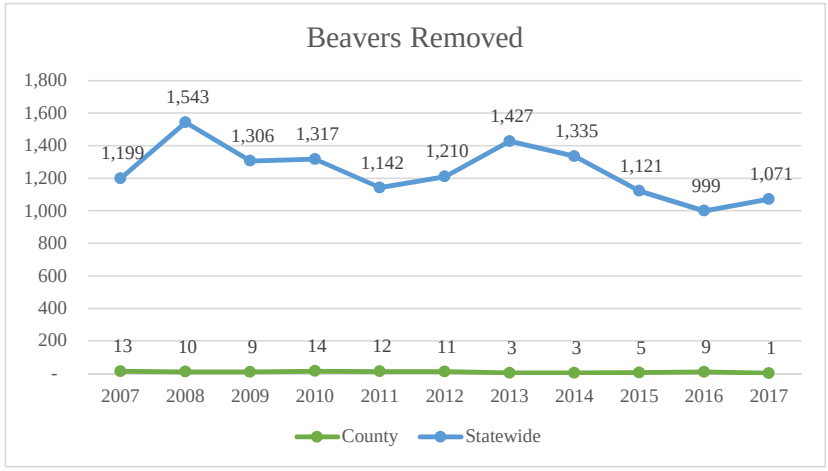
COUNTY MAMMALS	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**TOTAL**
BEARS, BLACK	7	7	12	22	22	27	10	12	8	17	28	172
BEAVERS	13	10	9	14	12	11	3	3	5	9	1	90
BOBCATS		1			1	6	2					10
COYOTES	84	55	58	52	75	93	60	49	46	46	24	642
DEER, BLACK-TAILED								1				1
DOGS, FERAL, FREE-RANGING AND HYBRIDS					1	1			1			3
FOXES, GRAY			4		1	3	2	3				13
LIONS, MOUNTAIN (COUGAR)	16	6	6	8	13	5	8	9	5	7	2	85
MUSKRATS	815	1,168	301	391	90	113	120	95	195	9	109	3,406
OPOSSUMS, VIRGINIA			1		1			1				3
RACCOONS	1		1	12	1	1		11			1	28
SKUNKS, STRIPED	10		7	4	10	25	11	13	1		3	84
SQUIRRELS, GROUND, CALIFORNIA				19						3		22
SWINE, FERAL (WILD PIG)				3		1		3			3	10
STATEWIDE MAMMALS												
BEARS, BLACK	148	83	137	175	126	134	70	167	88	83	134	1,345
BEAVERS	1,199	1,543	1,306	1,317	1,142	1,210	1,427	1,335	1,121	999	1,071	13,670
BOBCATS	57	81	73	53	58	84	44	28	12	16	11	517
COYOTES	6,963	6,160	6,532	5,326	5,747	5,699	4,995	4,087	3,971	3,702	3,514	56,696
DEER, BLACK-TAILED	6	11	11	8	8	3	16	15	22	20	2	122
DOGS, FERAL, FREE-RANGING AND HY	33	32	36	29	28	13	13	20	3	13	7	227
FOXES, GRAY	134	202	171	193	200	179	177	126	99	121	112	1,714
LIONS, MOUNTAIN (COUGAR)	141	113	110	103	102	67	57	86	77	75	67	998
MUSKRATS	836	1,201	324	427	166	138	146	1,277	228	48	109	4,900
OPOSSUMS, VIRGINIA	1,176	1,183	1,198	1,013	1,218	1,024	796	633	731	630	1,011	10,613
RACCOONS	2,359	2,772	2,537	2,424	2,549	2,595	2,637	2,098	1,481	1,454	1,405	24,311
SKUNKS, STRIPED	5,036	5,497	4,680	4,533	3,922	3,780	3,473	3,475	2,771	2,488	2,866	42,521
SQUIRRELS, GROUND, CA	3,078	2,235	3,050	4,706	4,581	4,774	7,580	7,454	6,728	6,143	5,834	56,163
SWINE, FERAL (WILD PIG)	578	833	946	840	884	883	1,059	717	624	690	873	8,927

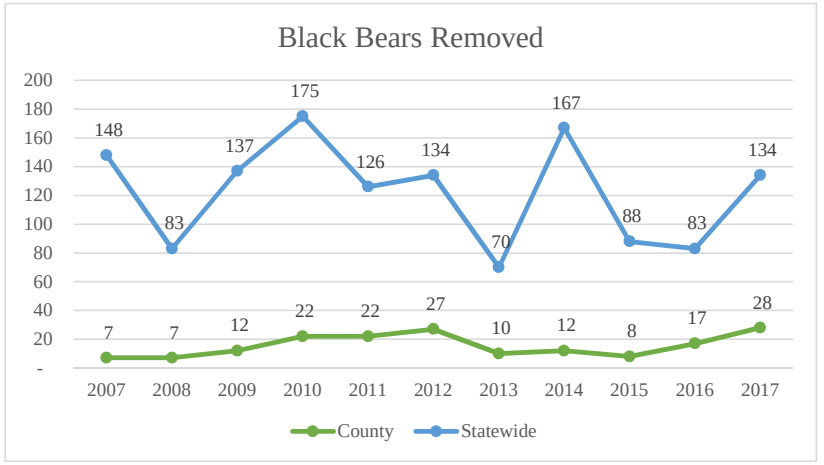
Table B-5
APHIS-WS Mammals Removed (Total Take and County-State Comparison)

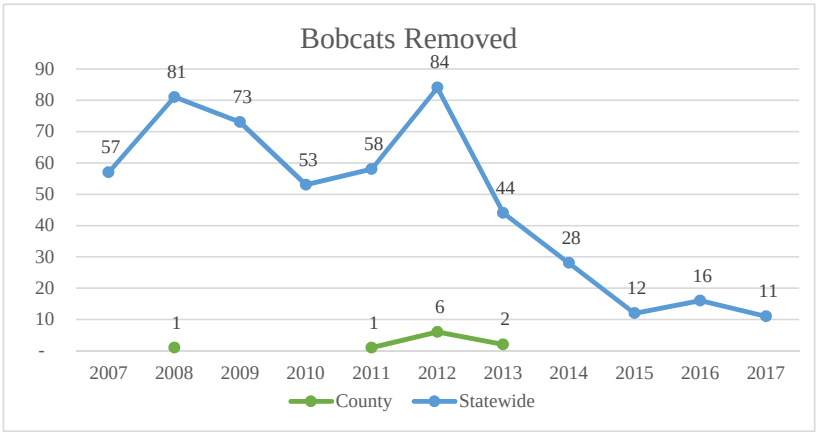
COUNTY PERCENT STATEWIDE TAKE	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	TOTAL
BEARS, BLACK	4.7%	8.4%	8.8%	12.6%	17.5%	20.1%	14.3%	7.2%	9.1%	20.5%	20.9%	12.8%
BEAVERS	1.1%	0.6%	0.7%	1.1%	1.1%	0.9%	0.2%	0.2%	0.4%	0.9%	0.1%	0.7%
BOBCATS	0.0%	1.2%	0.0%	0.0%	1.7%	7.1%	4.5%	0.0%	0.0%	0.0%	0.0%	1.9%
COYOTES	1.2%	0.9%	0.8%	0.9%	1.3%	1.6%	1.2%	1.1%	1.1%	1.2%	0.7%	1.1%
DEER, BLACK-TAILED	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	5.0%	0.0%	0.0%	0.0%	0.4%
DOGS, FERAL, FREE-RANGING AND HY	0.0%	0.0%	0.0%	0.0%	3.6%	7.7%	0.0%	0.0%	33.3%	0.0%	0.0%	1.3%
FOXES, GRAY	0.0%	0.0%	2.3%	0.0%	0.5%	1.7%	1.1%	2.4%	0.0%	0.0%	0.0%	0.8%
LIONS, MOUNTAIN (COUGAR)	11.3%	5.3%	5.5%	7.8%	12.7%	7.5%	14.0%	10.5%	6.5%	9.3%	3.0%	8.5%
MUSKRATS	97.5%	97.3%	92.9%	91.6%	54.2%	81.9%	82.2%	7.4%	85.5%	18.8%	100.0%	69.5%
OPOSSUMS, VIRGINIA	0.0%	0.0%	0.1%	0.0%	0.1%	0.0%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%
RACCOONS	0.0%	0.0%	0.0%	0.5%	0.0%	0.0%	0.0%	0.5%	0.0%	0.0%	0.1%	0.1%
SKUNKS, STRIPED	0.2%	0.0%	0.1%	0.1%	0.3%	0.7%	0.3%	0.4%	0.0%	0.0%	0.1%	0.2%
SQUIRRELS, GROUND, CALIFORNIA	0.0%	0.0%	0.0%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
SWINE, FERAL (WILD PIG)	0.0%	0.0%	0.0%	0.4%	0.0%	0.1%	0.0%	0.4%	0.0%	0.0%	0.3%	0.1%

Source: Attachment B Table B-3 and Table B-4

Table B-5
APHIS-WS Mammals Removed (Total Take and County-State Comparison)







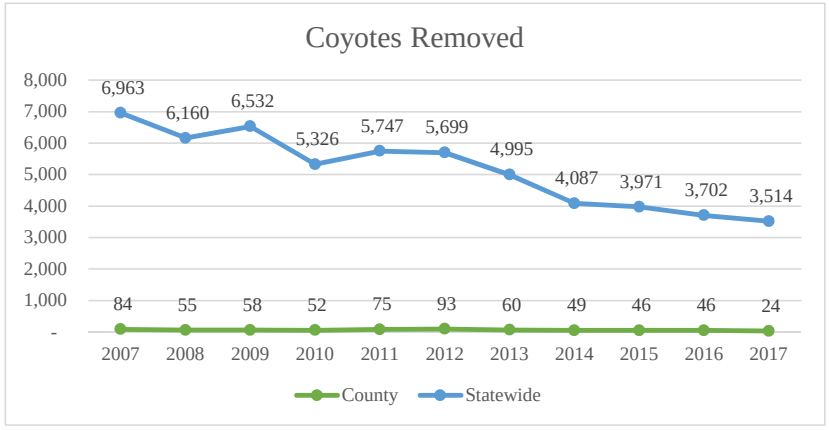
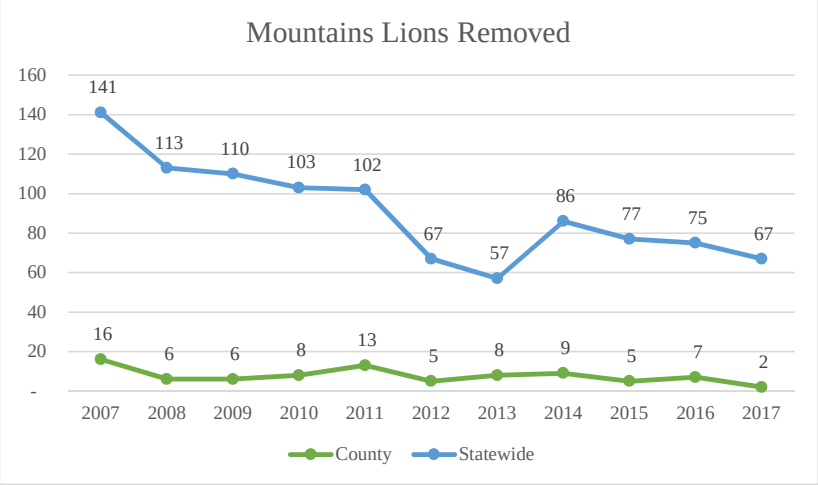


Table B-5
APHIS-WS Mammals Removed (Total Take and County-State Comparison)



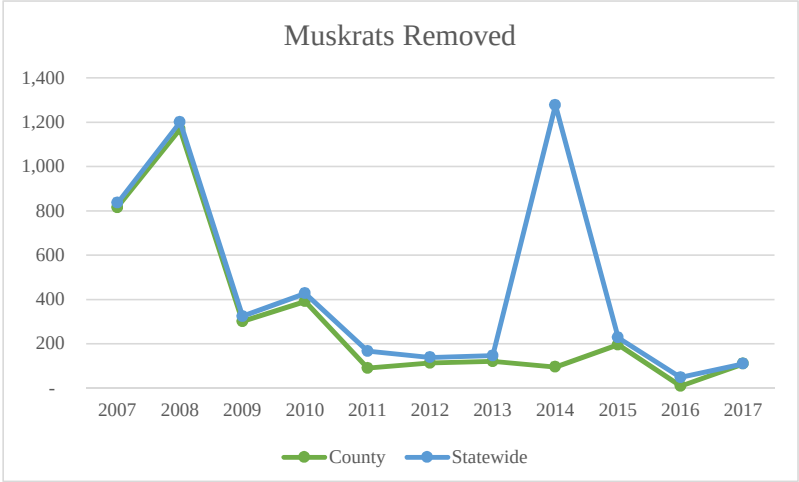


TABLE B-6

APHIS-WS AVIAN SPECIES REMOVED (TOTAL TAKE AND COUNTY-STATE COMPARISON)

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	TOTAL
COUNTY												
BLACKBIRDS, BREWER`S	619	374	22		37		190	21	54			1,317
BLACKBIRDS, RED-WINGED	831	5,859	4,291	2,497	3,171	10,868	4,303	5,070	21,412	8,090	5,782	72,174
BLACKBIRDS, YELLOW-HEADED	390	1,022	396		5		61	473	317			2,664
BLACKBIRDS TOTAL	1,840	7,255	4,709	2,497	3,213	10,868	4,554	5,564	21,783	8,090	5,782	76,155
COOTS, AMERICAN	110		211	252		94	529	232	90		211	1,729
COWBIRDS, BROWN-HEADED	3,675	2,233	549		180	504	950	147	715			8,953
SPARROWS, HOUSE	4					35						39
STARLINGS, EUROPEAN	706	369	533		117	642	171	29	1			2,568
AVIAN TOTAL	6,335	9,857	6,002	2,749	3,510	12,143	6,204	5,972	22,589	8,090	5,993	89,444
STATEWIDE												
BLACKBIRDS, BREWERS TOTAL	2,409	3,289	2,158	861	859	1,798	949	696	202	78	77	13,376
BLACKBIRDS, RED-WINGED	9,980	13,132	4,580	3,003	4,012	11,298	4,713	5,164	21,533	8,193	6,006	91,614
BLACKBIRDS, YELLOW-HEADED	500	1,776	396	4	10	10	61	483	320		1	3,561
BLACKBIRDS TOTAL	15,298	21,486	9,292	4,729	5,740	14,904	6,672	7,039	22,257	8,349	6,161	121,927
COOTS, AMERICAN	2,092	2,537	1,977	612	1,673	3,301	2,739	1,158	1,051	292	253	17,685
COWBIRDS, BROWN-HEADED	7,055	6,087	1,993	821	522	879	1,110	364	999	817	563	21,210
SPARROWS, HOUSE	249	508	632	662	321	187	215	304	122	53	92	3,345
STARLINGS, EUROPEAN	14,620	14,273	21,022	33,216	18,200	9,666	6,498	6,850	1,729	2,573	3,169	131,816
AVIAN TOTAL	36,905	41,602	32,758	39,179	25,568	27,121	16,283	15,017	25,956	12,006	10,161	282,556
PERCENT STATEWIDE TAKE												
BLACKBIRDS, BREWER`S	25.7%	11.4%	1.0%	0.0%	4.3%	0.0%	20.0%	3.0%	26.7%	0.0%	0.0%	1.4%
BLACKBIRDS, RED-WINGED	8.3%	44.6%	93.7%	83.2%	79.0%	96.2%	91.3%	98.2%	99.4%	98.7%	96.3%	78.8%
BLACKBIRDS, YELLOW-HEADED	78.0%	57.5%	100.0%	0.0%	50.0%	0.0%	100.0%	97.9%	99.1%	0.0%	0.0%	74.8%
BLACKBIRDS TOTAL	12.0%	33.8%	50.7%	52.8%	56.0%	72.9%	68.3%	79.0%	97.9%	96.9%	93.8%	62.5%
COOTS, AMERICAN	5.3%	0.0%	10.7%	41.2%	0.0%	2.8%	19.3%	20.0%	8.6%	0.0%	83.4%	9.8%
COWBIRDS, BROWN-HEADED	52.1%	36.7%	27.5%	0.0%	34.5%	57.3%	85.6%	40.4%	71.6%	0.0%	0.0%	42.2%
SPARROWS, HOUSE	1.6%	0.0%	0.0%	0.0%	0.0%	18.7%	0.0%	0.0%	0.0%	0.0%	0.0%	1.2%
STARLINGS, EUROPEAN	4.8%	2.6%	2.5%	0.0%	0.6%	6.6%	2.6%	0.4%	0.1%	0.0%	0.0%	1.9%

Source: Attachment B Table B-3 and Table B-4

TABLE B-6
APHIS-WS AVIAN SPECIES REMOVED (TOTAL TAKE AND COUNTY-STATE COMPARISON)

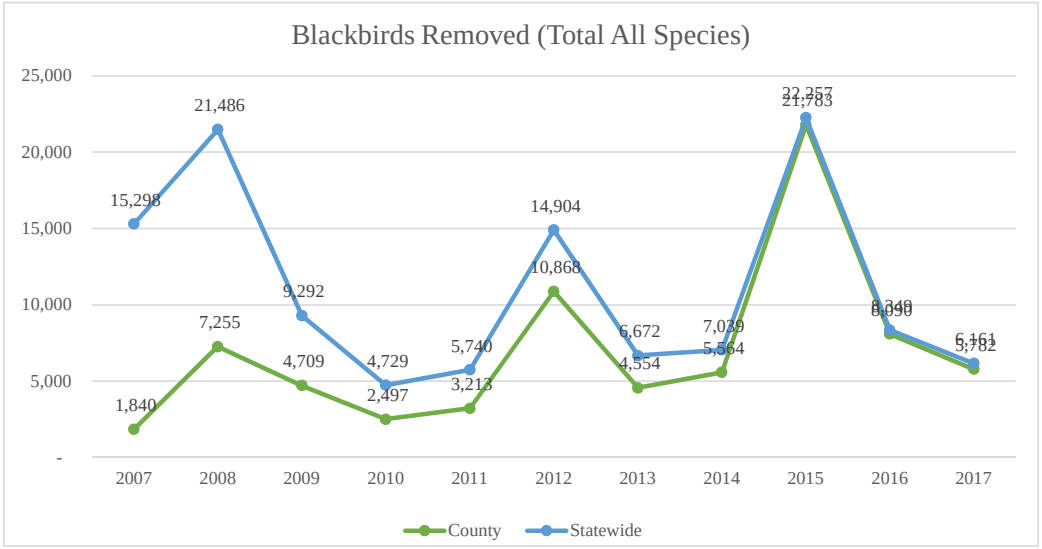


Table B-7
American Beaver Population and Take Data

APHIS-WS Annual Take		
Year	**Shasta County[1]**	**California[2]**
2007	13	113
2008	9	184
2009	7	171
2010	14	207
2011	12	273
2012	11	211
2013	3	260
2014	3	182
2015	5	124
2016	9	87
2017	1	184
TOTAL	**87**	**1,996**
MED/YR	**9**	**184**
County % of state take (11-year median)		**4.4%**

Notes:
1. County take from Attachment B Table B-3
2. Statewide take from Attachment B Table B-4
3. Calculated from CALVEG (USFS 2018)
4. Population dynamics from: CDFG (2004) Appendix 2 (Beaver Population Model)
5. From: CDFG (2004) Appendix 2 (Beaver Population Model)

County Population Estimate		
Suitable county land area (stream kilometers) [3]	3,775	
Density (individuals per stream kilometer)[4]	0.2	(low)
	3	(high)
Sex ratio	0.5	
Female breeding success	0.80	
Litter size	3.5	
Total Adults	755	(low)
	9,438	(high)
Breeding females	385	(low)
	4,813	(high)
Young at den	1,078	(low)
	13,477	(high)
County population before natural mortality (adults + young)	1,833	(low)
	22,914	(high)

State Population Estimate	
State low population estimate[5]	10,789

County APHIS Baseline Take	
Median annual take over 11-year period	9
% median take per year of County low population estimate	0.49%
% median take per year of state low population estimate	0.08%
% highest historic take of County low population estimate	1%
% highest historic take of state low population estimate	0.1%

Table B-7
American Beaver Population and Take Data

Sustainable Take Threshold	
Sustainable cumulative annual harvest (% of population)[6]	30%

Cumulative Take Estimates	
County 11-year median take by APHIS (2007-2017)	9
County median take compared to low population	0.5%
County median take plus 33%[7]	12
County median take plus 33% compared to county low population	0.7%
County median plus 33% compared to state low population	0.1%
County median plus 33% plus county average trapping = cumulative county[8]	17
Cumulative county median take compared to county low population	1%
State 11-year median take by APHIS (2007-2017)	184
State median take plus 33%	245
State median take plus 33% plus state average trapping = cumulative state[8]	251
State median plus 33% plus trapping state compared to state low population	2%
County cumulative plus state cumulative	268
Total county plus state cumulative compared to state low population	2%
County contribution	6.3%

Notes:

6. From CDFG (2004: 39) includes trapping, damage control, private property owners, entities, or other persons

7. * 33% is added to account for take by private parties and all other known sources of mortality. It is the factor applied by APHIS-WS in recent documents (see USDA 2015: 44) in assessing impacts of its program, in CDFG (2004: species population models appendices) for APHIS-WS take, and has been used in this analysis for consistency.

8. Trapping data from: CDFW trapper reports FY 2017-2018 CDFW (2018c)

Table B-8
Black Bear Population and Take Data

APHIS-WS Annual Take		
Year	**Shasta County[1]**	**California[2]**
2007	13	148
2008	10	83
2009	9	137
2010	14	175
2011	12	126
2012	11	134
2013	3	70
2014	3	167
2015	5	88
2016	9	83
2017	1	134
TOTAL	**90**	**1,345**
MED/YR	**9**	**134**
County % of state take (11-year median)		**6.7%**

County Population Estimate		
Suitable county land area (square miles)[3]	2,454	
Density (individuals per square mile)[4]	1.00	(low)
	2.50	(high)
Sex ratio	NA	
Female breeding success	NA	
Litter size	NA	
Total adults	2,454	(low)
	6,135	(high)
Breeding females	NA	(low)
	NA	(high)
Young at den	NA	(low)
	NA	(high)
County population before natural mortality (adults + young)	2,454	(low)
	6,135	(high)

State Population Estimate	
State low population estimate[5]	17,000

County APHIS Baseline Take	
Median annual take over 10-year period	9.0
% median take per year of County low population estimate	0.37%
% median take per year of state low population estimate	0.053%
% highest historic take (14 individuals) of County low population estimate	0.6%
% highest historic take (14 individuals) of state low population estimate	0.08%

Notes:
1. County take from Attachment B Table B-3
2. Statewide take from Attachment B Table B-4
3. Calculated from CALVEG (USFS 2018)
4. Population dynamics from: Draft Environmental Document Sections 365, 366, 367.5, 401, 708 Title 14, California Code of Regulations Regarding Bear Hunting (CDFW 2011)
5. Environmental Document Sections 365, 366, 367.5, 401, 708 Title 14, California Code of Regulations Regarding Bear Hunting (CDFW 2011)

Table B-8
Black Bear Population and Take Data

Sustainable Take Threshold	
Sustainable cumulative annual statewide harvest all sources (individuals)[6]	3,875

Cumulative Take Estimates	
County 11-year median take by APHIS (2007-2017)	9.0
County median take compared to low population	0.4%
County median take plus 33%[7]	12
County median take plus 33% compared to county low population	0.5%
County median plus 33% compared to state low population	0.070%
County median plus 33% plus county median trapping plus hunting equals cumulative county[8]	14.0
Cumulative county average take compared to county low population	0.6%
State 11-year median take by APHIS (2007-2017)	134.0
State average take plus 33%	178
State average take plus 33% plus state average trapping plus hunting (1957-2009) equals cumulative state[8]	1,581
State average plus 33% plus trapping state compared to state low population	9.3%
County cumulative plus state cumulative	1,595
Total county plus state cumulative compared to state low population	9.4%
County contribution	0.9%

Notes:
6. From: CDFW (2011: 25)
7. 33% is added to account for take by private parties and all other known sources of mortality. It is the factor applied by APHIS-WS in recent documents (see USDA 2015: 44) in assessing impacts of its program, in CDFG (2004: species population models appendices) for APHIS-WS take, and has been used in this analysis for consistency.
8. Hunting and trapping data from 2017-2018 (CDFW 2018a); Draft Environmental Document
Sections 365, 366, 367.5, 401, 708 Title 14, California Code of Regulations Regarding Bear Hunting (CDFW 2011)

Table B-9
Bobcat Population and Take Data

APHIS-WS Annual Take		
Year	**Shasta County[1]**	**California[2]**
2007		57
2008	1	81
2009		73
2010		53
2011	1	58
2012	6	84
2013	2	44
2014		28
2015		12
2016		16
2017		11
TOTAL	**10**	**517**
MED/YR	**1.5**	**53**
County % of state take (11-year median)		**1.9%**

Notes:
1. County take from Attachment B Table B-3
2. Statewide take from Attachment B Table B-4
3. Calculated from VEGMAP (USFS 2018)
4. Population dynamics from: CDFG (2004) Appendix 3 (Bobcat Population Model)
5. From: CDFG (2004) Appendix 3 (Bobcat Population Model)

County Population Estimate		
Suitable county land area (square miles)[3]	2,770	
Density (individuals per square mile)[4]	0.55	(low)
	0.58	(high)
Sex ratio	0.5	
Female breeding success	0.53	
Litter size	2.7	
Total adults	1,524	(low)
	1,607	(high)
Breeding females	762	(low)
	803	(high)
Young at den	1,090	(low)
	1,150	(high)
County population before natural mortality (adults + young)	2,614	(low)
	2,756	(high)

State Population Estimate	
State low population estimate[5]	120,441

County APHIS Baseline Take	
Median annual take over 11-year period	1.5
% median take per year of County low population estimate	0.06%
% median take per year of state low population estimate	0.001%
% highest historic take (6 individuals) of County low population estimate	0.2%
% highest historic take (6 individuals) of state low population estimate	0.005%

Table B-9

Bobcat Population and Take Data

Sustainable Take Threshold	
Sustainable cumulative annual statewide harvest all sources (individuals)[6]	14,400

Cumulative Take Estimates	
County 11-year median take by APHIS (2007-2017)	1.5
County median take compared to low population	0.1%
County median take plus 33%[7]	2
County median take plus 33% compared to county low population	0.1%
County median plus 33% compared to state low population	0.002%
County median plus 33% plus county trapping plus hunting equals cumulative county[8]	9.0
Cumulative county median take compared to county low population	0.3%
State 11-year median take by APHIS (2007-2017)	53.0
State median take plus 33%	70
State median take plus 33% plus state trapping plus hunting equals cumulative state[8]	401
State median plus 33% plus trapping state compared to state low population	0.3%
County cumulative plus state cumulative	410
Total county plus state cumulative compared to state low population	0.3%
County contribution	2.2%

Notes:
6. From: CDFG (2004:57) includes trapping, damage control, private property owners, entities, or other persons
7. 33% is added to account for take by private parties and all other known sources of mortality. It is the factor applied by APHIS-WS in recent documents (see USDA 2015: 44) in assessing impacts of its program, in CDFG (2004): species population models appendices) for APHIS-WS take, and has been used in this analysis for consistency.
8. Hunting and trapping data from CDFW (2017b, 2018b).

Table B-10
Common Muskrat Population and Take Data

APHIS-WS Annual Take		
Year	**Shasta County[1]**	**California[2]**
2007	815	836
2008	1,168	1,201
2009	301	324
2010	391	427
2011	90	166
2012	113	138
2013	120	146
2014	95	1,277
2015	195	228
2016	9	48
2017	109	109
TOTAL	**3,406**	**4,900**
MED/YR	**120**	**228**
County % of state take (11-year median)		**69.5%**

County Population Estimate		
Suitable county stream (kilometers)[3]	3,775	
Density (individuals per stream kilometer)[4]	3.0	(low)
	15	(high)
Sex ratio	0.5	
Female breeding success	0.80	
Litter size	19.3	
Total Adults	11,325	(low)
	56,625	(high)
Breeding females	8,068	(low)
	40,338	(high)
Young at den	155,705	(low)
	778,523	(high)
County population before natural mortality (adults + young)	11,325	(low)
	56,625	(high)

State Population Estimate	
State low population estimate[5]	22,410

County APHIS Baseline Take	
Median annual take over 11-year period	120
% median take per year of County low population estimate	1.1%
% median take per year of state low population estimate	0.535%
% highest historic take (1168 individuals) of County low population estimate	10%
% highest historic take annual (1168 individuals) of state low population estimate	5.2%

Notes:
1. County take from Attachment B Table B-3
2. Statewide take from Attachment B Table B-4
3. Calculated from CALVEG (USFS 2018)
4. Population dynamics from: CDFG (2004) Appendix 7 (Musjrat Population Model)
5. From: CDFG (2004) Appendix 7 (Muskrat Population Model)

Table B-10
Common Muskrat Population and Take Data

Sustainable Take Threshold	
Sustainable cumulative annual harvest (% of population)[6]	60%

Cumulative Take Estimates	
County 11-year median take by APHIS (2007-2017)	120
County median take compared to low population	1.1%
County median take plus 33%[7]	160
County median take plus 33% compared to county low population	1.4%
County median plus 33% compared to state low population	0.7%
County median plus 33% plus county average trapping = cumulative county[8]	160
Cumulative county median take compared to county low population	1%
State 11-year median take by APHIS (2007-2017)	228
State median take plus 33%	303
State median take plus 33% plus state average trapping = cumulative state[8]	1,298
State median plus 33% plus trapping state compared to state low population	6%
County cumulative plus state cumulative	1,458
Total county plus state cumulative compared to state low population	7%
County contribution	10.9%

Notes:
6. From CDFG (2004: 42)includes trapping, damage control, private property owners, entities, or other persons
7. * 33% is added to account for take by private parties and all other known sources of mortality. It is the factor applied by APHIS-WS in recent documents (see USDA 2015: 44) in assessing impacts of its program, in CDFG (2004: species population models appendices) for APHIS-WS take, and has been used in this analysis for consistency.
8. Trapping data from: CDFW trapper reports FY 2017-2018 CDFW (2018c)

Table B-11
Coyote Population and Take Data

APHIS-WS Annual Take		
Year	**Shasta County[1]**	**California[2]**
2007	84	6,963
2008	55	6,160
2009	58	6,532
2010	52	5,326
2011	75	5,747
2012	93	5,699
2013	60	4,995
2014	49	4,087
2015	46	3,971
2016	46	3,702
2017	24	3,514
TOTAL	**642**	**56,696**
MED/YR	**55**	**5,326**
County % of state take (11-year median)		**1.1%**

County Population Estimate		
Suitable county land area (square miles)[3]	2,632	
Density (individuals per square mile)[4]	1	(low)
	5	(high)
Sex ratio	0.5	
Female breeding success	0.65	
Litter size	5.5	
Total Adults	2,632	(low)
	13,160	(high)
Breeding females	1,316	(low)
	6,580	(high)
Young at den	4,705	(low)
	23,524	(high)
County population before natural mortality (adults + young)	7,337	(low)
	36,684	(high)

State Population Estimate	
State low population estimate[5]	431,342

County APHIS Baseline Take	
Median annual take over 11-year period	55
% median take per year of County low population estimate	0.75%
% median take per year of state low population estimate	0.013%
% highest historic take (93 individuals) of County low population estimate	1.3%
% highest historic take annual (93 individuals) of state low population estimate	0.02%

Notes:
1. County take from Attachment B Table B-3
2. Statewide take from Attachment B Table B-4
3. Calculated from VEGMAP (USFS 2018)
4. Population dynamics from: CDFG (2004) Appendix 4 (Coyote Population Model)
5. From: CDFG (2004) Appendix 4 (Coyote Population Model)

Table B-11
Coyote Population and Take Data

Sustainable Take Threshold	
Sustainable cumulative annual harvest (% of population)[6]	60%
Sustainable annual harvest state low population estimate using 60%	258,805

Cumulative Take Estimates	
County 11-year median take by APHIS (2007-2017)	55
County median take compared to low population	0.75%
County median take plus 33%[7]	73
County median take plus 33% compared to county low population	1.0%
County median plus 33% compared to state low population	0.0%
County median plus 33% plus county median trapping + hunting = cumulative county[8]	1,565
Cumulative county median take compared to county low population	21%
State 11-year median take by APHIS (2007-2017)	5,326
State median take plus 33%	7,084
State median take plus 33% plus state median trapping + hunting = cumulative state[8]	55,638
State median plus 33% plus trapping state compared to state low population	13%
County cumulative plus state cumulative	57,203
Total county plus state cumulative compared to state low population	13.3%
County contribution	2.7%

Notes:
6. From: Pitt, Knowlton, and Fox (2001)
7. * 33% is added to account for take by private parties and all other known sources of mortality. It is the factor applied by APHIS-WS in recent documents (see USDA 2015: 44) in assessing impacts of its program, in CDFG (2004: species population models appendices) for APHIS-WS take, and has been used in this analysis for consistency.
8. Trapping data from: CDFW trapper reports FY 1997-98 to FY 2015-16 (ave 14/yr) CDFW (2017a)
Hunting data from: CDFW game take hunter surveys FY 1997-98
Through FY 2010-11 (most recent) (ave 1478/year) (CDFW 2017c)

Table B-12
Gray Fox Population and Take Data

APHIS-WS Annual Take		
Year	**Shasta County[1]**	**California[2]**
2007		134
2008		202
2009	4	171
2010		193
2011	1	200
2012	3	179
2013	2	177
2014	3	126
2015		99
2016		121
2017		112
TOTAL	**13**	**1,714**
MED/YR	**3**	**171**
County % of state take (11-year median)		**0.8%**

Notes:
1. County take from Attachment B Table B-3
2. Statewide take from Attachment B Table B-4
3. Calculated from VEGMAP (USFS 2018)
4. Population dynamics from: CDFG (2004) Appendix 5 (Gray Fox Population Model)
5. From: CDFG (2004) Appendix 5 (Gray Fox Population Model)

County Population Estimate		
Suitable county land area (square miles)[3]	2,682	
Density (individuals per square mile)[4]	1	(low)
	3	(high)
Sex ratio	0.5	
Female breeding success	0.10	
Litter size	3.8	
Total Adults	119,690	(low)
	363,858	(high)
Breeding females	53,442	(low)
	162,463	(high)
Young at den	203,048	(low)
	617,358	(high)
County population before natural mortality (adults + young)	322,738	(low)
	981,216	(high)

State Population Estimate	
State low population estimate[5]	119,690

County APHIS Baseline Take	
Median annual take over 11-year period	3
% median take per year of County low population estimate	0.001%
% median take per year of state low population estimate	0.0025%
% highest historic take (4 individuals) of County low population estimate	0.002%
% highest historic take (4 individuals) of state low population estimate	0.004%

Table B-12
Gray Fox Population and Take Data

Sustainable Take Threshold	
Sustainable cumulative annual harvest (% of population)[6]	25%

Cumulative Take Estimates	
County 11-year median take by APHIS (2007-2017)	3
County median take compared to low population	0.001%
County median take plus 33%[7]	4
County median take plus 33% compared to county low population	0.001%
County median plus 33% compared to state low population	0.003%
County median plus 33% plus county median trapping + hunting = cumulative county[8]	10
Cumulative county median take compared to county low population	0.003%
State 11-year median take by APHIS (2007-2017)	171
State median take plus 33%	227
State median take plus 33% plus state median trapping + hunting = cumulative state[8]	740
State median plus 33% plus trapping state compared to state low population	1%
County cumulative plus state cumulative	750
Total county plus state cumulative compared to state low population	1%
County contribution	1.3%

Notes:
6. From CDFG (2004: 41) includes trapping, damage control, private property owners, entities, or other persons
7. * 33% is added to account for take by private parties and all other known sources of mortality. It is the factor applied by APHIS-WS in recent documents (see USDA 2015: 44) in assessing impacts of its program, in CDFG (2004: species population models appendices) for APHIS-WS take, and has been used in this analysis for consistency.
8. Trapping data from: CDFW trapper reports FY 2017-2018 CDFW (2018c)

Table B-13
Mountain Lion Take and Population Data

APHIS-WS Annual Take		
Year	**Shasta County[1]**	**California[2]**
2007	16	141
2008	6	113
2009	6	110
2010	8	103
2011	13	102
2012	5	67
2013	8	57
2014	9	86
2015	5	77
2016	7	75
2017	2	67
TOTAL	**85**	**998.0**
MED/YR	**7**	**86.0**
County % of state take (11-median average)		**8.5%**

County Population Estimate		
Suitable county land area (square miles)[3]	2,770	
Density (individuals per 100 square miles)	4	(low)
	10	(high)
CDFW Estimate Total Adults	4,000	(low)
	6,000	(high)
Mountain Lion Foundation density (individuals/100 square miles)[4]	4.4	(low)
Mountain Lion Foundation estimate total adults	116	
County lowest population estimate	122	
State Population Estimate		
State lowest population estimate (Mountain Lion Foundation)	3,100	

County APHIS Baseline Take	
Average median take over 11-year period	7
% average take per year of County low population estimate	5.74%
% average take per year of state low population estimate	0.226%
% 11-year total take of state lowest population estimate	2.7%

Notes:
1. County take from Attachment B Table B-3
2. Statewide take from Attachment B Table B-4
3. Calculated from CALVEG (USFS 2018)
4. MLF (2017)

Table B-13
Mountain Lion Take and Population Data

Cumulative Take Estimates	
County 11-year median take by APHIS (2007-2017)	5
County median take compared to low population	0.2%
County median take plus 33%[7]	7
County median take plus 33% compared to county low population	5.5%
County median plus 33% compared to state low population	0.2%
County median plus 33% plus county median trapping + hunting = cumulative county[8]	19
Cumulative county median take compared to county low population	16%
State 11-year median take by APHIS (2007-2017)	86
State median take plus 33%	114
State median take plus 33% plus state median trapping + hunting = cumulative state[8]	114
State median plus 33% plus trapping state compared to state low population	3%
County cumulative plus state cumulative	133
Total county plus state cumulative compared to Mountain Lion Foundation low population	4%
County contribution	14.2%

Notes:
7. * 33% is added to account for take by private parties and all other known sources of mortality. It is the factor applied by APHIS-WS in recent documents (see USDA 2015: 44) in assessing impacts of its program, in CDFG (2004: species population models appendices) for APHIS-WS take, and has been used in this analysis for consistency.
8. Trapping data from: CDFW trapper reports FY 1997-98 to FY 2015-16 (ave 14/yr) CDFW (2017a)
State Reports Depredation killls 2017 (80 carcasses total) (19 take in Northern District) (193 Permits issued)

Table B-14
Raccoon Population and Take Data

APHIS-WS Annual Take		
Year	**Shasta County[1]**	**California[2]**
2007	1	2359
2008		2772
2009	1	2537
2010	12	2424
2011	1	2549
2012	1	2595
2013		2637
2014	11	2098
2015		1481
2016		1454
2007	1	1405
TOTAL	**28**	**24,311**
MED/YR	**1.0**	**2424**
County % of state take (11-year Median)		**0.12%**

County Population Estimate		
Suitable county land area (square miles)[3]	2,770	
Density (individuals per square mile)[4]	0.24	(low)
	0.70	(high)
Sex ratio	0.5	
Female breeding success	0.86	
Litter size	3.5	
Total Adults	665	(low)
	1,939	(high)
Breeding females	319	(low)
	931	(high)
Young at den	961	(low)
	2,802	(high)
County population before natural mortality (adults + young)	1,626	(low)
	4,741	(high)

State Population Estimate	
State low population estimate[5]	72,407

County APHIS Baseline Take	
Median annual take over 11-year period	1.0
% median take per year of County low population estimate	0.06%
% median take per year of state low population estimate	0.001%
% highest historic take of County low population estimate	0.7%
% highest historic take of state low population estimate	0.02%

Notes:
1. County take from Attachment B Table B-3
2. Statewide take from Attachment B Table B-4
3. Calculated from CALVEG (USFS 2018)
4. Population dynamics from: CDFG (2004) Appendix 8 (Raccoon Population Model)
5. From: CDFG 2004 Appendix 8 (Racoon Population Model)

Table B-14
Raccoon Population and Take Data

Sustainable Take Threshold	
Sustainable cumulative annual statewide harvest all sources[6]	49%

Cumulative Take Estimates	
County 11-year median take by APHIS (2007-2017)	1.0
County median take compared to low population	0.1%
County median take plus 33%[7]	1.3
County median take plus 33% compared to county low population	0.1%
County average plus 33% compared to state low population	0.002%
County average plus 33% plus county average trapping plus hunting equals cumulative county [8]	19.3
Cumulative county median take compared to county low population	1.2%
State 11-year median take by APHIS (2007-2017)	2,424
State median take plus 33%9	3,224
State median take plus 33% plus state median trapping plus hunting equals cumulative state[8]	3,335
State median plus 33% plus trapping state compared to state low population	4.6%
County cumulative plus state cumulative	3,354
Total county plus state cumulative compared to state low population	4.6%
County contribution	0.6%

Notes:
6. From: CDFG (2004:49)
7. 33% is added to account for take by private parties and all other known sources of mortality. It is the factor applied by APHIS-WS in recent documents (see USDA 2015: 44) in assessing impacts of its program, in CDFG (2004: species population models appendices) for APHIS-WS take, and has been used in this analysis for consistency.
8. Trapping data from: CDFW (2018c)

Table B-15
Striped Skunk Population and Take Data

APHIS-WS Annual Take		
Year	**Shasta County[1]**	**California[2]**
2007	10	5,036
2008		5,497
2009	7	4,680
2010	4	4,533
2011	10	3,922
2012	25	3,780
2013	11	3,473
2014	13	3,475
2015	1	2,771
2016		2,488
2017	3	2,866
TOTAL	**84**	**42,521**
MED/YR	**10**	**3,780**
County % of state take (11-year median)		**0.20%**

County Population Estimate		
Suitable county land area (square miles)[3]	2,740	
Density (individuals per square mile)[4]	1.3	(low)
	6.2	(high)
Sex ratio	0.46	
Female breeding success	0.8	
Litter size	5.6	
Total Adults	3,562	(low)
	16,989	(high)
Breeding females	1,639	(low)
	7,815	(high)
Young at den	7,341	(low)
	35,012	(high)
County population before natural mortality (adults + young)	10,904	(low)
	52,001	(high)

State Population Estimate	
State low population estimate[5]	318,195

County APHIS Baseline Take	
Median annual take over 11-year period	10
% median take per year of County low population estimate	0.09%
% median take per year of state low population estimate	0.003%
% highest historic take of County low population estimate	0.2%
% highest historic take of state low population estimate	0.01%

Notes:
1. County take from: Attachment B Table B-3
2. Statewide take from: Attachemtn B Table B-4
3. Calculated from CALVEG (USFS 2018)
4. Population dynamics from: CDFG (2004) Appendix 10 (Striped Skunk Population Model)
5. From: CDFG (2004) Appendix 10 (Striped Skunk Population Model)

Table B-15
Striped Skunk Population and Take Data

Sustainable Take Threshold	
Sustainable cumulative annual statewide harvest all sources[6]	N/A

Cumulative Take Estimates	
County 11-year median take by APHIS (2007-2017)	10.0
County median take compared to low population	0.1%
County median take plus 33%[7]	13.3
County median take plus 33% compared to county low population	0.12%
County median plus 33% compared to state low population	0.004%
County median plus 33% plus county median trapping plus hunting equals cumulative county[8]	13.3
Cumulative county median take compared to county low population	0.12%
State 11-year median take by APHIS (2007-2017)	3,780
State median take plus 33%[7]	5,027
State median take plus 33% plus state median trapping plus hunting equals cumulative state[8]	5,121
State median plus 33% plus trapping state compared to state low population	1.6%
County cumulative plus state cumulative	5,135
Total county plus state cumulative compared to state low population	1.6%
County contribution	0.3%

Notes:
6. No harvest threshold identified in CDFG (2004)
7. 33% is added to account for take by private parties and all other known sources of mortality. It is the factor applied by APHIS-WS in recent documents (see USDA 2015: 44) in assessing impacts of its program, in CDFG (2004: species population models appendices) for APHIS-WS take, and has been used in this analysis for consistency.
8. Trapping data from: CDFW (2018c)

Table B-16
Wild Pig Population and Take Data

APHIS-WS Annual Take		
Year	**Shasta County[1]**	**California[2]**
2007		578
2008		833
2009		946
2010	3	840
2011		884
2012	1	883
2013		1059
2014	3	717
2015		624
2016		690
2017	3	873
TOTAL	**10**	**8,927**
MED/YR	**3**	**840**
County % of state take (11-year median)		**0.1%**

Notes:
1. County take from: Attachment B Table B-3
2. Statewide take from: Attachment Table B-4

Attachment B References, Tables B-7 through B-16

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