FINAL
INITIAL STUDY (IS)
AND
MITIGATED NEGATIVE DECLARATION (MND)

Feral Pig Eradication and Control Project
San Diego County
SCH# 2013061008

December 2013

State of California
DEPARTMENT OF PARKS AND RECREATION

FINAL MITIGATED NEGATIVE DECLARATION

PROJECT: **FERAL PIG ERADICATION AND CONTROL PROJECT**

LEAD AGENCY: California Department of Parks and Recreation (CDPR)

RESPONSIBLE AGENCIES: California Department of Fish and Wildlife, City of San Diego, County of San Diego, Vista Irrigation District, and Helix Water District

AVAILABILITY OF DOCUMENTS:
The Initial Study for this Mitigated Negative Declaration was made available for a 30-day public review period at the locations indicated in the following Draft Mitigated Negative Declaration. Following the filing of the Notice of Determination (NOD) with the State Clearinghouse, the Final IS/MND shall be kept on record at:

California Department of Parks and Recreation
Colorado Desert District Office
200 Palm Canyon Drive
Borrego Springs, CA 92004

California Department of Parks and Recreation
Southern Service Center
2797 Truxtun Road
San Diego, CA 92106

PROJECT DESCRIPTION:
As described more fully in Chapter 2, the project would consist of the approval and implementation of a Memorandum of Understanding for a systematic campaign, including funding sources, goals and strategies, to eradicate and control non-native feral pig impacts in San Diego County. Primary project implementation elements are provided below:

- Inventory feral pig populations and areas of resource damage.
- Removal of feral pigs using various methods including cage or corral traps, aerial search and dispatch and ground search and dispatch with the use of trained search dogs.
- Temporary fencing to restrict or funnel movement of feral pig populations.
- Monitoring.
- Adaptive management and re-treatment as necessary.
- Screening of helicopter flight paths and landing areas.

FINDINGS:
An Initial Study analyzed the impacts associated with the implementation of the Project. A range of resource and potential impact areas were discussed within the Initial Study. Upon completion of this analysis, the following level of impacts was determined:

- There is no potential for adverse impact to Aesthetics, Agricultural Resources, Air Quality, Geology and Soils, Greenhouse Gases, Hazards and Hazardous Materials, Land Use and Planning, Mineral Resources, Population and Housing and Utilities and Service Systems as indicated by analysis found within the Initial Study Checklist.

- Less-than-significant impacts would result to Biological Resources, Cultural Resources, Hydrology and Water Quality, Public Services and Transportation and Traffic with the inclusion of the Best Management Practices and Mitigation Measures found within Chapter 5.

PUBLIC AND AGENCY COMMENTS AND RESPONSES:
Public agencies and individuals provided comments during the 30-day comment period. As required by CEQA, CDPR has taken record of these comments and responded to them each individually. The comments and response to them may be found in Appendix B. No major changes were required as a result of the comments received. How CDPR will implement the plan was reiterated or clarified.

Pursuant to Section 21082.1 of the California Environmental Quality Act, the California Department of Parks and Recreation (CDPR) has independently reviewed and analyzed the Initial Study and Mitigated Negative Declaration for the proposed project and finds that these documents reflect the independent judgment of CDPR. CDPR, as lead agency, also confirms that the Best Management Practices identified in these documents are feasible and will be implemented.

12/17/13

Dan Falat
Colorado Desert District Superintendent

Date

12/17/13

Luke Serna, Associate Park and Recreation Specialist
Southern Service Center Environmental Coordinator

Date

DRAFT MITIGATED NEGATIVE DECLARATION

PROJECT: **FERAL PIG ERADICATION AND CONTROL PROJECT**

LEAD AGENCY: California Department of Parks and Recreation (CDPR)

RESPONSIBLE AGENCIES: California Department of Fish and Wildlife, City of San Diego, County of San Diego, Vista Irrigation District, and Helix Water District

AVAILABILITY OF DOCUMENTS: The Initial Study for this Mitigated Negative Declaration is available for review at:

California Department of Parks and Recreation
Colorado Desert District Headquarters
200 Palm Canyon Drive
Borrego Springs, CA 92004
(760) 767-4037

Cuyamaca Rancho State Park Headquarters
13652 Highway 79
Julian, CA 92036

California Department of Fish and Wildlife
South Coast Region Headquarters
California Department of Fish and Wildlife
3883 Ruffin Road
San Diego, CA 92123

Public Libraries:

Central Library
820 E St.
San Diego, CA 92101-6416

Alpine Branch Library
2130 Arnold Way
Alpine, CA 91901

Campo-Morena Village Branch Library
31356 Highway 94
Campo, CA 91906

Descanso Branch Library
9545 River Drive
Descanso, CA 91916

Jacumba Branch Library
44605 Old Hwy. 80
Jacumba, CA 91934

Julian Branch Library
1850 Highway 78
Julian, CA 92036

Pine Valley Branch Library
28804 Old Hwy. 80
Pine Valley, CA 91962

Potrero Branch Library
24883 Potrero Valley Road
Potrero, CA 91963

California Department of Parks and Recreation Internet Website
www.parks.ca.gov/?page_id=983

Project Description:

As described more fully in Chapter 2, the project would consist of the approval and implementation of a Memorandum of Understanding for a systematic campaign, including funding sources, goals and strategies, to eradicate and control nonnative feral pig impacts in San Diego County. Primary project implementation elements are provided below:

- Inventory feral pig populations and areas of resource damage.
- Removal of feral pigs using various methods including cage or corral traps, aerial search and dispatch and ground search and dispatch with the use of trained search dogs.
- Temporary fencing to restrict or funnel movement of feral pig populations.
- Monitoring.
- Adaptive management and re-treat as necessary.
- Screening of helicopter flight paths and landing areas.

The Initial Study (IS) is attached. Questions or comments regarding this Initial Study and Mitigated Negative Declaration may be addressed to:

Lucas Serna
California Department of Parks & Recreation
Southern Service Center
NTC at Liberty Station, Barracks 26
2797 Truxtun Rd.
San Diego, CA 92106
enviro@parks.ca.gov

Pursuant to Section 21082.1 of the California Environmental Quality Act, the California Department of Parks and Recreation (CDPR) has independently reviewed and analyzed the Initial Study and Mitigated Negative Declaration for the proposed project and finds that these documents reflect the independent judgment of CDPR. CDPR, as lead agency, also

confirms that the Best Management Practices identified in these documents are feasible and will be implemented as stated in the Mitigated Negative Declaration.

Dan Falat
Colorado Desert District Superintendent

5/28/13
Date

Gail Sevrens, Sr. Park and Recreation Specialist
Colorado Desert District Environmental Coordinator

5/28/13
Date

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CHAPTER 1. INTRODUCTION

1.1 Introduction and Regulatory Guidance

The Initial Study and Mitigated Negative Declaration (IS/MND) have been prepared by the California Department of Parks and Recreation (CDPR) to evaluate the potential environmental effects of the proposed Feral Pig Eradication and Control Project in San Diego County, California. This document has been prepared in accordance with the California Environmental Quality Act (CEQA), Public Resources Code §21000 *et seq*., and the State CEQA Guidelines, California Code of Regulations (CCR) §15000 *et seq*.

An Initial Study is conducted by a lead agency to determine if a project may have a significant effect on the environment [CEQA Guidelines §15063(a)]. If there is substantial evidence that a project may have a significant effect on the environment, an Environmental Impact Report (EIR) must be prepared, in accordance with CEQA Guidelines §15064(a). However, if the lead agency determines that revisions in the project plans or proposals made by or agreed to by the applicant mitigate the potentially significant effects to a less-than-significant level, a Mitigated Negative Declaration may be prepared instead of an EIR [CEQA Guidelines §15070(b)]. The lead agency prepares a written statement describing the reasons a proposed project would not have a significant effect on the environment and, therefore, why an EIR need not be prepared. This IS/MND conforms to the content requirements under CEQA Guidelines §15071.

This document, when adopted, will be used by the identified Responsible Agencies as a basis for issuance of any permits, authorizations, and approval of the Memorandum of Understanding.

1.2 Lead Agency

The lead agency is the public agency with primary approval authority over the proposed project. In accordance with CEQA Guidelines §15051(b) (1), “the lead agency will normally be an agency with general governmental powers, such as a city or county, rather than an agency with a single or limited purpose.” The lead agency for the proposed project is CDPR. The contact person for the lead agency to whom all inquires and comments on this environmental document should be addressed is:

Lucas Serna
California Department of Parks & Recreation
Southern Service Center
NTC at Liberty Station, Barracks 26
2797 Truxtun Rd.
San Diego, CA 92106
enviro@parks.ca.gov

1.3 Project Purpose and Document Organization

The purpose of this document is to evaluate the potential environmental effects of the approval and implementation of a multi-party Memorandum of Understanding for a Feral Pig Eradication and Control Project in eastern San Diego County. Best Management Practices have been incorporated into the project to eliminate any potentially significant impacts or reduce them to a less-than-significant level.

This document is organized as follows:

Chapter 1 - Introduction
The IS/MND begins with an introduction describing the project's purpose and organization.

Chapter 2 - Project Description
This chapter describes the reasons for the project, scope of the project, and project objectives.

Chapter 3 - Environmental Setting, Impacts
This chapter identifies the significance of potential environmental impacts, explains the environmental setting for each environmental resource or impact, and evaluates each through the CEQA Environmental (Initial Study) Checklist. Best Management Practices are incorporated, where appropriate, to reduce all potentially significant impacts to a less-than-significant level.

Chapter 4 - Mandatory Findings of Significance
The overall significance of any potential impacts to natural and cultural resources, cumulative impacts and impacts to humans shall be identified and summarized within this chapter as required by the Initial Study guidelines.

Chapter 5 - Summary of Best Management Practices and Mitigation Measures
This chapter includes the project features and additional measures which have been incorporated into the project to reduce identified impacts as a result of the Initial Study.

Chapter 6 - References
This chapter identifies the references and sources used in the preparation of this IS and MND.

Chapter 7 - Report Preparation
This chapter provides a list of those involved in the preparation of this document.

Figures, Tables, and Appendix – Figures, tables, and Appendix referenced in the IS/MND

Concurrent with the CEQA environmental process, the federal and tribal governments (Cleveland National Forest, Bureau of Land Management, and the El Capitan Grande Indian Reservation) have completed a similar NEPA process for feral pig eradication

and damage control on their lands. Both processes have been developed with interagency cooperation among all entities (Guidelines Sec. 15222).

1.4 Summary of Findings

Chapter 3 of this document contains the Environmental (Initial Study) Checklist that identifies the potential environmental impacts (by environmental issue) and a brief discussion of each impact resulting from implementation of the proposed project. Best Management Practices have been included that result in impacts that are less-than-significant or result in no impact.

Based on the IS, and supporting environmental analysis provided in this document, the proposed Feral Pig Eradication and Control Project would result in less-than-significant impacts for the following issues: aesthetics, agricultural resources, air quality, biological resources, cultural resources, geology and soils, hazards and hazardous materials, hydrology and water quality, land use and planning, mineral resources, noise, population and housing, public services, recreation, transportation/traffic, and utilities and service systems.

In accordance with §15064(f) of the CEQA Guidelines, a MND shall be prepared if the proposed project would not have a significant effect on the environment after the inclusion of Best Management Practices and Mitigation Measures in the project. Based on the available project information and the environmental analysis presented in this document, there is no substantial evidence that, after implementation of the Best Management Practices and Mitigation Measures, the proposed project would have a significant effect on the environment. Therefore, a Mitigated Negative Declaration has been prepared in accordance with the CEQA Guidelines.

CHAPTER 2. PROJECT DESCRIPTION

2.1 Introduction

This Initial Study and Mitigated Negative Declaration (IS/MND) have been prepared by CDPR to evaluate the potential environmental effects of the approval and implementation of a multi-party Memorandum of Understanding for a Feral Pig Eradication and Control Project in those locations of San Diego County, California subject to the jurisdiction of the participating agencies.

This document, when adopted, will be used by the identified Responsible Agencies as a basis for issuance of any permits, authorizations, and approval of the Memorandum of Understanding.

2.2 Project Location

The Project is located primarily in rural and unincorporated portions of eastern San Diego County. The project site encompasses all or partially the following United States Geological Survey 7.5 minute Quadrangles: Agua Caliente Springs, Aguanga, Alpine, Barrett Lake, Beauty Mountain, Borrego Palm Canyon, Borrego Sink, Boucher Hill, Bucksnort Mtn, Cameron Corners, Clark Lake, Cuyamaca Peak, Descanso, Dulzura, Earthquake Valley, El Cajon Mtn., Hot Springs Mtn., Julian, Live Oak Springs, Mesa Grande, Monument Peak, Morena Reservoir, Mount Laguna, Pala, Palomar Observatory, Pechanga, Ramona, Ranchita, Rodriguez Mtn., San Pasqual, San Vicente Reservoir, Santa Ysabel, Sombrero Peak, Tubb Canyon, Tule Springs, Vail Lake, Valley Center, Viejas Mountain, Warner Springs, Warners Ranch, and Whale Peak. (See Figure 1.)

2.3 Background and Need for the Project

Feral pigs (*Sus scrofa*) are a non-native species known to occur in California and throughout the United States. Populations are the result of escaped domestic stock, introduced European wild boar, or a hybrid of both types and are considered an invasive species in California and the rest of the Americas. Feral pigs pose a serious threat to California's native ecosystems due to their omnivorous diets and because they forage by rooting, which physically disturbs soils and associated plants and animals (Sweitzer and Van Vuren 2008, 2002). Feral pigs can be widespread and very abundant at some studied locations (Sweitzer et al., 2000).

Feral pigs in San Diego County were introduced in 2009 near El Capitan Reservoir with an estimated population of 300-500 now established in many parts of the county. These populations have proliferated and expanded their range by moving out in all directions, primarily up tributaries in the San Diego River watershed and largely in riparian and oak grassland habitats. Feral pig populations can grow rapidly and dispersal can result in pigs quickly colonizing and populating new areas (Waithman et al., 1999) resulting in damage to habitat, competition with native species, negative impacts to drinking water quality, damage to agriculture and rangelands, destruction of archeological sites, and transmission of diseases to livestock and humans. They also

pose a significant threat to the quality of the reserve system of protected areas in San Diego County.

Feral pigs are habitat generalists, meaning they can be found in a variety of habitats and are very adaptable. They can grow quite large and depending on available food resources can weigh as much 250 pounds. Feral pigs are opportunistic omnivores and will eat almost anything. Their diet consists primarily of plants (roots, tubers, fruit, acorns, etc.), but they will also eat worms, insects, small mammals, eggs, and young of ground-nesting birds and reptiles. Feral pigs are sexually mature at six months of age and can have up to two litters a year with an average litter size of three-eight piglets with a high of up to 12. Feral pigs have few predators due to their size.

Studies have shown that foraging by feral pigs reduces oak regeneration (Sweitzer and Van Vuren, 2002, 2008) because the animals are known to feed on mast. Given current declines in populations of coast live and black oaks due to stressors such as the recent wildfires, drought-related stress, and the spread of the gold-spotted oak borer, further stress caused by pigs could present a significant problem in oak woodlands within San Diego County. Cushman et al. (2004) hypothesized that vegetation changes due to pig rooting and wallowing provide greater opportunities for exotic grass colonization.

Pigs can also compete with or prey on native wildlife and game species. Habitat damage in sensitive areas may have a negative impact on numerous listed and sensitive species, as well as game species such as turkeys and deer. Pigs may also destroy the nests, eggs, and offspring of ground-nesting birds and can impact other animals directly or indirectly.

Furthermore, feral pigs can cause impacts to agricultural crops and can damage private property, parkland, and open spaces preserves. It is believed that damage caused by wild pigs is small compared to overall economic value (>$32 billion in 2006) of agriculture activity, but the potential costs can be huge due to food safety concerns and disease outbreak contributed to feral pigs (Kreith, 2007). Feral pigs are suspected of the September 2006 *E. coli* O157:H7 disease outbreak traced to consumption of spinach grown in San Benito or Monterey counties (Kreith, 2007). California county agriculture commissioners reported a $1.7 million loss in 2006, but it is believed this number may be underestimated because only 69% of all commissioners responded (Seward et al., 2003).

Damage caused by feral pigs on Palomar Mountain.

Additionally, the pigs can impact water quality in reservoirs and streams by increasing turbidity (sediment and nutrient loading due to rooting and wallowing activities) and bacterial contamination thus impacting aquatic life such as fish and aquatic invertebrates. The potential also exists for increased fecal coliform concentrations to levels exceeding human health standards.

Feral pigs carry diseases such as brucellosis, psuedorabies, leptospirosis, and trichenella which can impact livestock, as well as human health. Humans can contact both brucellosis and leptospirosis through handling of infected tissues and trichinosis is spread by intestinal roundworms via uncooked/undercooked meat. Swine brucellosis could potentially affect free roaming cattle.

Although feral pigs have become established in many parts of California where various control measures have been utilized to limit their impacts, the potential to completely remove this population from San Diego County is more likely for several reasons: It is a very new population; it is still geographically isolated from all other feral pig populations

in the State; and the likelihood of success of a coordinated effort to eliminate the impacts of feral pigs is very high.

A working group of scientists and land managers for numerous State, Federal, tribal, and local agencies in San Diego County has analyzed a number of options for managing feral pigs in San Diego County. One of these options, a "systematic campaign," would involve participating agencies, tribes, and organizations adopting common goals, a unified strategy, and a jointly supported leadership model.

The underlying goal of most feral pig eradication and control efforts is to reduce or eliminate rooting-related disturbance caused by pigs in the local native ecosystem. A good deal of research has therefore attempted to relate rooting disturbance to feral pig density or abundance (Hone 1988, Vtorov 1993, Choquenot et al., 1996, and others). Results of these studies suggest a curvilinear relationship between pig density and rooting disturbance. In other words, a moderate reduction in pig density/numbers (20-30%) may lead to little or no reduction in damage, whereas a reduction of 40-50% may significantly reduce rooting in an area (Hone~~,~~ 1995, Choquenot et al.~~,~~ 1996).

Based on the curvilinear relationship between rooting disturbance and feral pig density and abundance, and previous research on feral pigs in California (Waithman et al., 1999, Sweitzer et al., 2000), it was estimated that a 35-45% reduction in feral pig numbers at areas in northern California would translate into significantly reduced rooting disturbance. Sweitzer and Loggins (2001) estimated that a program to control feral pigs at Henry Coe State Park (Santa Clara County) with the goal of significantly improving ecological conditions by reducing rooting disturbance would need to remove approximately 500 feral pigs (range 280 to 560) during the first year and approximately 300 the second year.

2.4 Project Objectives

The objectives of this project are to protect watersheds, source water, human health, natural ecosystems, endangered and threatened species and habitats, agriculture, and public and private property by conducting a feral pig eradication and control project that would involve public agencies, tribes, and participating organizations adopting common goals, a unified strategy, and a jointly supported leadership model to eliminate or reduce feral pig populations within San Diego County to a manageable level.

This document, when adopted, will be used by the identified Responsible Agencies as a basis for issuance of any permits, authorizations, and approval of the Memorandum of Understanding.

2.5 Project Description

The proposed action is the approval and implementation of a Memorandum of Understanding among the California Department of Fish & Wildlife (CDFW) and CDPR, the County of San Diego, the City of San Diego, the Vista Irrigation District, and Helix Water District for a 5-year integrated feral pig eradication and control approach wherein the most effective, selective, and environmentally desirable method, or combination of methods allowed under this alternative, would be tailored to site-specific conditions.

Based on variables encountered in the field such as location, topography, land uses, vegetation type, and number of pigs, the State (CDPR and CDFW) in coordination with the various land managers and agencies, would decide which of the allowable control methods would be most suitable. Project activities and control methods are described below.

1. **Inventory Feral Pig Populations and Areas of Resource Damage.** Prior to taking action to remove feral pigs from the various properties, detailed data would be gathered to more accurately identify areas of feral pig habitation to develop site-specific removal strategies. This would help concentrate trapping and hunting efforts in key areas and make those efforts as effective as possible. Feral pig location data is being collected by ground surveys, habitat mapping, and modeling, as well as review of existing documentation concerning location of feral pig populations believed to currently number somewhere between 300-500 animals. Use of radio-collared "sentinel pigs" may also occur. This involves capturing feral pigs, outfitting them with radio collars and GPS units, and releasing them so that they may be tracked and potentially reveal locations of additional animals.

2. **Removal of Feral Pigs**. Three methods would be employed to remove feral pigs from public lands and potentially private lands, where permissions have been granted or obtained, within the project area. Experienced professional marksmen would be used to minimize the chances that pigs are wounded and escape an encounter with shooters. Trapped pigs would be dispatched as soon and humanely as possible after trapping to minimize distress to the animals. Use of aerial dispatch methods is expected to reduce the overall number of pigs dispatched during the project by shortening project duration and therefore lessening reproduction of pigs in that time. Animal carcasses are not considered hazardous waste by the US EPA. All disposal and transportation would be in accordance with applicable laws and regulations, including CCR 794.3. In remote locations, pig carcasses may be left in the project area to decompose.

   a) <u>Trapping.</u> Various types of traps including drop-nets, cage traps, box traps, and/or corral traps would be utilized in areas frequented by pigs (see Appendix). The traps would be designed to allow for escape of non-target wildlife and checked on a daily basis. It is expected that no more than 20-30 traps would be in use at any one time and these would be located throughout the project limits. The number of traps utilized would be based on the population of feral pigs in a treatment area. The size of traps may be up to 20 feet wide by 20 feet long. They would likely be set near water sources, riparian areas, or groves of oak trees where pigs are likely to congregate and forage. Traps would not be set so as to cause resource damage within areas of sensitive biological, cultural, or watershed resources (wetlands, riparian zone, etc.), nor would traps be set in areas easily accessible by or visible to the public. Installation of traps may involve minor ground disturbance with the installation of fence t-posts and anchors, as well as the activity of the pigs themselves while they are inside the traps. Traps would be baited with grain or other food attractive to feral pigs. After pigs are trapped, they would be dispatched quickly with lethal gunshots in a humane manner and the carcasses disposed of off-site in compliance with

applicable regulations or left on site if removal is not feasible. Trapping locations in remote areas may be logistically supported by helicopter as needed. Trapping may also be supported by limited use of packstock when feasible and stock would be restricted to designated trails. All proposed trapping locations would be flagged on the ground and GPS locations provided to CDPR District GIS and archaeological staff, as well as other cooperating public agencies. Using GIS location data for proposed trapping locations, District Archaeologists would complete records review and field survey if necessary to ensure that trapping location is not located within cultural resource site.

b) Aerial dispatch with helicopters. Aerial dispatch (as allowed under law) would involve a helicopter with a professional marksman systematically covering the terrain with precision low altitude flights and working through each drainage basin searching for pigs. Helicopter landings in remote locations during these activities, including Wilderness areas, may be needed. Landings in designated Wilderness in California State Parks would first require a minimum tool analysis. Feral pigs are active in the mornings and evenings, so most flights are likely to occur during those times. Aerial dispatch would typically occur in remote locations that are inaccessible by roads. To ensure public safety and minimize noise impacts, buffer zones of ½ mile would be established around communities and residential subdivisions; buffer zones of 1,000 feet would be established around private lands and other facilities. Areas actively undergoing aerial dispatch activities may be temporarily closed to the public to protect public safety. When pigs are found, they would be quickly dispatched by lethal rifle shots. Individual carcasses may be left in place to decompose; multiple carcasses in the same area may be removed by helicopter and disposed of off-site, if feasible.

c) Ground dispatch with dogs. Ground search and dispatch with dogs would utilize professional contract marksmen with trained pig dogs. Ground marksmen would systematically cover terrain and work through each drainage basin to ensure no pigs are missed. The marksmen would work closely with their trained dogs. The dogs would be trained to bark and corner pigs, but trained not to attack them nor harass wildlife. Dogs would be outfitted with radio collars and/or GPS units so marksmen would be aware of their locations at all times. Ground search and dispatch operations may be logistically supported by helicopter as needed and would include landing in remote locations, including Wilderness areas. Limited use of packstock to support ground operations may occur when feasible; stock would be restricted to designated trails. Night search and dispatch with the use of night-vision technology may occur.

3. **Temporary Fencing.** Short spans (<500 ft.) of temporary fencing (4x4 hog wire fence) may be constructed within the project area to restrict or funnel movement of feral pig populations during trapping, and search and dispatch activities to enhance the effectiveness of those efforts. Fencing may also be used to protect environmentally sensitive areas from feral pig damage. Feral pig fences would be constructed with openings at ground level so as not to restrict the movement of

rodents, other small mammals, and wildlife. In addition, all temporary fencing would be installed as to not preclude migration patterns of any large mammals.

4. **Monitoring**. After locations have been cleared of feral pigs they would be regularly monitored for up to 5 years to ensure the pigs have truly been eliminated and do not return. Subsequently, intermittent long-term monitoring would continue indefinitely in case the animals are re-introduced to the area. Use of local volunteer organizations would be an important component of both short-term and long-term monitoring efforts. In the event feral pigs are found in an area in which they were believed to have been eliminated, trapping, and search and dispatch activities would resume in that location.

5. **Adaptive Management.** If after 5 years of intensive efforts, resource impacts from feral pigs have not been eliminated from the project area, then project goals shall be re-evaluated. If it is determined at that time that elimination of feral pig impacts from the project area is not a practical objective, then efforts would be changed to focus on reducing, rather than eliminating, environmental impacts of feral pigs by decreasing their numbers to the extent possible. Feral pig activity shall be regularly monitored with trapping, and search and dispatch activities as needed to reduce impacts in sensitive areas.

6. **Helicopter Flight Paths and Landing Areas.** Helicopter flight paths and landing areas would be screened for effects on threatened, endangered, and sensitive species to avoid negative impacts to those resources. Monitoring of nest locations for golden and bald eagles would occur annually. This information would be used to establish operating buffers and seasonal use restrictions for helicopters around active nest sites. Helicopter landing areas would be located in existing openings in vegetation and in previously disturbed locations. No improved landing areas would be constructed.

2.6 Consistency with Local Plans and Policies

County of San Diego, General Plan;
County of San Diego, MSCP;
City of San Diego;

a) Multiple Species Conservation Program, 1997

- The removal of exotic animals complies with regional habitat conservation plans and the City of San Diego's Multiple Species Conservation Program and Subarea Plan (MSCP). In addition, the proposed project activities would adhere to the City of San Diego's MSCP Multi-Habitat Planning Area (MHPA) and Land Use Adjacency Guidelines.

b) A Framework for Managing Water Department Lands, 2009

- Project would be consistent with the primary core strategy which states, in summary, that the lands managed by the City Public Utilities Department (formerly Water Department) are for the overarching purpose of protecting

water quality in the reservoirs, thus ensuring the health and safety of the public water supply.

c) General Plan, Conservation Element, 2008

- The Water Resources Management, Biological Diversity and Wetlands chapters outline goals and policies to provide safe and adequate water supply, preserve natural habitats, and remove invasive species. The proposed project would be consistent with these objectives.

Cleveland National Forest Land Management Plan (LMP);

- *Forest Goal 2.1*: *Reverse the trend of increasing loss of natural resource values due to invasive species.* The LMP desired condition is that the structure, function, and composition of plant and animal communities are not impaired by the presence of invasive non-native plants and animals (LMP, Part 1, p. 32).

- *Implementation Strategy: IS 1 - Invasive Species Prevention and Control.* Prevent the introduction of new invaders, conduct early treatment of new infestations, and contain and control established infestations (LMP, Part 2, p. 91).

Bureau of Land Management Resource Management Plan;

- Direct the agency to protect resources from degradation that may be caused by a variety of factors, including invasive species.

California State Parks Operations Manual-Natural Resources;

- 0311.5.7.2 Wild Pigs: The Department and the CDFW signed a general memorandum of understanding that clarifies both departments' general management goals and objectives related to wild pigs. The memorandum acknowledges that wild pigs on State Park System lands adversely impact native plants and animals, and that those impacts constitute damage and justify control/removal efforts. This general memorandum and additional guidance material for managing wild pigs, including a template for a unit specific memorandum with CDFW and a feral pig management plan outline, can be found in the Natural Resources Handbook.

Individual species and habitat recovery plans (including Peninsular bighorn sheep, Quino checkerspot butterfly, arroyo toad, southwestern willow flycatcher, and least Bell's vireo).

2.7 Discretionary Approvals

A Memorandum of Understanding among the California Department of Park and Recreation, California Department of Fish and Wildlife, County of San Diego, City of San Diego, Vista Irrigation District, and Helix Water District, is a discretionary approval among these parties to work together in a coordinated manner to eliminate and control pigs on lands under the various jurisdictions.

A parallel review has been conducted under the National Environmental Policy Act (NEPA) by the U.S. Forest Service for lands under Federal ownership.

City of San Diego – Approval of an MOU would be required by the San Diego City Council. In addition, Right-of-Entry permits would be required from the Public Utilities Department for project implementation on city-owned lands (see Figure 4).

County of San Diego - Approval of MOU requires action by the County of San Diego Board of Supervisors.

Vista Irrigation District - Approval of the MOU would be reviewed by the Vista Irrigation District Board of Directors.

California Department of Parks and Recreation has an existing Memorandum of Understanding with the CDFW to provide for removal of feral pigs from State Park lands. Other land agencies may require similar agreements or depredation permits with CDFW; however, issuance of a depredation permit is not discretionary on behalf of CDFW.

Native American Input

The Native American Heritage Commission (NAHC) was contacted and asked to provide CSP with a list of interested Native American groups and individuals. The list that the NAHC supplied included groups and representatives from the Kumeyaay. Letters and/or emails regarding the planning process and public and focus group meetings were sent to each person or group on the list. Additional Native American individuals with previous experience or concerns in Colorado Desert District were also contacted. Follow-up phone calls were made to ensure that the correspondence had been received.

A consultation meeting was held for Native Americans at Cuyamaca Rancho State Park. No Native American representatives attended.

Native American input came in the form of phone calls, letters, and email. A follow up letter was sent to address comments received. Comments were generally supportive of CSP's plans. The main comments, questions and requests were : 1) possible pig sightings in Mt. Laguna region, 2) use of pig eradication alternatives such as trapping, 3) requests to be included on the project manager's email distribution list, 4) requests to be a part of continued correspondence/Consultation on the Pig eradication project, 5) recognition of Tribal land jurisdiction when planning/carrying our pig eradication activities, and 6) request for emphasis on "elimination" as opposed to reduction of impacts of feral pigs.

2.8 Related Projects

The Cleveland National Forest (CNF) has prepared an Environmental Assessment in compliance with NEPA and other relevant Federal laws and regulations. The proposed action involves activities on National Forest System lands, administered by USDA Forest Service, Cleveland National Forest, activities on lands administered by the Bureau of Land Management (BLM), Palm Springs - South Coast and El Centro Field Offices, and on the Capitan Grande Indian reservation for actions with Federal funding or undertaken by the Bureau of Indian Affairs (BIA).

The proposed Feral Pig Eradication and Control Project area is located within San Diego County within the foothill and mountain zone, portions of southern Riverside County, and Forest Service lands within the Santa Ana Mountains of northwestern San Diego, Orange, and southwestern Riverside counties.

CHAPTER 3. ENVIRONMENTAL CHECKLIST

PROJECT INFORMATION	
1. Project Title:	Feral Pig Eradication and Control Project
2. Lead Agency Name & Address:	California Department of Parks and Recreation
3. Contact Person & Phone Number:	Lucas Serna, (619) 221-7060
4. Project Location:	Various areas of San Diego County, exclusive of municipal jurisdictions other than the City of San Diego
5. Project Sponsor Name & Address:	California Department of Parks and Recreation Colorado Desert District 200 Palm Canyon Drive Borrego Springs, CA 92004
6. General Plan Designation:	n/a
7. Zoning/Classification:	various
8. Description of Project:	Refer to Chapter 2, Section 2.5
9. Surrounding Land Uses & Setting:	Refer to Chapter 3 of this document (Section IX, Land Use and Planning)
10. Approval Required from Other Public Agencies	Refer to Chapter 2 (Section 2.8)

1. 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
☐ Hazards & Hazardous Materials	☐ Hydrology/Water Quality	☐ Land Use and Planning
☐ Mineral Resources	☐ Noise	☐ Population/Housing
☐ Public Services	☐ Recreation	☐ Transportation/Traffic
☐ Utilities/Service Systems	☐ Mandatory Findings of Significance	

DETERMINATION

On the basis of this initial evaluation:

I find that the proposed project **COULD NOT** have a significant effect on the environment and a **NEGATIVE DECLARATION** will be prepared. ☐

I find that, although the original scope of the proposed project **COULD** have had a significant effect on the environment, there **WILL NOT** be a significant effect because revisions and mitigations to the project have been made by or agreed to by the applicant. 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** or its functional equivalent will be prepared. ☐

I find that the proposed project **MAY** have a "potentially significant impact" or "potentially significant unless mitigated impact" on the environment. However, at least one impact has been adequately analyzed in an earlier document, pursuant to applicable legal standards, and has been addressed by mitigation measures based on the earlier analysis, as described in the report's attachments. An **ENVIRONMENTAL IMPACT REPORT** is required, but it must analyze only the impacts not sufficiently addressed in previous documents. ☐

I find that, although the proposed project could have had a significant effect on the environment, because all potentially significant effects have been adequately analyzed in an earlier EIR or Negative Declaration, pursuant to applicable standards, and have been avoided or mitigated, pursuant to an earlier EIR, including revisions or mitigation measures that are imposed upon the proposed project, all impacts have been avoided or mitigated to a less-than-significant level and no further action is required. ☐

Gail [illegible]

Environmental Coordinator

5/28/13

Date

EVALUATION OF ENVIRONMENTAL IMPACTS

1. A brief explanation is required for all answers, except "No Impact", that are adequately supported by the information sources cited. A "No Impact" answer is adequately supported if the referenced information sources show that the impact does not apply to the project being evaluated (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on general or project-specific factors (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).
2. All answers must consider the whole of the project-related effects, both direct and indirect, including off-site, cumulative, construction, and operational impacts.
3. Once the lead agency has determined that a particular physical impact may occur, the checklist answers must indicate whether that impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate when there is sufficient evidence that a substantial or potentially substantial adverse change may occur in any of the physical conditions within the area affected by the project that cannot be mitigated below a level of significance. If there are one or more "Potentially Significant Impact" entries, an Environmental Impact Report (EIR) is required.
4. A "Mitigated Negative Declaration" (Negative Declaration: Less Than Significant with Mitigation Incorporated) applies where the incorporation of mitigation measures, prior to declaration of project approval, has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact with Mitigation." The lead agency must describe the mitigation measures and briefly explain how they reduce the effect to a less than significant level.
5. Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR (including a General Plan) or Negative Declaration [CCR, Guidelines for the Implementation of CEQA, § 15063(c)(3)(D)]. References to an earlier analysis should:
   a) Identify the earlier analysis and state where it is available for review.
   b) Indicate which effects from the environmental checklist were adequately analyzed in the earlier document, pursuant to applicable legal standards, and whether these effects were adequately addressed by mitigation measures included in that analysis.
   c) Describe the mitigation measures in this document that were incorporated or refined from the earlier document and indicate to what extent they address site-specific conditions for this project.
6. Lead agencies are encouraged to incorporate references to information sources for potential impacts into the checklist or appendix (e.g., general plans, zoning ordinances, biological assessments). Reference to a previously prepared or outside document should include an indication of the page or pages where the statement is substantiated.
7. A source list should be appended to this document. Sources used or individuals contacted should be listed in the source list and cited in the discussion.
8. Explanation(s) of each issue should identify:
   a) the criteria or threshold, if any, used to evaluate the significance of the impact addressed by each question **and**
   b) the mitigation measures, if any, prescribed to reduce the impact below the level of significance.

ENVIRONMENTAL RESOURCES/ISSUES

3.1 Aesthetics

ENVIRONMENTAL SETTING

The project area encompasses various landforms in San Diego County including parklands, agriculture, disturbed, and developed. Numerous habitat types occur within this area and many may be considered highly scenic in nature (Figure 2).

The various general plans (State, county, city, etc.) discuss aesthetics and vistas in several areas. Many areas are considered to have outstanding scenic quality in the backcountry of San Diego County. Factors contributing to this quality include open vistas over meadows, mountain views, and winding narrow highways, large tracts of undeveloped hillsides, forests, streams, and low density development. On clear days, one can see the Pacific Ocean from the higher peaks of Cuyamaca and Palomar Mountains.

WOULD THE PROJECT:	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION	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?	☐	☐	☐	☒
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

a) Project activities such as placement of traps would be comparatively small in number within individual landscape areas, relatively small in size, would not block viewsheds, and would be temporary in nature. The project would benefit scenic vistas by preventing future damage to scenic resources such as meadows and vegetation caused by rooting feral pigs. Various types of traps including cage traps, box traps, and/or corral traps would be utilized in areas frequented by pigs (see Appendix). It is expected that no more than 20-30 traps would be in use at any one time and these would be located throughout the project limits. Each treatment area would require traps remain in use for a maximum of 30 days.

b) Several areas within the project area have been determined to be eligible to be designated as a state scenic highway. They include Interstate 8, SR 76, SR 79, and portions of SR 78. The portion of SR 78 within Anza-Borrego Desert State Park® (ABDSP) has been officially designated as a state scenic highway. However, traps would be relatively small in size, few in number and placement would avoid sensitive vegetation and historic resources, would be temporary, and not be seen from any highway or roadway, so substantial damage to scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within any state scenic highways are not expected to occur.

c) The visual character of the project area shall not be degraded, but returned to a more natural state by removing feral pigs. Preventing feral pigs from dispersing into new areas would avert degradation of the existing visual character. Disturbances to feral pigs are limited to ground disturbances.

d) The traps would not be lighted, nor would they be located near existing sources of light that might cause reflection.

3.2 Agriculture Resources

ENVIRONMENTAL SETTING

San Diego County is the most southwestern county in the continental United States with a geographic area of 4,200 square miles, approximately the size of Connecticut, and a population of more than three million. The National Weather Service characterized the San Diego climate as Mediterranean, with warm winters and cool summers. San Diego County's varied topography creates a wide fluctuation of microclimates resulting in nearly 30 different types of vegetation communities. This diversity allows for San Diego to grow over 200 different agricultural commodities - from strawberries along the coast, apples in the mountain areas, to grapefruit in the desert.

San Diego County has the fifth highest urban population among counties in the United States~~,~~ and the 17th largest agricultural economy. Agriculture in San Diego County covers 302,713 acres and is a key contributor to San Diego County's economy, along with defense, manufacturing, tourism, and biotechnology.

San Diego County has 6,687 farms, more than any other county in the United States. Sixty-eight percent of San Diego County farms are 1 to 9 acres in size. The high cost of water and land make farming in San Diego County expensive and encourages growers to raise products with a high dollar value per acre. San Diego produces the highest dollar value per acre of any county in California.

The median size farm is four acres and the county's farms rank number one in both California and the nation in the production value of nursery, floriculture, and avocados. Statewide, San Diego County is in the top five counties for cucumbers, mushrooms, tomatoes, boysenberries, strawberries, grapefruit, Valencia oranges, tangelos and tangerines, honey, and eggs.

San Diego County farmers produce 44 crops valued at $1.7 billion dollars annually. San Pasqual Valley is within the incorporated boundaries of the City of San Diego and is designated as an Agricultural Preserve per Council Policy 600-23. It is also part of one of the largest continuous blocks of habitat in the City's Multiple Species Conservation Program and part of one of the City's Cornerstone Lands.

Feral pigs have impacts to agricultural crops and can also damage private property, parkland, and open space preserves. It is believed that damage caused by wild pigs is small compared to overall economic value (>$32 billion in 2006) of agriculture activity, but the potential costs can be huge due to food safety concerns and disease outbreaks contributed to feral pigs (Kreith, 2007). Feral pigs are suspected of the September 2006 *E. coli* O157:H7 disease outbreak traced to consumption of spinach grown in San Benito or Monterey counties (Kreith, 2007). California county agriculture commissioners reported a $1.7 million loss in 2006, but it is believed this number may be underestimated because only 69% of all commissioners responded (Seward et al., 2003).

Feral pig rooting damage to a meadow in a private ranch in the Descanso area.

Feral pigs carry diseases such as brucellosis, psuedorabies, leptospirosis, and trichenella, which can impact livestock, as well as human health. Humans can contact both brucellosis and leptospirosis through handling of infected tissues and trichinosis is spread by intestinal roundworms via uncooked/undercooked meat. Swine brucellosis could potentially affect free roaming cattle.

	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
WOULD THE PROJECT:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use or a Williamson Act contract?	☐	☐	☐	☒
c) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use?	☐	☐	☐	☒

DISCUSSION

a) The project would not convert any land uses. The project is likely to prevent degradation and depredation of agricultural resources resulting from activities of feral pigs.

b) The project does not involve any zoning changes or conflicts with a Williamson Act contract.

c) The project would not make changes in existing environmental conditions, other than removal of feral pigs, which should prevent degradation of agricultural resources resulting from their impacts.

3.3 Air Quality

ENVIRONMENTAL SETTING

The Project Area is contained within the San Diego Air Basin (SDAB). The boundaries of the SDAB are contiguous with the political boundaries of San Diego County~~,~~ and encompass approximately 4,260 square miles. One of the main determinants of the climatology of San Diego County is the presence and location of a semi-permanent, high-pressure area (the Pacific High) in the eastern Pacific Ocean. In the summer, the Pacific High is located well to the north, causing storm tracks to be directed to the north and producing clear skies in San Diego County. However, during the winter, the Pacific High moves southward, and low-pressure storms are brought into the county, resulting in widespread precipitation. The heaviest precipitation occurs from November through April, averaging 6 to 15 inches along the coast to over 30 inches in the Laguna Mountains. The desert areas receive less than 9 inches per year. The average mean temperature is 62.2°F, and the maximum and minimum mean temperatures are 75.7°F and 48.5°F, respectively. The wind in the project area blows predominantly from the northwest most of the year, with Santa Ana winds usually blowing from the east during late fall and winter.

In general, air quality impacts from land use projects are typically the result of emissions from additional motor vehicle trips, and the short-term construction activities associated with such projects. Air quality at a given location can be described by units of concentration that are generally expressed in parts per million (ppm) or micrograms per cubic meter ($\mu g/m^3$) and is defined by ambient air concentrations of specific pollutants identified by the U.S. Environmental Protection Agency (EPA) to be of concern with respect to health and welfare of the general public. The EPA is responsible for enforcing the Federal Clean Air Act (CAA) of 1970 and its 1977 and 1990 Amendments. The CAA required the EPA to establish National Ambient Air Quality Standards (NAAQS), which identify concentrations of pollutants in the ambient air below which no adverse effects on the public health and welfare are anticipated.

The California Air Resources Board (CARB) has established the more stringent California Ambient Air Quality Standards (CAAQS) through the California CAA of 1988, and has established NAAQS for the following seven pollutants: Ozone (O_3); Respirable Particulate Matter (PM_{10}); Fine Particulate Matter ($PM_{2.5}$); Carbon Monoxide (CO); Nitrogen Dioxide (NO_2); Lead (Pb); and Sulfur Dioxide (SO_2). These pollutants are commonly known as “criteria” pollutants because their standards are based on certain criteria regarding impacts to health and human welfare. In addition to the seven pollutant standards established by NAAQS, the CAAQS has also established pollutant standards for the following pollutants of concern: Sulfates (S_2O_4), Hydrogen Sulfide (H_2S), Vinyl Chloride, and Visibility Reducing Particulates.

San Diego County is currently designated as an attainment area for CO, NO_2, Pb, SO_2, and S_2O_4. The County is a non-attainment area for O_3, PM_{10}, and $PM_{2.5}$. O_3 is formed when volatile organic compounds (VOCs) and nitrogen oxides (NO_x) react in the presence of sunlight. VOC sources include any source that burns fuels (e.g., gasoline, natural gas, wood, oil); solvents; petroleum processing and storage; and pesticides.

Sources of PM_{10} in both urban and rural areas include: motor vehicles, wood burning stoves and fireplaces, dust from construction, landfills, agriculture, wildfires, brush/waste burning, and industrial sources of windblown dust from open lands.

A major portion of the air pollution affecting the project area is wind-transported and likely arises from urban sources such as Orange, San Bernardino, Riverside, and Los Angeles counties. Tropical storm fronts occasionally enter the area from the east, carrying quantities of fine dust and silt. There is also air pollution generated inside the project area. Vehicles operating on the highways and primitive roads of the county produce exhaust emissions and contribute to the air-borne particulate matter (dust and sand). The nature of this project does not require any related construction and therefore would only generate operational emissions associated with vehicle trips and helicopters. No other potential sources of air pollutants have been identified based on the projected activities in the project description.

This study utilizes the San Diego County Land Use Environment Group established guidelines for determining significance which incorporate the Air Pollution Control District's (APCD) established screening-level criteria for all new source review (NSR) in APCD Rule 20.2. Since APCD Rules 20.2 and 20.3 do not have Air Quality Impact Analysis thresholds for emissions of VOCs and $PM_{2.5,}$ the use of the screening level for VOCs specified by the South Coast Air Quality Management District is utilized.

As such, the project would not violate any air quality standard or contribute substantially to an existing or projected air quality violation. Therefore, the vehicle trips and helicopter emissions associated with the proposed project is expected to be a less than significant impact to any existing or projected air quality violation due to the limited number of trapping stations (<30) erected over a large area at any one time.

	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
WOULD THE PROJECT*:				
a) Conflict with or obstruct implementation of the applicable air quality plan or regulation?	☐	☐	☐	☒
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 for which the project region is in non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☐	☐	☐	☒
d) Expose sensitive receptors to substantial pollutant concentrations (e.g., children, the elderly, individuals with compromised respiratory or immune systems)?	☐	☐	☐	☒

e) Create objectionable odors affecting a substantial number of people?	☐	☐	☐	☒

* Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied on to make these determinations.

DISCUSSION

a) The Feral Pig Eradication and Control project proposed for eastern San Diego County would not obstruct implementation of the Clean Air Plan of the San Diego Air Basin because treatment activities required for the project would generate only very minor pollutant emissions. Sources of project-related air emissions include trips by workers and helicopters. Total projected construction maximum daily emission levels for each criteria pollutant are anticipated to be below the established significance thresholds for all proposed activities for the associated pollutants.

b) No contributing vehicles or devices are expected to violate any air quality standard or contribute substantially to an existing or projected air quality violation. Variables that factor into the total project emissions potentially generated include the level of activity (number of traps operated, number of pieces and types of equipment in use, site characteristics, weather conditions, number of treatment personnel, and the amount of materials to be transported on or offsite). It is anticipated that project equipment would be used onsite for 4 to 8 hours a day; however, treatments would be short-term and impacts to neighboring uses would be minimal and temporary.

c) There shall be no cumulatively considerable net increase of any criteria pollutant for which the Clean Air Plan of the San Diego Air and Salton Sea Air Basins is in non-attainment because treatment activities required for the project would generate only very minor pollutant emissions.

d) Due to the limited treatment area (trapping sites) and short time period of treatment activities (<30 days per event) (including helicopter dispatch) the project would not expose children, the elderly, individuals with compromised respiratory or immune systems, and/or other sensitive receptors to substantial pollutant concentrations.

e) Pig carcasses would be taken offsite when feasible and disposed of according to applicable regulations when feasible. Some pig carcasses may be left in the project area to decompose, but this would not create objectionable odors affecting a substantial number of people due to the remoteness of the locations.

BEST MANAGEMENT PRACTICES: AIR QUALITY (AQ)
AQ 1: Idling of vehicles at trapping sites shall be minimized to the maximum extent.
AQ 2: Speed limit on all dirt roads shall not exceed 15 MPH.

3.4 Biological Resources

ENVIRONMENTAL SETTING

HABITAT TYPES

The following is a brief overview of the environmental setting and resources within the proposed project area.

Twenty-eight habitats (i.e., white fir, Jeffery pine, pinyon-juniper, closed-cone pine-cypress, montane hardwood-conifer, montane hardwood, coastal oak woodland, montane riparian, valley foothill riparian, eucalyptus, mixed chaparral, chamise-redshank chaparral, coastal scrub, desert succulent scrub, desert scrub, desert wash, pasture, annual grassland, perennial grassland, wet meadow, freshwater emergent wetland, lacustrine, riverine, vineyard, evergreen orchard, irrigated row and field crops, urban, and barren) were identified as potentially occurring within the proposed project area (Figure 2).

A total of 136 special-status plant species and 10 rare natural communities, 26 mammals, 24 avian, 6 amphibians, 14 reptiles, 4 fish, and 10 invertebrates were identified as having known occurrences within the potential project area (Tables 1 and 2). A query of the California Wildlife Habitat Relationships Program identified 452 wildlife species as potentially occurring within the project area in San Diego County. This included 305 avian species, 76 mammals, 57 reptiles, and 14 amphibians.

In addition, California provides habitat for 25 bat species in the families Phyllostomidae, Vespertillionidae, and Mollossidae with 23 species known to occur within San Diego County. Fourteen are rare and/or considered Mammal Species of Special Concern by California Department of Fish and Wildlife, Species of Concern by the U.S. Fish and Wildlife Service or the U.S. Forest Service.

The proposed project area is located within the South Coast Hydrologic Region, which covers approximately 6.78 million acres (10,600 square miles) of the southern California watershed that drains to the Pacific Ocean. Within this Hydrologic Region there are approximately 11 Hydrologic Units (Santa Margarita, San Luis Rey, Carlsbad, San Diego, Sweetwater, San Dieguito, Otay, Tijuana, Anza Borrego, Peñasquitos, and Clark). Numerous rivers and drainages (perennial and ephemeral) flow within the project area (Figure 3).

The City of San Diego Public Utilities Department manages 42,000 acres of land surrounding its water supply reservoirs, which are mostly outside the City boundaries, and surrounded by Forest Service, BLM, and tribal lands (see Figure 4). The reservoirs store impounded local rainfall and imported water. Approximately 30% of the water used by San Diegans is stored in these reservoirs, representing a significant portion of the City's water supply portfolio. The Cleveland National Forest was created, in large part, to protect municipal water supplies of the City and other coastal communities. These lands are managed for the primary and overarching purpose of protecting water quality in the reservoirs.

In addition, the City's four Cornerstone Lands (San Vicente, Marron Valley, Otay Reservoir, and Hodges/San Pasqual Valley) are associated with the Multiple Species Conservation Program (MSCP) and Subarea Plan (Figure 4). These sensitive and important core biological and cultural resource areas are essential "building blocks" of the City's habitat preserve system.

	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
WOULD THE PROJECT:				
a) Have a substantial adverse effect, either directly or through habitat modification, on any species identified as a sensitive, candidate, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or the U.S. Fish and Wildlife Service?	☐	☐	☒	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or the U.S. Fish and Wildlife Service?	☐	☐	☒	☐
c) Have a substantial adverse effect on federally protected wetlands, as defined by §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?	☐	☐	☒	☐

DISCUSSION

a) Feral pig traps or dispatches would be in locations-sited so as to avoid sensitive plants, impacts to native trees, and any animal burrows or ground nesting species. Access to the sites would also be conducted along existing roads/trails to the maximum extent feasible. Potentially significant impacts would be avoided by conducting vegetation surveys prior to trap placement. Any areas identified as sensitive bird nesting habitat would be avoided during the nesting season (March 1 –

Sept 1) and traps would not be placed in areas with potential for amphibian migration or in a manner that could impact significant invertebrate microhabitat. As a consequence, there would be no substantial adverse effect on any species identified as a sensitive, candidate, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or the U.S. Fish and Wildlife Service.

b) Traps, and access to the traps, would not occur in sensitive riparian habitat and would be sited to avoid any impacts to adjacent riparian areas, where applicable, and thus would not cause substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or the U.S. Fish and Wildlife Service.

c) No work is proposed to occur within the ordinary high water mark or within the bed and bank of any drainage thus there would be no substantial adverse effect on federally protected wetlands, as defined by §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) Traps would not impede the movement of any wildlife species and would be sited to avoid obstructing any wildlife activity including movement corridors. It is anticipated that the removal of feral pigs would increase the quality and quantity of native nursery sites for wildlife use.

e) Traps would be sited to avoid impacts to any sensitive plants or trees and no impact to environmental policies are expected.

f) Project activities would not conflict with the County of San Diego MSCP, City of San Diego MSCP, the Cuyamaca Rancho State Park or Anza-Borrego Desert State Park® General Plans, or the State Wilderness Act.

Best Management Practices: Biological Resources (BIO)
Botanical Species and Vegetation
BIO 1: No riparian vegetation shall be destroyed or removed.
BIO 2: Site capture traps and corrals to minimize impacts to native vegetation, and avoid large trees to the extent feasible.
Wildlife and Special-Status Species
BIO 3: No trapping or helicopter flights within 6,000 feet of known bald eagle or golden eagle nesting or wintering sites during the species' nesting or wintering seasons.

BIO 4: No ground disturbing or vegetation removal activities shall be authorized within any designated critical habitat, sensitive vegetation communities, or habitat historically known to support listed/sensitive species (e.g., meadows, seeps, vernal pools).
BIO 5: No sub-surface ground disturbing activities shall occur within occupied arroyo toad habitat.
BIO 6: Traps shall not be placed within water courses, on sand and gravel bars, and banks including immediate shorelines where various herpetological species including arroyo toad breeding or juvenile toad development may occur.
BIO 7: No placement of equipment (i.e., trucks, cage/corral materials, etc.) nor personnel shall be allowed within the stream channel.
BIO 8: No ground disturbing activities (trap placement) shall occur within occupied Quino checkerspot or Laguna Mountain skipper habitat or within suitable habitat (*Horkelia* sp. and/or *Plantago* sp. population areas) for the species.
BIO 9: A qualified biologist shall visit the trapping sites periodically throughout the duration of the project to ensure that all practicable measures are being employed to avoid incidental disturbance of stream habitat and any listed species.
BIO 10: Access to sites shall be via pre-existing access routes to the greatest extent possible. Project-related vehicle travel should be limited to daylight hours as arroyo toads use roadways primarily during night time hours. Night time lighting shall not be used unless absolutely necessary and approved by a qualified biologist.
BIO 11: Prior to trapping, evaluate habitat for sensitive species and take steps to minimize impacts on those species determined to be especially vulnerable.
BIO 12: Damage to natural surroundings in and around the trapping limits shall be avoided. Temporary barriers to protect existing trees, plants, and root zone shall be provided, if necessary. Trees and other vegetation shall not be removed, injured, or destroyed without prior written approval from the responsible agency or property/land owner. Ropes, cables, or fencing shall not be fastened to trees.
BIO 13: Using GIS data of the trapping locations, a qualified biologist shall conduct a vegetation survey at least one week prior to trap installation to determine presence or absence of sensitive vegetation. If present, the biologist will flag sensitive vegetation and notify trap installers about areas to avoid and provide guidance for the best siting of traps.
BIO 14: A qualified biologist shall provide recommendations on the potential placement of traps within a site, as a means of minimizing impacts to species/habitat, and will monitor the installation of the traps, at his/her discretion.

3.5 Cultural Resources

Environmental Setting

The cultural history and archaeological inventory of Cuyamaca Rancho (CRSP), Palomar Mountain (PMSP), and Anza-Borrego Desert State Park (ABDSP) were compiled during several major inventory efforts as well as during many smaller projects. Additionally, cultural history and archaeological data has been collected for numerous CDFW properties within the project area and the City of San Diego properties also have extensive and significant cultural resources.

Comprehensive archaeological and historical research was completed for CRSP during the General Plan inventory (Foster, 1981, Parkman, 1981). This information was updated as a result of three years of inventory survey after the 2003 Cedar Fire (Mealey, 2003, 2004, and 2005). Numerous smaller survey projects have been completed over the 80 years since the Park's creation; these are reviewed in Mealey's (2004) survey report. As a result of these efforts approximately 550 cultural resource sites have been recorded in the Park. As well, four Cultural Preserves have been designated and the prehistoric village site of *Ah-ha'-Kwe-ah'-mac*" has been listed on the National Register of Historic Places. The historic documents and Kumeyaay culture history demonstrate the importance of the Cuyamaca region to the Native American occupants; six named *rancherias* were located within the Park boundaries, in Cuyamaca Valley, Green Valley, East Mesa, and West Mesa. There are at least four areas listed in the Sacred Lands File maintained by the California Native American Heritage Commission. Historic sites of importance located in the Park include the nineteenth- and twentieth-century homesteads in Cuyamaca Valley and Green Valley, early transportation routes, "park rustic" facilities built by the Civilian Conservation Corps in the 1930s, the Stonewall Mine and Cuyamaca City, and numerous nineteenth- and twentieth-century ranching features.

The cultural resources of PMSP have been recorded by academic archaeologists, with smaller surveys completed for specific land management activities. Twenty-three archaeological sites have been recorded, including two major village sites at Silver Crest picnic area and Cedar Grove group camp, as well as smaller camps and resource processing sites surrounding the meadows in upper and lower Doane Valley. Historic occupation of the park is represented by the apple orchards that were associated with Doane, Quincy, Boucher, and Oliver homesteads. The Civilian Conservation Corps also developed campground features and structures in the early 1930s. The Boucher Fire Lookout, currently restored, is an excellent representation of early twentieth-century fire management facilities.

Over 5,000 archaeological sites have been recorded in ABDSP as a result of decades of archaeological survey by Park staff, academic institutions, and avocational archaeologists. The major research efforts include the Bureau of Land Management "Desert Survey" (BLM 1970s), the General Plan Inventory by University of California Riverside (Schneider et al., 2006), ABDSP Record Search and Site Evaluation (Mealey and Shabel, 2002), Archaeology and History of the Southern Overland Trail and Carrizo

Creek Stage Station (Van Wormer et al., 2007), and documents associated with the 2010 designation of seven Cultural Preserves (Schneider et al., 2010). Numerous smaller inventory and research reports have been generated related to Park management projects, trail and road surveys, and other research projects. As a result of these research efforts, over 4,500 years of prehistoric occupation have been documented in the Park. Large villages are documented in mountain-to-desert canyons and valleys surrounding cienegas, trails and stone features are located on the desert bajadas and badlands, rock art panels exist in numerous cave sites, and agave processing sites and lithic quarries abound in every area of the Park. Because of the remote desert location of most of the Park, the majority of cultural sites are relatively undisturbed by modern activities. Historic occupation of the desert was sparse, but is represented by the Southern Overland Trail and associated sites, ranching-related features, 1930s Civilian Conservation Corps campground development, and World War II training features.

In summary, a remarkable prehistoric and historic material record remains intact on the CRSP, PMSP, ABDSP, and city-owned landscapes. However, millennia of human occupation have influenced the natural and cultural landscapes of these areas. Prior to the arrival of Europeans in the region, Native Americans interacted with the natural landscape, harvesting and hunting plant and animal resources, as well as manipulating those resources with managed fire and incipient agriculture. Since the late 1700s, human influences on the cultural and natural landscape have increased significantly and permanently altered previous conditions. With the Europeans came introduced vegetation and grazing livestock, greater occupation density, and heavy impact technologies such as mining, cultivation, logging, and water control. Livestock grazing is documented as early as 1850. Grazing had a significant effect on keeping the landscape free of weeds and the brush low, but also has contributed to denuding of the natural vegetation, increased erosion, and impacts to many archaeological resources. Travelers and livestock on the Southern Overland Trail, as early as the 1840s, heavily impacted the landscape along its route. In CRSP, in the 1870s and 80s, the Stonewall Mine and Cuyamaca Reservoir negatively affected the forest and cultural landscape. The 1930s CCC campground development impacted the major villages in all three parks. However, since the mid-twentieth century, Park management has slowed the impacts of development on resources and removed livestock grazing and cultivation. Undoubtedly, the greatest recent impact to the integrity of the Park landscapes has been the wildfires of 2003 and 2007, the unprecedented intensity of which has irrevocably altered the natural and cultural resources. Currently, State Parks operations, maintenance, and resource staff work diligently to provide the best protective management possible for the cultural and natural landscape.

Unfortunately, the destructiveness of increasing populations of feral pigs threatens new heavy impacts on cultural resources. The proposed project is being implemented to protect the natural and cultural resources, and as such represents a positive effect on cultural resources within the project area. With sufficient trapping location review, archival and field research if necessary, and implementation of appropriate cultural resource avoidance measures, feral pig trapping activities can proceed with no significant impacts on cultural resources.

Feral pig damage to a cultural site in Cuyamaca Rancho State Park.

To ensure that no significant impacts occur to project area cultural resources the following measures in compliance with the California State Public Resources Code (5024.5, 5019.53, 5097.9, 5097.98), California Environmental Quality Act (21083.2 of the Statutes and 15064.5 of the Guidelines), Health and Safety Code (Section 7050.5), Department of Parks and Recreation Resource Management Directives 1832.1 (50&51), 1832.2 (55), 1832.3 (69&70), Department of Parks and Recreation Operations Procedures, Executive Order W-26-92, and the CRSP and ABDSP General Plans, should be implemented within CDPR lands.

a) Flag proposed trapping locations on the ground and provide GPS location data to District GIS and archaeological staff.

b) Using GIS location data for proposed trapping locations, District Archaeologist would complete records review and field survey if necessary to ensure that trapping location is not located within cultural resource site.

c) Prepare GIS maps identifying trapping locations that have been cleared for presence of cultural resources and provide to project personnel for their use.

	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
WOULD THE PROJECT:				
a) Cause a substantial adverse change in the significance of a historical resource, as defined in §15064.5?	☐	☐	☒	☐
b) Cause a substantial adverse change in the significance of an archaeological resource, pursuant to §15064.5?	☐	☒	☐	☐
c) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☒	☐	☐

DISCUSSION

a) The ground disturbance activities for this project are limited to the installation of fence posts (t-posts). Therefore, the potential for impacts to cultural or archaeological resources are deemed to be less than significant.

b) Historic archeological and Native American resources are known to occur within and adjacent to the project areas. Although the project has been designed to avoid significant impacts to cultural deposits, the potential remains for possible impacts to occur. The integration of Mitigation Measures as described below, would reduce impacts to previously unidentified archaeological sites and features to a less than significant level if encountered during ground disturbing activities.

c) Although the potential for human remains to be impacted in the project area is considered to be low, there still is a possibility that human remains could be encountered. The integration of Mitigation Measures would reduce potential impacts to a less than significant level.

Mitigation Measures: Cultural Resources (CR)
CR 1: An associated agency or governmental archaeologist will monitor all ground disturbing phases of the proposed project treatment sites within agency or governmental jurisdictional lands at his/her discretion. Monitoring will include all ground preparation work required for construction of corrals/traps. A request for a Native American monitor may be made prior to project work.

CR 2: In the event that previously undocumented cultural resources (including but not limited to dark soil containing shellfish, bone, flaked stone, ground stone, or deposits of historic trash) are encountered during the proposed project by anyone, all work will temporarily halt at that specific location. An Archaeologist will record and evaluate the find and work with the agency or governmental representative to implement avoidance, preservation, or recovery measures as appropriate and in accordance with the Secretary of the Interior's Standards and Guidelines for archaeological resource protection, prior to any work resuming at that specific location.
CR 3: In the unlikely event that human remains are discovered, work will cease immediately in the area of the find and the project manager/site supervisor will notify the appropriate agency or governmental personnel. The authorized representative will notify the County Coroner in accordance with §7050.5 of the California Health and Safety Code. If the coroner determines the remains represent Native American internment, the Native American Heritage Commission in Sacramento will be consulted to identify the most likely descendant/s and appropriate disposition of the remains. Work will not resume in the area of the find until proper disposition is complete (PRC §5097.98).

3.6 Geology and Soils

ENVIRONMENTAL SETTING

The project area encompasses a broad portion of San Diego County. Areas in San Diego County are located within fault-rupture hazard zones as identified by the Alquist-Priolo Earthquake Fault Zoning Act, Special Publication 42 (SP 42), Revised 1997, Fault-Rupture Hazards Zones in California or within an area with substantial evidence of a known fault. In addition, there are known areas of landslide susceptibility, liquefaction potential, and areas with highly erodible and expansive soils. Some geologic formations also have the potential to contain paleontological resources. Most impacts would result from ground disturbance or building within these areas. However, the project does not have a defined construction site nor is any grading or ground disturbing activities being proposed.

The Peninsular Ranges geomorphic province dominates the geological setting of the eastern project boundary and consists of a vast complex of batholithic rocks that extends from Baja California northward to the Transverse Ranges. At the northern end, the San Andreas Fault truncates the Peninsular Ranges and the Transverse Ranges. The eastern escarpment of the Peninsular Ranges reveals a series of well-exposed fault blocks. These detached blocks were created by the opening of the Salton Trough.

Significant earthquakes may occur on the following faults: the San Andreas fault zone, potential local magnitude 7.0; the San Jacinto fault zone, potential local magnitude 6.5; and Elsinore fault zone, potential local magnitude 6.0 (Working Group on California Earthquake Probabilities, 1988, 1995). The Elsinore fault zone extends from the northern Peninsular Ranges southward to the Gulf of California. The fault is parallel and west of the San Jacinto fault zone. In ABDSP, the Elsinore fault separates the San Ysidro, Vallecito, and Fish Creek Mountains from the Laguna and In-Ko-Pah Mountains on the west. Right lateral displacement along the main fault trace is approximately 30 miles (48 km). Vertical displacement and relief features along this fault reach as much as 9,000 feet (2,743 m) in depth.

In the early 1970s, the United States Department of Agriculture (USDA) conducted a soil survey that inventoried most of the County of San Diego. This soil-mapping project encompassed a broad “transect” through the region and likely documents the majority of soils found in the project area. Detailed information on these soil series is contained in the national Soil Survey Geographic (SSURGO) Database, available on the internet from the USDA–Natural Resources Conservation Service (NRCS) Soil Survey Division (http://soils.usda.gov/survey/geography/ssurgo/).

WOULD THE PROJECT:	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION	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 Publication 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 (1997), creating substantial risks to life or property?	☐	☐	☐	☒
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste disposal systems, where sewers are not available for the disposal of waste water?	☐	☐	☐	☒
f) Directly or indirectly destroy a unique paleontological resource or site, or unique geologic feature?	☐	☐	☐	☒

DISCUSSION

a) Deployment of various aspects of the project may occur in known seismically active areas. However, the time in any given area and the lack of any permanent structures involved in the project make actual exposure to dangerous seismic activity unlikely.

b) Protocol for this project requires limited to no soil disturbance and no soil loss of any kind is expected.

c) The nature of the project activities conducted outdoors and the mobility of the crews in the field would not expose people to substantial risk during a seismic event. No buildings or structures are proposed as part of the project.

d) The project is not expected to involve expansive soils, and would be transitory and temporary in nature and would not involve permanent structures.

e) No septic systems would be required or involved in this project.

f) There are no excavation activities proposed and treatment sites would be located to avoid impacts to known unique paleontological or geological resources.

3.7 Greenhouse Gas Emissions

ENVIRONMENTAL SETTING

Greenhouse Gas (GHG) emissions are said to result in an increase in the earth's average surface temperature commonly referred to as global warming. This rise in global temperature is associated with long-term changes in precipitation, temperature, wind patterns, and other elements of the earth's climate system, known as climate change. These changes are now broadly attributed to GHG emissions, particularly those emissions that result from the human production and use of fossil fuels.

GHGs include carbon dioxide, methane, halocarbons (i.e. HFCs), and nitrous oxide, among others. Human induced GHG emissions are a result of energy production and consumption, and personal vehicle use, among other sources. A regional GHG inventory prepared for the San Diego Region identified on-road transportation (cars and trucks) as the largest contributor of GHG emissions, accounting for 46% of the total regional emissions. Electricity production and natural gas combustion were the second (25%) and third (9%) largest regional contributors, respectively, to regional GHG emissions.

Climate changes resulting from GHG emissions could produce an array of adverse environmental impacts including water supply shortages, severe drought, increased flooding, sea level rise, air pollution from increased formation of ground level ozone and particulate matter, ecosystem changes, increased wildfire risk, agricultural impacts, ocean and terrestrial species impacts, among other effects.

In 2006, the State passed the Global Warming Solutions Act of 2006, commonly referred to as AB 32, which converted the greenhouse gas emissions reduction goal for the State of California into law. The law mandates that by 2020, State emissions must be reduced to 1990 levels by reducing greenhouse gas emissions from significant sources via regulation, market mechanisms, and other actions.

According to the San Diego County Greenhouse Gas Inventory (2008), the region must reduce its GHG emissions by 33 percent from "business-as-usual" emissions to achieve 1990 emissions levels by the year 2020. "Business-as-usual" refers to the 2020 emissions that would have occurred in the absence of the mandated reductions.

Senate Bill 375 (SB 375), passed in 2008, links transportation and land use planning with global warming. It requires the California Air Resources Board (ARB) to set regional targets for the purpose of reducing greenhouse gas emissions from passenger vehicles. Under this law, if regions develop integrated land use, housing, and transportation plans that meet SB 375 targets, new projects in these regions can be relieved of certain review requirements under CEQA. Development of regional targets is underway and the San Diego Association of Governments (SANDAG) is in the process of preparing the region's Sustainable Communities Strategy (SCS) which will be a new element of the 2050 Regional Transportation Plan (RTP). The strategy will identify how regional greenhouse gas reduction targets, as established by the ARB, will be achieved through development patterns, transportation infrastructure investments, and/or transportation measures or policies that are determined to be feasible. In addressing the potential for a project to generate GHG emissions that would have a potentially significant cumulative effect on the environment, a 900 metric ton threshold was selected to identify those

projects that would be required to calculate emissions and implement mitigation measures to reduce a potentially significant impact. The 900 metric ton screening threshold is based on a threshold included in the California Air Pollution Control Officers Association (CAPCOA) white paper that covers methods for addressing greenhouse gas emissions under CEQA. The CAPCOA white paper references the 900 metric ton guideline as a conservative threshold for requiring further analysis and mitigation. The 900 metric ton threshold was based on a review of data from four diverse cities (Los Angeles in southern California and Pleasanton, Dublin, and Livermore in northern California) to identify the threshold that would capture at least 90% of the residential units or office space on the pending applications list. This threshold will require a substantial portion of future development to minimize GHG emissions to ensure implementation of AB 32 targets are not impeded. By ensuring that projects that generate more than 900 metric tons of GHG implement mitigation measures to reduce emissions, it is expected that a majority of future development will contribute to emission reduction goals that will assist the region in meeting its GHG reduction targets.

It should be noted that an individual project's GHG emissions will generally not result in direct impacts under CEQA, as the climate change issue is global in nature; however, an individual project could be found to contribute to a potentially significant cumulative impact. CEQA Guidelines Section 15130(f) states that an EIR shall analyze greenhouse gas emissions resulting from a proposed project when the incremental contribution of those emissions may be cumulatively considerable.

San Diego County is presently in non-attainment for the 1-hour concentrations under the California Ambient Air Quality Standard (CAAQS) for O_3. San Diego County is also presently in non-attainment for the annual geometric mean and for the 24-hour concentrations of Particulate Matter less than or equal to 10 microns (PM_{10}) under the CAAQS. O_3 is formed when volatile organic compounds (VOCs) and nitrogen oxides (NO_x) react in the presence of sunlight. VOC sources include any source that burns fuels (e.g., gasoline, natural gas, wood, oil); solvents; petroleum processing and storage; and pesticides. Sources of PM_{10} in both urban and rural areas include motor vehicles, wood burning stoves and fireplaces, dust from construction, landfills, agriculture, wildfires, brush/waste burning, and industrial sources of windblown dust from open lands.

The Project Area is contained within the San Diego Air Basin. This air basin has varying levels of attainment or non-attainment for criteria pollutants. One of the main determinants of the climatology of the San Diego County is the presence and location of a semi-permanent, high-pressure area (the Pacific High) in the eastern Pacific Ocean. In the summer, the Pacific High is located well to the north, causing storm tracks to be directed to the north and producing clear skies in San Diego County. However, during the winter, the Pacific High moves southward, and low-pressure storms are brought into the county, resulting in widespread precipitation. The heaviest precipitation occurs from November through April, averaging 6-15 inches along the coast to over 30 inches in the Laguna Mountains. The desert areas receive less than 9inches per year. The average mean temperature is 62.2°F, and the maximum and minimum mean temperatures are 75.7°F and 48.5°F, respectively. The wind in the project area blows predominantly from the northwest most of the year with winds from the east confined to drier periods in late summer and fall. A major portion of the air pollution affecting the project area is wind-transported and likely arises from urban sources such as San Diego, Riverside, and the greater Los Angeles area. Tropical storm fronts occasionally enter the area

from the south and east, carrying quantities of fine dust and silt. There is also air pollution generated inside the project area. Vehicles operating on the highways, surface streets, and dirt roads of the county produce exhaust emissions and contribute to the air-borne particulate matter (dust and sand).

Air quality impacts from the proposed project operations are the result of emissions from motor vehicles and from short-term helicopter activities associated with the project. This study utilizes the San Diego County Land Use Environment Group (LUEG) established guidelines for determining significance which incorporate the Air Pollution Control District's (SDAPCD) established screening-level criteria for all new source review (NSR) in APCD Rule 20.2. These screening-level criteria are used as a numeric method to demonstrate that a project's total emissions (e.g. stationary and fugitive emissions, as well as emissions from mobile sources) would not result in a significant impact to air quality. Since APCD does not have screening-level criteria for emissions of VOCs, the use of the screening level for reactive organic compounds (ROC) from the South Coast Air Quality Management District (SCAQMD) for the Coachella Valley (which are more appropriate for the San Diego Air Basin) are used.

The nature of this project does not involve any related construction and therefore would only generate operational emissions associated with vehicle trips and helicopters. According to the Bay Area Air Quality Management District CEQA Guidelines for Assessing the Air Quality Impacts of Projects and Plans, projects that generate less than 2,000 average daily traffic (ADT) are below the screening-level criteria established by the LUEG guidelines for determining significance. As such, the project would not violate any air quality standard or contribute substantially to an existing or projected air quality violation. Therefore, the vehicle trips and helicopter emissions associated with the proposed project are not expected to significantly contribute to an existing or projected air quality violation. No other potential sources of air pollutants have been identified based on the projected activities in the project description.

	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO MPACT
Would the project:				
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

a) The project is expected to generate less than 900 metric tons of GHG emissions based on estimates of GHG emissions for various project types included in the CAPCOA white paper. Emissions from the project would be generated from passenger vehicles, small trucks, and helicopters. The project's GHG emissions are found to have a less than cumulatively

considerable contribution to GHG emissions because the project would generate less than 900 metric tons of GHGs.

Furthermore, projects that generate less than 900 metric tons of GHG would also participate in emission reductions because air emissions including GHGs are under the purview of CARB (or other regulatory agencies) and would be “regulated” either by CARB, the Federal Government, or other entities. As a result, even the emissions that result from projects that produce less than 900 metric tons of GHG will be subject to emission reductions. Likewise, the project would also participate in the mandated emissions reductions through energy and resource use that is subject to emission reduction mandates beyond “business-as-usual.”

Therefore, it is determined that the project would result in less than cumulatively considerable impacts associated with GHG emissions and no mitigation is required.

b) Until state and local plans are developed to address greenhouse gas emissions, such as a local Sustainable Communities Strategy and updated General Plan Policies, the project is evaluated to determine whether it would impede the implementation of AB 32 GHG reduction targets. For the reasons discussed in the response to question VII.a), the project would not impede the implementation of AB 32 reduction targets. Therefore, the project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

3.8 Hazards and Hazardous Materials

ENVIRONMENTAL SETTING

The San Diego County Department of Environmental Health Hazardous Materials Division (DEH HMD) is the Certified Unified Program Agency (CUPA) for San Diego County responsible for enforcing Chapter 6.95 of the Health and Safety Code. As the CUPA, the DEH HMD is required to regulate hazardous materials business plans and chemical inventory, hazardous waste and tiered permitting, underground storage tanks, and risk management plans. The Hazardous Materials Business Plan is required to contain basic information on the location, type, quantity, and health risks of hazardous materials stored, used, or disposed of onsite. The plan also contains an emergency response plan which describes the procedures for mitigating a hazardous release, procedures and equipment for minimizing the potential damage of a hazardous materials release, and provisions for immediate notification of the HMD, the Office of Emergency Services, and other emergency response personnel such as the local Fire Agency having jurisdiction. Implementation of the emergency response plan facilitates rapid response in the event of an accidental spill or release, thereby reducing potential adverse impacts. Furthermore, the DEH HMD is required to conduct ongoing routine inspections to ensure compliance with existing laws and regulations; to identify safety hazards that could cause or contribute to an accidental spill or release, and to suggest preventative measures to minimize the risk of a spill or release of hazardous substances.

The proposed project would not include use or transport of hazardous materials or create a hazard to the public from use or disposal of hazardous substances. The project would not result in a significant hazard to the public or environment because all storage, handling, transport, emission, and disposal of hazardous substances would be in full compliance with local, State, and Federal regulations. Animal carcasses are not considered hazardous waste by the U.S. EPA.

	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
WOULD THE PROJECT:				
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/or accident conditions involving the release of hazardous materials, substances, or waste 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 §65962.5, and, as a result, create a significant hazard to the public or environment?	☐	☐	☐	☒
e) Be 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? If so, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
f) Be located in the vicinity of a private airstrip? If so, 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?	☐	☐	☐	☒
h) Expose people or structures to a significant risk of loss, injury, or death from wildland fires, including areas where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☒	☐

DISCUSSION

a) Pig carcasses may be transported away from trap or dispatch sites. However this is not expected to be of a frequency or volume that poses a hazard or transport problem and no significant hazard or exposure to the public would reasonably occur because feral pigs groups (females and piglets) typically number only up to 10 or so and animal carcasses are not considered hazardous waste by the U.S. EPA. All disposal and transportation would be in accordance with applicable laws and regulations including in accordance with CCR 794.3.

b) The project would not create a significant hazard to the public or the environment through release of hazardous materials, substances, or waste. Handling and containment of pig carcasses is not expected to be of a frequency or volume that poses a hazard or transport problem and any accident during transport is not expected to pose a hazardous threat to the public due to the size and nature of the material.

c) No project activities are likely to occur within one-quarter mile of any school and transport problems or accidents are unlikely to result in any exposure to the public.

d) No project activities are scheduled in a hazardous waste site.

e) Though project activities may occur within two miles of an airport or airport planning area, the project would not result in a safety hazard for people residing or working in the project area.

f) Though project activities may be located in the vicinity of a private airstrip, the project would not result in a safety hazard for people residing or working in the project area.

g) Project activities would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

h) Project activities would not expose people or structures to a significant risk of loss, injury, or death from wildland fires, including areas where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

BEST MANAGEMENT PRACTICES: HAZARDS & HAZARDOUS MATERIALS (HAZ)
Haz 1: Spark arrestors or turbo chargers (which eliminate sparks in exhaust) and fire extinguishers will be required for all equipment.
Haz 2: Trapping crews will be required to park vehicles away from flammable material, such as dry grass or brush. At the end of each workday, equipment will be parked over mineral soil, asphalt, or concrete to reduce the chance of fire.

3.9 Hydrology and Water Quality

ENVIRONMENTAL SETTING

The project area is located within the South Coast Hydrologic Region, which covers approximately 6.78 million acres (10,600 square miles) of the southern California watershed that drains to the Pacific Ocean. Within this Hydrologic Region there are approximately 11 Hydrologic Units (Santa Margarita, San Luis Rey, Carlsbad, San Dieguito, San Diego, Sweetwater, Otay, Tijuana, Anza Borrego, Peñasquitos, and Clark) (Figure 3).

The Vista Irrigation District owns and operates Lake Henshaw, a 52,000 acre-foot impoundment on the upper San Luis Rey River, and the 43,000 acre (66 square mile) Warner Ranch in the watershed above the lake. The total catchment for the lake includes about 132,000 acres (207 square miles) within the project area. Water released from Lake Henshaw provides an average of 30 percent of the municipal water supply for about a half of a million residents in and around the communities of Vista, Escondido, San Marcos and Oceanside.

The City of San Diego Public Utilities Department manages 42,000 acres of land surrounding its water supply reservoirs, which are mostly outside the City boundaries, and surrounded by Forest Service, BLM, and tribal lands (see Figure 4). The reservoirs store impounded local rainfall and imported water. Approximately 30 percent of the water used by San Diegans is stored in these reservoirs, representing a significant portion of the City's water supply portfolio. The Cleveland National Forest was created, in large part, to protect municipal water supplies of the City and other coastal communities. These lands are managed for the primary and overarching purpose of protecting water quality in the reservoirs. These areas are also known to have a variety of biological resources consisting of scrub, chaparral, and riparian vegetation communities and a diversity of associated wildlife. In addition, the City's four Cornerstone Lands (San Vicente, Marron Valley, Otay Reservoir and Hodges/San Pasqual Valley) are within the project area and are part of the City's Multiple Species Conservation Program (MSCP) and Subarea Plan. These sensitive and important core biological and cultural resources are essential "building blocks" of the City's habitat preserve system.

	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
WOULD THE PROJECT:				
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 net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level that 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 alteration of the course of a stream or river, in a manner which would result in substantial on- or off-site erosion or siltation?	☐	☐	☐	☒
d)	Substantially alter the existing drainage pattern of the site or area, including through 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 on- or off-site flooding?	☐	☐	☐	☒
e)	Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☒	☐
f)	Substantially degrade water quality?	☐	☒	☐	☐
g)	Place housing within a 100-year flood hazard area, as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map, or other flood hazard delineation map?	☐	☐	☐	☒
h)	Place structures that would impede or redirect flood flows within a 100-year flood hazard area?	☐	☐	☐	☒
i)	Expose people or structures to a significant risk of loss, injury, or death from flooding, including flooding resulting from the failure of a levee or dam?	☐	☐	☐	☒
j)	Result in inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒

DISCUSSION

a) Implementation of the project would be conducted in accordance with all applicable local, State, and Federal water quality control standards and waste discharge requirements. With completion of trapping, beneficial impacts to water quality through a decrease in soil erosion and reduction of point-source pollution would result with the eradication/reduction of feral pig populations in various drainages.

b) The eradication and control of pigs would not use groundwater supplies resulting in substantial depletion of groundwater supplies nor substantially interfere with groundwater recharge.

c) No work associated with the project would substantially alter the existing drainage pattern of the site or area, including through alteration of the course of a stream or river, in a manner which would result in substantial on- or off-site erosion or siltation. All proposed traps would be installed outside or beyond any stream or river to avoid the potential for impacts to existing drainage patterns.

d) The project would not alter any existing drainage pattern of any trapping site or area, would not alter the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in on- or off-site flooding.

e) The project would not create or contribute runoff water which would exceed the capacity of

existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.

f) Although the project would not substantially degrade water quality, the potential remains that impacts could occur which would affect water quality. Implementation of the Mitigation Measures described below would reduce impacts below a level of significance. With completion of trapping, beneficial impacts to water quality through a decrease in soil erosion and reduction of point-source pollution would result with the eradication and control of feral pig populations in various drainages.

g) No new housing is proposed.

h) No permanent structures are proposed. Placement of the corrals/traps would not impede or redirect flood flows within a 100-year flood hazard area.

i) The project would not expose people or structures to a significant risk of loss, injury, or death from flooding, including flooding resulting from the failure of a levee or dam because no work within the bed and bank of any drainage (including any impoundment) is proposed.

j) The project would not result in inundation by seiche, tsunami, or mudflow.

MITIGATION MEASURES: Water Quality (WQ)
WQ 1: Equipment storage, fueling, and staging areas shall be located on previously disturbed upland sites, to the extent feasible, with minimal risks of direct drainage into riparian areas or other sensitive habitats.
WQ 2: No trapping activities shall be conducted within any wetland, the ordinary high water mark, or within the bed and bank of any drainage.
WQ 3: All wetland assessments and delineations if conducted shall be completed by a biologist trained in basic wetland delineation.
WQ 4: Pig carcasses will not be left within the ordinary high water mark or within the bed and bank of any drainage or wetland so as not to degrade water quality.
BEST MANAGEMENT PRACTICES: Water Quality (WQ)
WQ 5: The changing of oil, refueling, and other actions (e.g., washing of concrete, paint, or equipment) that could result in the release of a hazardous substance will be restricted to designated areas that are a minimum of 100 feet from any waterway. Such sites will be surrounded with berms, sandbags, or other barriers to further prevent the accidental spill of fuel, oil, or chemicals. Any discharges shall be immediately contained, cleaned up, and properly disposed, in accordance with the toxic material control and spill response plan.

3.10 Land Use and Planning

ENVIRONMENTAL SETTING

The project area includes lands that are managed by a variety of agencies. To the east are ABDSP and the Cleveland National Forest (CNF). Planning decisions for these lands are based on planning tools, such as General Plans, that help guide long-term planning goals and protect natural and cultural resources, and recreational opportunities. While CDPR is guided by its park units' General Plans, it takes other agencies' plans into consideration when developing its recreational facilities.

Cuyamaca Rancho State Park (CRSP) is operated by the California Department of Parks and Recreation and is part of the Colorado Desert District. The CRSP General Plan was adopted in April of 1986. The ABDSP General Plan was adopted in 2005. The County of San Diego updated their General Plan in 2011 and includes community plans for all the unincorporated communities and lands within its jurisdiction. The CNF is managed by the United States Forest Service. The CNF is guided by a Forest Plan (finalized in 2005) which describes the strategic direction for managing the land and its resources over the next 10 to 15 years.

The City of San Diego manages 42,000 acres of land surrounding its water supply reservoirs, which are mostly outside the City boundaries, and surrounded by Forest Service, BLM, and tribal lands (see Figure 4). The reservoirs store impounded local rainfall and imported water. Approximately 30 percent of the water used by San Diegans is stored in these reservoirs, representing a significant portion of the City's water supply portfolio. The CNF was created, in large part, to protect municipal water supplies of the City and other coastal communities. These lands are managed for the primary and overarching purpose of protecting water quality in the reservoirs.

In addition, the City's four Cornerstone Lands (San Vicente, Marron Valley, Otay Reservoir, and Hodges/San Pasqual Valley) are associated with the Multiple Species Conservation Program (MSCP) and Subarea Plan. These sensitive and important core biological and cultural resource areas are essential "building blocks" of the City's habitat preserve system.

The proposed, temporary actions would not affect the Land Use Planning documents for the project area or the ordinances, policies, and other plans that implement them. Feral pig management would not result in additional, or affect the growth of, development in these areas comprised of semi-rural and rural communities.

	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
WOULD THE PROJECT:				
a) Physically divide an established community?	☐	☐	☐	☒
b) Conflict with the applicable land use plan, policy, or regulation of any agency with jurisdiction over the project (including, but not limited to, a 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

a) No communities would be divided or significantly affected by trapping or temporary search and dispatch activities.

b) The project would not conflict with any land use plans that have been developed. The removal of exotic animals complies with regional and local planning guidelines/objectives and no significant conflict is expected.

c) The removal of exotic animals complies with regional habitat conservation plans and the County and City of San Diego's Multiple Species Conservation Program Subarea Plans. The proposed project activities would adhere to the City of San Diego's MSCP Multi-Habitat Planning Area (MHPA) Land Use Adjacency Guidelines.

BEST MANAGEMENT PRACTICES: Land Use and Planning (LU)
LU 1: Install unobtrusive informational signs to make the public aware of the traps and their purpose. Outreach shall also involve a collaborative effort between all affected agencies (Federal, State, and local), local tribal governments, and participating agencies to inform the public of these restrictions.
LU 2: To avoid attracting predators the project site shall be kept as clean of debris as possible. All food related trash items shall be enclosed in sealed containers and regularly removed from the site(s). Pets of project personnel shall not be allowed on-site, where they may come into contact with any listed species.

3.11 Mineral Resources

ENVIRONMENTAL SETTING

Much of the eastern portion of San Diego County has not been classified by the California Department of Conservation – Division of Mines and Geology (Update of Mineral Land Classification: Aggregate Materials in the Western San Diego Production-Consumption Region, 1997). Many areas within the project boundaries are underlain by either Cretaceous granitic rocks of the Peninsular Ranges batholiths; Upper Jurassic and Lower Cretaceous Santiago Peak metavolcanics; or Tertiary marine and non-marine sedimentary formations, which may contain mineral resource deposits suitable for crushed rock. However, due to the expensive mining and processing of crushed rock combined with transportation costs, this currently restricts crushed rock operations to urbanized areas within the Western San Diego Consumption Region of the County. The project would not preclude future mining activities and would not interfere with any active mining. Within State Parks, mining is not permissible as required by PRC Section 5001.65. Therefore, no potentially significant loss of availability of a known mineral resource of value to the region and the residents of the state would occur as a result of this project. Moreover, if the resources are not considered significant mineral deposits, loss of these resources cannot contribute to a potentially significant cumulative impact.

	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
WOULD THE PROJECT:				
a) Result in the loss of availability of a known mineral resource that is or 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

a) No activities of this project are expected to affect availability of mineral resources because there would be no removal of any mineral resources and treatment activities at the various locations would be conducted on a very short (<30 days) basis.

b) No activities of this project are expected to affect availability of locally important mineral resource recovery sites delineated in any local or other land use plan because the project would not preclude future mining activities and would not interfere with any active mining.

3.12 Noise

ENVIRONMENTAL SETTING

COUNTY OF SAN DIEGO GENERAL PLAN – NOISE ELEMENT

The County of San Diego General Plan, Noise Element addresses noise sensitive areas for the unincorporated County lands. It sets a standard for land uses and activities that may expose noise sensitive areas to noise in excess of a Community Noise Equivalent Level (CNEL) of 60 decibels (dBA). Noise sensitive areas include residences, hospitals, schools, libraries, or a similar facility where quiet is an important attribute. Project implementation is not expected to expose existing or planned noise sensitive areas to road, airport, heliport, railroad, industrial, or other noise in excess of the CNEL 60 dB(A).

COUNTY NOISE ORDINANCE – SECTION 36-404

Based on the limited noise associated with the project, non-transportation noise generated by the project is not expected to exceed the standards of the County of San Diego Noise Ordinance (Section 36-404). Noises resulting from hunting activities are limited to short impulse noises that do not result in increases in the hourly weighted average used to measure community noise levels. Helicopter noise is not regulated by the County's Noise Ordinance but falls under FAA regulations.

Finally, the project's conformance to the County of San Diego General Plan, Noise Element, Policy 4b and County of San Diego Noise Ordinance (Section 36-404), derived from State regulation to address human health and quality of life concerns, ensures the project would not create cumulatively considerable noise impacts, because the project would not exceed the local noise standards for noise sensitive areas; and the project would not exceed the applicable community noise levels and would not exceed noise level limits at the property line or entail construction noise. Therefore, the project would not contribute to a cumulatively considerable exposure of persons or generation of noise levels in excess of standards established in the local general plan, noise ordinance, and applicable standards of other agencies.

The project does not propose any of the following land uses that can be impacted by ground borne vibration or ground borne noise levels.

1) Buildings where low ambient vibration is essential for interior operation, including research and manufacturing facilities with special vibration constraints.
2) Residences and buildings where people normally sleep including hotels, hospitals, residences, and where low ambient vibration is preferred.
3) Civic and institutional land uses including schools, churches, libraries, other institutions, and quiet offices where low ambient vibration is preferred.
4) Concert halls for symphonies or other special use facilities where low ambient vibration is preferred.

	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
WOULD THE PROJECT:				
a) Generate or expose people to noise levels in excess of standards established in a local general plan or noise ordinance, or in other applicable local, state, or federal standards?	☐	☐	☐	☒
b) Generate or expose people to excessive ground borne vibrations or ground borne noise levels?	☐	☐	☐	☒
c) Create a substantial permanent increase in ambient noise levels in the vicinity of the project (above levels without the project)?	☐	☐	☐	☒
d) Create a substantial temporary or periodic increase in ambient noise levels in the vicinity of the project, in excess of noise levels existing without the project?	☐	☐	☒	☐
e) Be 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? If so, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
f) Be in the vicinity of a private airstrip? If so, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

DISCUSSION

a) The project would not generate or expose people to noise levels in excess of standards established in a local general plan or noise ordinance, or in other applicable local, state, or federal standards. Based on the limited noise that would be associated with the project, non-transportation noise generated by the project would not be expected to exceed the standards of the County of San Diego Noise Ordinance (Section 36-404). Noises resulting from search and dispatch activities would be limited to short impulse noises that would not result in increases in the hourly weighted average used to measure community noise levels.

b) The project does not propose any new or expanded infrastructure such as mass transit, highways or major roadways, or intensive extractive industry that could generate excessive ground borne vibration or ground borne noise levels on-site or in the surrounding area. The primary ground disturbing activity would be the installation of traps at various treatment sites.

c) The project would not create a substantial permanent increase in ambient noise levels in the vicinity of the project (above levels without the project). No permanent facilities are proposed.

d) Though there would be a temporary periodic increase in noise levels during the construction of traps, it would not be considered excessive due to the various pieces of equipment used and the likely remoteness of most potential trapping sites. Noises resulting from search and dispatch activities are limited to short impulse noises that do not result in increases in the hourly weighted average used to measure community noise levels.

e) Trapping and dispatch areas may potentially be 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. Due to the remoteness of most potential trapping sites, the project would not expose people residing or working in the project area to excessive noise levels from trapping activities or types of equipment used. Noises resulting from search and dispatch activities would be limited to short impulse noises that would not result in increases in the hourly weighted average used to measure community noise levels.

f) Although there could be project activities ongoing in the vicinity of a private airstrip, the project would not expose people residing or working in the project area to excessive noise levels due to the types of equipment used and the likely remoteness of most potential trapping sites. Noises resulting from search and dispatch activities would be limited to short impulse noises that would not result in increases in the hourly weighted average used to measure community noise levels.

BEST MANAGEMENT PRACTICES: Noise
Noise 1: All equipment shall have sound-control devices that are no less effective than those provided on the original equipment. No equipment shall have an unmuffled exhaust.
Noise 2: To minimize helicopter noise impacts, buffer zones of 0.5 mile will be established around communities and residential subdivisions; buffer zones of 1,000 feet will be established around private lands and other facilities.

3.13 Population and Housing

ENVIRONMENTAL SETTING

The population in the unincorporated County of San Diego is estimated at 503,320; however, the population centers that are likely to have feral pig management actions are much less, estimated at 173,847 persons. Alpine (population 17,609), Central Mountain (population 5,541), Crest – Dehesa (population 10,507), Lakeside (population 77,442), Mountain Empire (population 5,815), North Mountain (includes Palomar population – 3,187), Ramona (population 36,164), and Valley Center (population 17,582) are the communities likely adjacent to potential project activities, although the population centers of these communities would not likely be affected by the project. The eradication and control of feral pigs would not result in human-population inducing actions, or the displacement of any special needs housing.

	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
WOULD THE PROJECT:				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
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

a) The project would not induce substantial population growth in an area because the project does not propose any physical or regulatory change that would remove a restriction to or encourage population growth in an area.

b) The project would not displace any existing housing.

c) The project would not displace any people as it does not include any ground disturbing activities or building of structures.

3.14 Public Services

ENVIRONMENTAL SETTING

This is a multi-agency project and would not result in the need for additional staff support. Enforcement personnel such as rangers, provide law enforcement on public lands. CAL FIRE provides fire protection to CDPR and CDFW lands. San Diego County includes multiple fire districts and agencies. No additional assistance would be required from these agencies. No new public services such as trash, water, or electricity would be required for any of the project sites.

	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
WOULD THE PROJECT:				
a) Result in significant environmental impacts from construction associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities, to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:	☐	☐	☒	☐
Fire protection?	☐	☐	☒	☐
Police protection?	☐	☐	☐	☒
Schools?	☐	☐	☐	☒
Parks?	☐	☐	☒	☐
Other public facilities?	☐	☐	☐	☒

DISCUSSION

a) No facilities would be constructed and no new public services such as law enforcement, fire protection, education, recreation, trash, water, or electricity would be required for any of the project sites. There could be short-term closures of roads on City, County, and State-owned properties which could affect public access. Closures would be minimized in high-use recreation areas, particularly on weekends and holidays.

3.15 Recreation

ENVIRONMENTAL SETTING

The project includes lands within PMSP, CRSP, and ABSDSP, all units of the California State Park System. The Parks' assortment of natural and cultural resources support a wide variety of recreational activities, including nature watching, educational study and interpretation, hiking, picnicking, backpacking, camping, mountain biking, and horseback riding. Many miles of primitive roads traverse the three State Park units in the project area, although motorized vehicles or powered equipment of any type are not allowed within Wilderness areas. It is anticipated that the proposed project would result in a net benefit for State Parks, its visitors, and neighboring recreational land managers.

The CDFW has numerous Ecological Reserves and Wildlife Areas located within the project limits. These include but are not limited to San Felipe Valley Wildlife Area (SFVWA), Hollenbeck Canyon Wildlife Area, Rancho Jamul Ecological Reserve, Canada de San Vicente Ecological Reserve, Boden Canyon Ecological Reserve, Crestridge Ecological Reserve, San Vicente Highlands Ecological Reserve, Boulder Creek Ecological Reserve, Plaisted Creek Ecological Reserve, and the Oak Grove Unit of the SFVWA.

Ecological Reserves have been designated to conserve areas for the protection of rare plants, animals, and habitats and to provide areas for education and scientific research. Ecological Reserves also provide educational and recreational opportunities for wildlife viewing, nature watching, and fishing. The CDFW acquires wildlife areas to conserve areas of high and very high quality habitat, including areas occupied by endangered species, while providing compatible wildlife-dependent recreational opportunities such as hunting, fishing, and wildlife viewing to the public.

Although no feral pigs have been seen on any County park or preserve, two County land ownerships—Santa Ysabel West and William Heise Park—are included within the boundary in which feral pigs have been sighted. -In addition, 12 County owned or managed open space preserves and parks are within the project boundaries including Santa Ysabel East, Santa Ysabel West, Volcan Mountain, Simon Park, Mt. Gower (managed for BLM); William Heise Park, Barnett Ranch, Boulder Oaks, Oakoasis, Stelzer, El Monte and El Capitan (managed for BLM).

If feral pigs are found on any of these County lands, park rangers would work with the feral pig manager to determine the appropriate method and time for management of the pigs to ensure the safety of the public. Measures may include scheduling of management activities when the preserves are closed to the public (after sunset) and during temporary closures of trails. Feral pig management activities on County preserve lands would be conducted in accordance with non-native wildlife species directives contained in the Resource Management Plan.

The City of San Diego provides recreational opportunities for fishing at many of the reservoirs within the project area, such as San Vicente, El Capitan, Barrett, and via a lease agreement with the County, at Morena Reservoir. Feral pigs have been sighted at several of the southernmost reservoirs.

Other recreation providers include: Cleveland National Forest, Laguna Mountain National Recreation Area (Forest Service), Lake Cuyamaca Recreation and Park District, and the private recreation developments, such as KQ Ranch Resort, Oakzanita, Thousand Trails, and Stallion Oaks Ranch in Descanso.

	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
WOULD THE PROJECT:				
a) 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) Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	☐	☐	☐	☒

DISCUSSION

a) The project would not increase use of any parks or recreational facilities by the public and use of limited access areas would be temporary and not expected to significantly impact regular maintenance of any facility.

b) The project would not create any new recreational facilities and no expansion or permanent construction would occur under this project.

3.16 Transportation/Traffic

ENVIRONMENTAL SETTING

In the unincorporated County, the road network is by far the most dominant component of the County's transportation system. Although motorists are the primary users of the system, transit riders, bicyclists, pedestrians, and equestrians rely on the network for mobility within the unincorporated County, as well as the greater San Diego region. State highways and regional arterials in the unincorporated County are part of an extensive regional network that is integrated with an interstate highway system that provides intra- and interregional travel within and through the unincorporated County.

The transportation system in eastern San Diego County includes County and State roads that form the backbone of a regional network providing movement within and between communities in the unincorporated County. The eastern County is served by Interstate 8 and State Highways 94, 79, 78, 76, and 67. Additional routes S1, S2, S3, S6, S7, and S22 provide access between communities. The network of state highways is managed and maintained by the California Department of Transportation (Caltrans). With the exception of state roads and highways, the County is responsible for the operation and maintenance of the public roadway system in unincorporated areas of the County, along with the operation of eight public aviation facilities. The San Diego Association of Governments (SANDAG) serves as the regional planning agency for the entire County and is a key partner along with other state, regional, and public agencies, in planning and funding roadways and other components of the transportation network within the County. In addition to State and County maintained roads, there are also private roads that provide localized access for private citizens and uses.

There could be short-term closures of roads on City, County, and State-owned properties which could affect public access. Closures would be minimized in high-use recreation areas, particularly on weekends and holidays.

	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
WOULD THE PROJECT:				
a) Cause a substantial increase in traffic, in relation to existing traffic and the capacity of the street system (i.e., a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?	☐	☐	☒	☐
b) Exceed, individually or cumulatively, the level of service standards established by the county congestion management agency for designated roads or highways?	☐	☐	☐	☒
c) Cause 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) Contain a design feature (e.g., sharp curves or a dangerous intersection) or incompatible uses (e.g., farm equipment) that would substantially increase hazards?	☐	☐	☐	☒
e) Result in inadequate emergency access?	☐	☐	☐	☒
f) Result in inadequate parking capacity?	☐	☐	☐	☒
g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	☐	☐	☐	☒

DISCUSSION

a) The project would not result in any substantial increase in traffic, in relation to existing traffic and the capacity of the street system, and would not alter the surrounding circulation system in any way. Therefore, the project would not conflict with any applicable plan, ordinance, or policy establishing measures of the effectiveness of the circulation system.

b) The project would not exceed, individually or cumulatively, the level of service standards established by the County congestion management agency for designated roads or highways. The proposed project would result in less than 30 vehicle trips per day. The trips would be dispersed and not focused to one area or road. The project would not have a significant impact related to a conflict with any performance measures establishing measures of effectiveness of the circulation system because the project trips do not exceed any of the County's Guidelines for Determining Significance for impacts related to Traffic and Transportation. As identified in the County's Guidelines for Determining Significance for Traffic and Transportation, the project trips would not result in a substantial increase in the number of vehicle trips, volume of capacity ratio on roads, or congestion at intersections in relation to existing conditions. In addition, the project would not conflict with policies related to non-motorized travel such as mass transit, pedestrian, or bicycle facilities. Therefore, the project would not conflict with any policies establishing measures of the effectiveness for the performance of the circulation system and no mitigation is required.

c) The project would not cause a change in air traffic patterns, including either an increase in traffic levels or a change in location, which results in substantial safety risks.

d) The project would not contain any design features or incompatible uses that would substantially increase hazards. No roadwork is proposed.

e) The project would not result in inadequate emergency access.

f) The project would not result in inadequate parking capacity.

g) The project would not conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks).

3.17 Utilities and Service Systems

ENVIRONMENTAL SETTING

Land uses in San Diego County are supported by a diversity of public utilities and services. Among these are water supply, wastewater collection and treatment, solid waste management, schools, and libraries. San Diego County is located in a semi-arid to arid climate with limited local water supplies, requiring that the majority of its water resources be imported. The County is not a purveyor of water and must rely on the San Diego County Water Authority (SDCWA) and its member agencies to provide the majority of water delivery to the region. Fifteen of the 24 current SDCWA member agencies provide water to the unincorporated areas of the County. An additional 14 independent special districts, along with private water systems, provide services to the unincorporated County.

There are 10 drinking source water reservoirs in the unincorporated County. The reservoirs are owned and operated by either local water districts or cities in the region. Most are operated and managed by the City of San Diego. While these reservoirs do not provide potable water for residents outside the urban areas, they are used by County residents for recreation and provide valuable habitat (Figure 4). The majority of unincorporated east county is supplied by groundwater resources and individual wells. Feral pig excrement and urine, as well as rooting activity near drainages and/or wells, would continue to be contributors of point-source pollution and would therefore continue to affect water quality.

The majority of sewage treatment and disposal in the unincorporated areas of San Diego County is accomplished by one of the following three methods: (1) regional systems maintained by public water or sewer districts, (2) small wastewater treatment facilities operated by independent districts or the County, and (3) on-site subsurface sewage disposal (septic) systems. The method of treatment and disposal often depends on the district's location. Generally, those districts located in proximity to the City of San Diego are members of the San Diego Metropolitan Sewerage System (Metro) and use its system for treatment and effluent disposal. A number of agencies also use a combination of the Metro system and inland treatment and disposal. Those districts located near the coastal areas provide effluent disposal through the use of an ocean outfall. Those districts located inland (a majority of the unincorporated areas of the County) provide sewage treatment and disposal through reuse, spray fields, evaporation, and other techniques.

The County of San Diego Department of Public Works (DPW) Wastewater Management Section (WWM) is responsible for maintaining sewer lines, pump stations, force mains, and several treatment plants for the unincorporated areas of Alpine, Julian, Lakeside, Spring Valley, Pine Valley, Campo, East Otay Mesa, and the Winter Gardens area. Wastewater flows originating within the communities of Alpine, Lakeside, Winter Gardens, Spring Valley, and East Otay Mesa are transmitted to the City of San Diego Metro system for treatment and disposal. The remaining communities of Julian, Pine Valley, and Campo utilize "inland" treatment and disposal systems.

	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
WOULD THE PROJECT:				
a) Exceed wastewater treatment restrictions or standards 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?	☐	☐	☐	☒
Would the construction of these facilities cause significant environmental effects?	☐	☐	☐	☒
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities?	☐	☐	☐	☒
Would the construction of these facilities cause significant environmental effects?	☐	☐	☐	☒
d) Have sufficient water supplies available to serve the project from existing entitlements and resources or are new or expanded entitlements needed?	☐	☐	☐	☒
e) Result in a determination, by the wastewater treatment provider that serves or may serve the project, that it has adequate capacity to service the project's anticipated 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 as they relate to solid waste?	☐	☐	☐	☒

DISCUSSION

a) The project would not exceed wastewater treatment restrictions or standards of the applicable Regional Water Quality Control Board. No permanent construction or additional facilities would occur under this project and all processing applications are of a scale to be easily accommodated by current utilities and water supplies.

b) The project would not require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities.

c) The project would not require or result in the construction of new storm water drainage facilities or expansion of existing facilities.

d) There would be sufficient water supplies available to serve the project from existing entitlements and resources and no new or expanded entitlements would be needed.

e) The project would not result in a determination by the wastewater treatment provider that serves or may serve the project indicating it would have inadequate capacity to service the project's anticipated demand, in addition to the provider's existing commitments.

f) The project would be served by a landfill with sufficient capacity to accommodate the project's solid waste disposal needs.

g) The project would comply with all federal, state, and local statutes and regulations as they relate to solid waste.

Chapter 4. Mandatory Findings of Significance

	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION	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 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?	☐	☐	☒	☐
b) Have the potential to eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐
c) Have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means the incremental effects of a project are considerable when viewed in connection with the effects of past projects, other current projects, and probable future projects?)	☐	☐	☒	☐
d) Have environmental effects that will cause substantial adverse effects on humans, either directly or indirectly?	☐	☐	☒	☐

DISCUSSION

a) The project does not have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or native animal community, reduce the number or restrict the range of a rare or endangered plant or animal, as long as the Best Management Practices included in Chapter 3 are implemented. Habitat improvement over the long-term is likely to occur as a result of efforts to reduce feral pig populations on sensitive habitat throughout the project area.

b) Project design and cultural resource mitigation measures would ensure that there is a less than significant impact to this area. In addition, implementation of this project would reduce impacts to cultural resources throughout the project area.

c) Less than significant cumulative impacts are associated with the project when viewed in conjunction with the effects of past projects, other current projects and probable future projects.

d) The project would not have environmental impacts that would cause substantial adverse effects on humans, either directly or indirectly. Noise caused by various project activities including helicopter operations shall be minimal.

Chapter 5. Best Management Practices and Mitigation Measures

The following Best Management Practices and Mitigation Measures would be implemented by CDPR, DFW, or by a contractor hired by the City or County of San Diego, Vista Irrigation District, and/or Helix Water Districts, as part of the Feral Pig Eradication and Control Project, and shall be incorporated into associated permits or authorizations.

General Trapping Activities

Pre-trapping briefings shall be required to educate trapping crews regarding all Best Management Practices required as described below including: protection of cultural resources, protection of natural resources and protection of species listed by CDFW and USFWS as threatened, endangered, or species of concern.

All tools, equipment, traps, signs, surplus materials, and rubbish shall be removed from the project area upon completion of trapping.

Disturbed or developed areas shall be used for staging, whenever possible.

Weekly coordination meetings and monitoring reports shall be utilized to review any issues and perform remedial activities, as needed.

Damage to natural surroundings in and around the trapping limits shall be avoided. Temporary barriers to protect existing trees, plants, and root zones shall be provided, if necessary. Trees and other vegetation shall not be removed, injured, or destroyed without prior written approval from the project manager(s). Ropes, cables, or fencing shall not be fastened to trees.

Air Quality (AQ)

BEST MANAGEMENT PRACTICES: AIR QUALITY (AQ)
AQ 1: Idling of vehicles at trapping sites shall be minimized to the maximum extent.
AQ 2: Speed limit on all dirt roads shall not exceed 15 MPH.

BEST MANAGEMENT PRACTICES: BIOLOGICAL RESOURCES (BIO)
Botanical Species and Vegetation
BIO 1: No riparian vegetation shall be destroyed or removed.
BIO 2: Site capture traps and corrals to minimize impacts to native vegetation, and avoid large trees to the extent feasible.
Wildlife and Special-Status Species
BIO 3: No trapping or helicopter flights within 6,000 feet of known bald eagle or golden eagle nesting or wintering sites during the species' nesting or wintering seasons.

BIO 4: No ground disturbing or vegetation removal activities shall be authorized within any designated critical habitat, sensitive vegetation communities, or habitat historically known to support listed/sensitive species (e.g., meadows, seeps, vernal pools).
BIO 5: No sub-surface ground disturbing activities shall occur within occupied arroyo toad habitat.
BIO 6: Traps shall not be placed within water courses, on sand and gravel bars, and banks including immediate shorelines where various herpetological species including arroyo toad breeding or juvenile toad development may occur.
BIO 7: No placement of equipment (i.e., trucks, cage/corral materials, etc.) nor personnel shall be allowed within the stream channel.
BIO 8: No ground disturbing activities (trap placement) shall occur within occupied Quino checkerspot or Laguna Mountain skipper habitat or within suitable habitat (*Horkelia* sp. and/or *Plantago* sp. population areas) for the species.
BIO 9: A qualified biologist shall visit the trapping sites periodically throughout the duration of the project to ensure that all practicable measures are being employed to avoid incidental disturbance of stream habitat and any listed species.
BIO 10: Access to sites shall be via pre-existing access routes to the greatest extent possible. Project-related vehicle travel should be limited to daylight hours as arroyo toads use roadways primarily during night time hours. Night time lighting shall not be used unless absolutely necessary and approved by a qualified biologist.
BIO 11: Prior to trapping, evaluate habitat for sensitive species and take steps to minimize impacts on those species determined to be especially vulnerable.
BIO 12: Damage to natural surroundings in and around the trapping limits shall be avoided. Temporary barriers to protect existing trees, plants, and root zone shall be provided, if necessary. Trees and other vegetation shall not be removed, injured, or destroyed without prior written approval from the responsible agency or property/land owner. Ropes, cables, or fencing shall not be fastened to trees.
BIO 13: Using GIS data of the trapping locations, a qualified biologist shall conduct a vegetation survey at least one week prior to trap installation to determine presence or absence of sensitive vegetation. If present, the biologist will flag sensitive vegetation and notify trap installers about areas to avoid and provide guidance for the best siting of traps.
BIO 14: A qualified biologist shall provide recommendations on the potential placement of traps within a site, as a means of minimizing impacts to species/habitat, and will monitor the installation of the traps, at his/her discretion.

MITIGATION MEASURES: CULTURAL RESOURCES (CR)
CR 1: An associated agency or governmental archaeologist will monitor all ground disturbing phases of the proposed project treatment sites within agency or governmental jurisdictional lands at his/her discretion. Monitoring will include all ground preparation work required for construction of corrals/traps. A request for a Native American monitor may be made prior to project work.

CR 2: In the event that previously undocumented cultural resources (including but not limited to dark soil containing shellfish, bone, flaked stone, ground stone, or deposits of historic trash) are encountered during the proposed project by anyone, all work will temporarily halt at that specific location. An Archaeologist will record and evaluate the find and work with the agency or governmental representative to implement avoidance, preservation, or recovery measures as appropriate and in accordance with the Secretary of the Interior's Standards and Guidelines for archaeological resource protection, prior to any work resuming at that specific location.
CR 3: In the unlikely event that human remains are discovered, work will cease immediately in the area of the find and the project manager/site supervisor will notify the appropriate agency or governmental personnel. The authorized representative will notify the County Coroner in accordance with §7050.5 of the California Health and Safety Code. If the coroner determines the remains represent Native American internment, the Native American Heritage Commission in Sacramento will be consulted to identify the most likely descendant/s and appropriate disposition of the remains. Work will not resume in the area of the find until proper disposition is complete (PRC §5097.98).

BEST MANAGEMENT PRACTICES: HAZARDS & HAZARDOUS MATERIALS (HAZ)
Haz 1: Spark arrestors or turbo chargers (which eliminate sparks in exhaust) and fire extinguishers will be required for all equipment.
Haz 2: Trapping crews will be required to park vehicles away from flammable material, such as dry grass or brush. At the end of each workday, equipment will be parked over mineral soil, asphalt, or concrete to reduce the chance of fire.

MITIGATION MEASURES: Water Quality (WQ)
WQ 1: Equipment storage, fueling, and staging areas shall be located on previously disturbed upland sites, to the extent feasible, with minimal risks of direct drainage into riparian areas or other sensitive habitats.
WQ 2: No trapping activities shall be conducted within any wetland, the ordinary high water mark, or within the bed and bank of any drainage.
WQ 3: All wetland assessments and delineations if conducted shall be completed by a biologist trained in basic wetland delineation.
WQ 4: Pig carcasses will not be left within the ordinary high water mark or within the bed and bank of any drainage or wetland so as not to degrade water quality.
BEST MANAGEMENT PRACTICES: Water Quality (WQ)
WQ 5: The changing of oil, refueling, and other actions (e.g., washing of concrete, paint, or equipment) that could result in the release of a hazardous substance will be restricted to designated areas that are a minimum of 100 feet from any waterway. Such sites will be surrounded with berms, sandbags, or other barriers to further prevent the accidental spill of fuel, oil, or chemicals. Any discharges shall be immediately contained, cleaned up, and properly disposed, in accordance with the toxic material control and spill response plan.

BEST MANAGEMENT PRACTICES: LAND USE AND PLANNING (LU)
LU 1: Install unobtrusive informational signs to make the public aware of the traps and their purpose. Outreach shall also involve a collaborative effort between all affected agencies (Federal, State, and local), local tribal governments, and participating agencies to inform the public of these restrictions.
LU 2: To avoid attracting predators the project site shall be kept as clean of debris as possible. All food related trash items shall be enclosed in sealed containers and regularly removed from the site(s). Pets of project personnel shall not be allowed on-site, where they may come into contact with any listed species.

BEST MANAGEMENT PRACTICES: NOISE
Noise 1: All equipment shall have sound-control devices that are no less effective than those provided on the original equipment. No equipment shall have an unmuffled exhaust.
Noise 2: To minimize helicopter noise impacts, buffer zones of 0.5 mile will be established around communities and residential subdivisions; buffer zones of 1,000 feet will be established around private lands and other facilities.

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Chapter 7. Report Preparation

California Department of Parks and Recreation:

ERIC HOLLENBECK, ENVIRONMENTAL SCIENTIST
GAIL SEVRENS, SENIOR PARK AND RECREATION SPECIALIST
SUE WADE, ASSOCIATE STATE ARCHAEOLOGIST
LUKE SERNA, ASSOCIATE PARK AND RECREATION SPECIALIST

City of San Diego:

CATHY CIBBIT, PROJECT OFFICER, PUBLIC UTILITIES DEPARTMENT
KRISTY FORBURGER, SENIOR PLANNER, DEVELOPMENT SERVICES DEPARTMENT
JEFF PASEK, WATERSHED MANAGER, PUBLIC UTILITIES DEPARTMENT
KIM WEHINGER, NATURAL RESOURCE PLANNER, PUBLIC UTILITIES DEPARTMENT

County of San Diego:

LEANN CARMICHAEL, PROGRAM MANAGER
ERIC LARDY, DCAO STAFF OFFICER

California Department of Fish and Wildlife:

RICHARD BURG, SENIOR ENVIRONMENTAL SCIENTIST

Vista Irrigation District:

DON SMITH, DIRECTOR OF WATER RESOURCES

Figures, Tables, and Appendix

Figure 1. Project Location Map, San Diego County

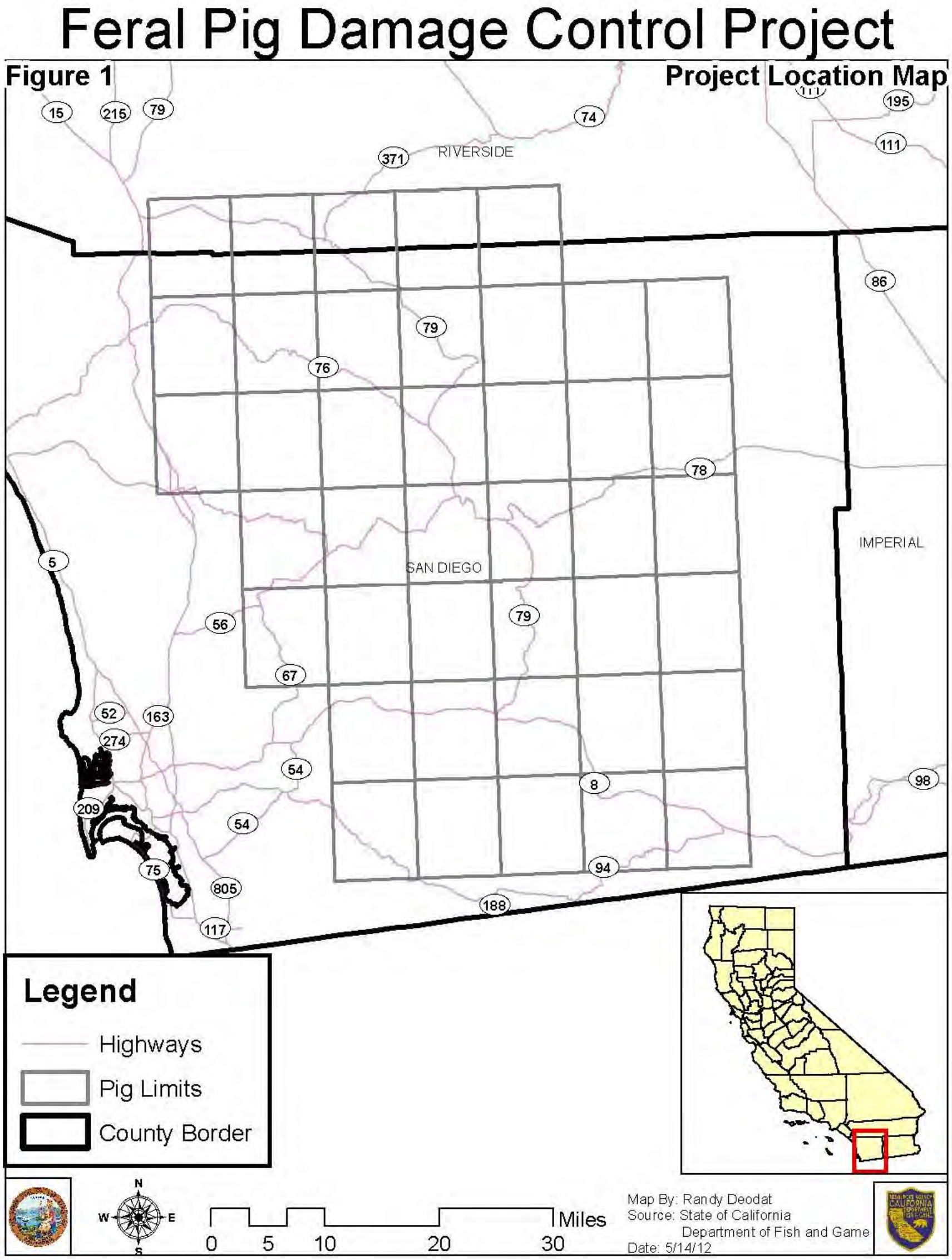


Figure 2. Vegetation Communities in the Vicinity of the Project, San Diego County

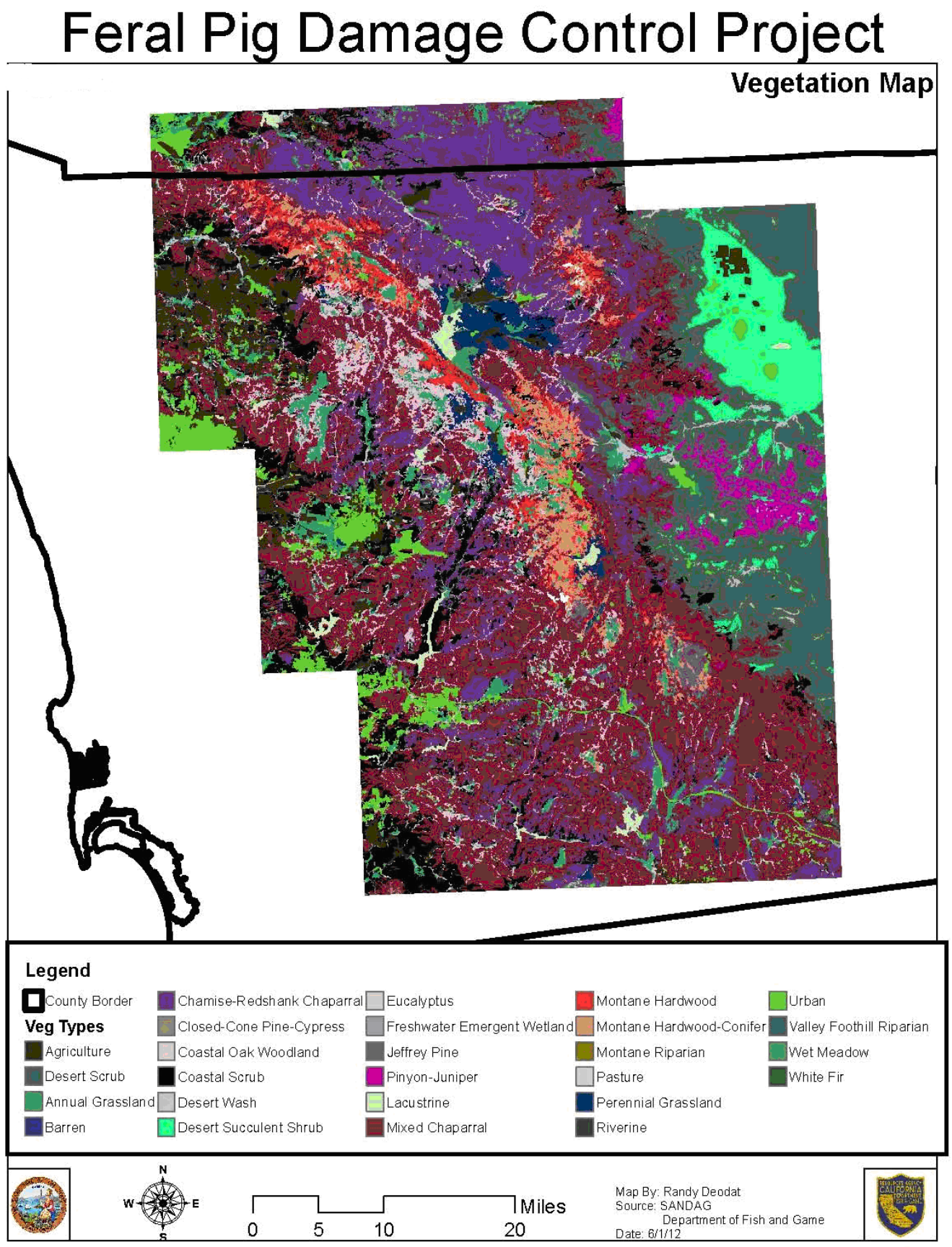


Figure 3. Hydrology in the Vicinity of the Project, San Diego County

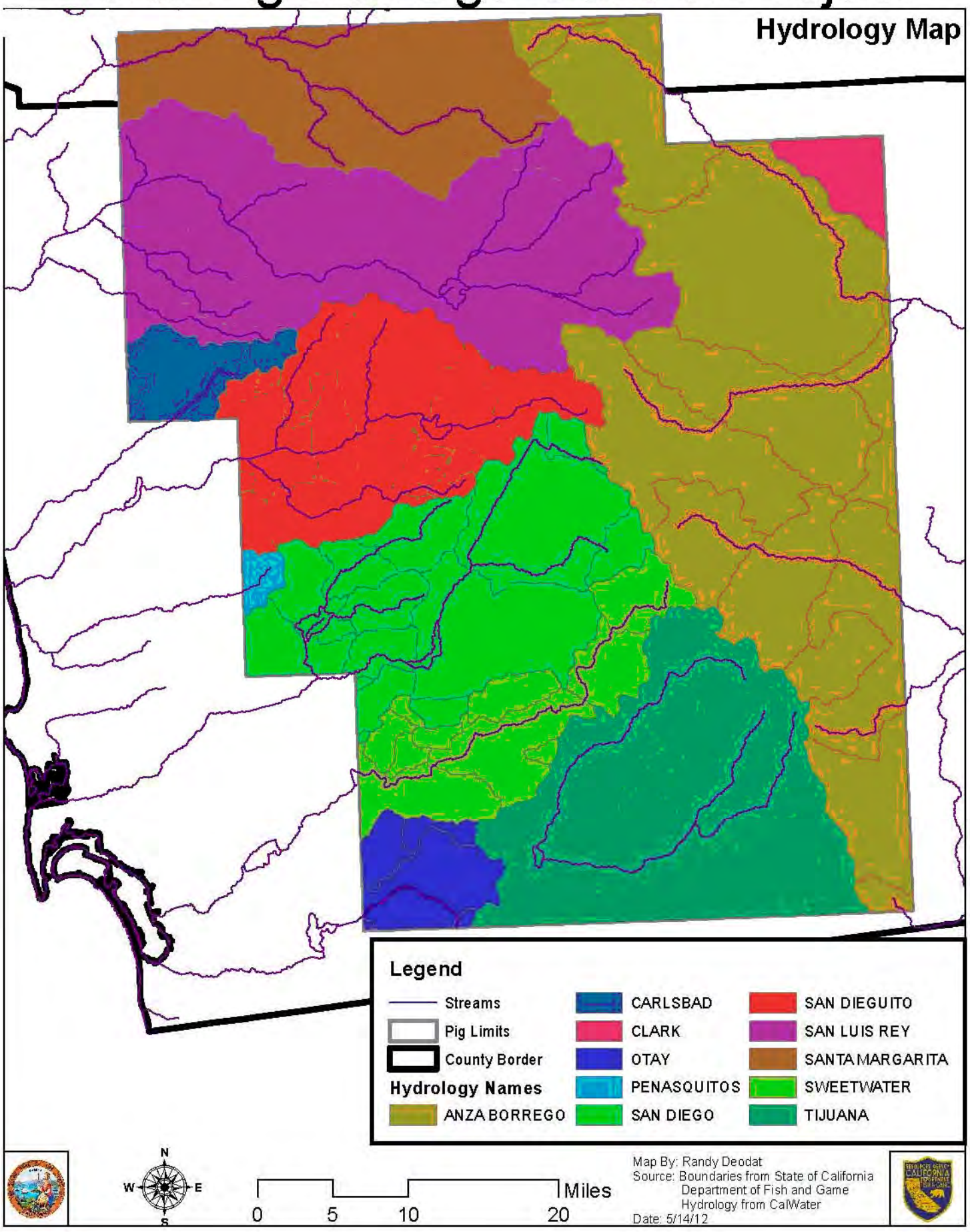
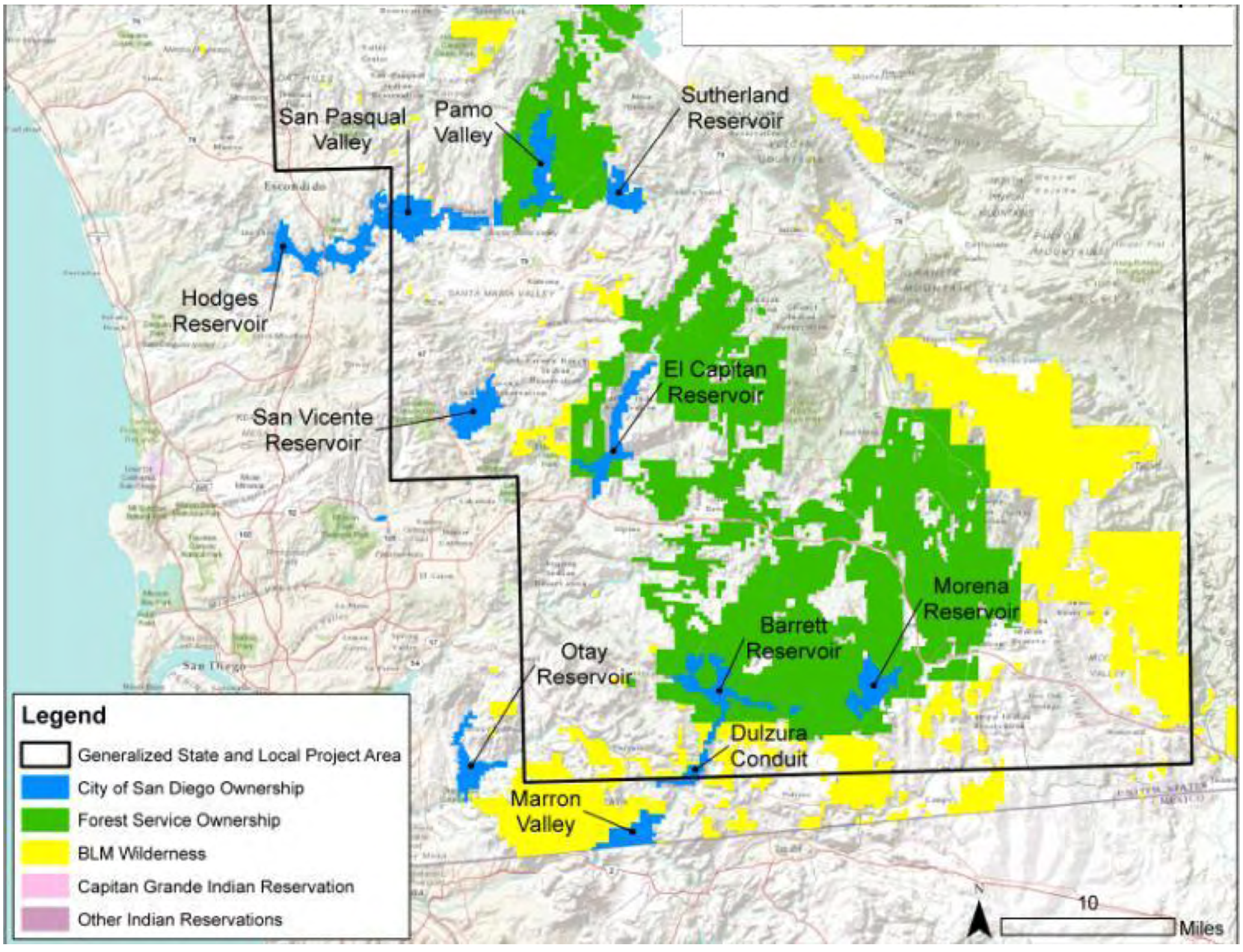


Figure 4. City of San Diego Property Ownership

(Public Utilities Department)



CNDDB and CNPS Records Search

Table 1. Sensitive Plant Species List.

List of special-status plant species and vegetation communities and their status identified in the Agua Caliente Springs, Aguanga, Alpine, Barrett Lake, Beauty Mountain, Borrego Palm Canyon, Borrego Sink, Boucher Hill, Bucksnort Mtn, Cameron Corners, Clark Lake, Cuyamaca Peak, Descanso, Dulzura, Earthquake Valley, El Cajon Mtn., Hot Springs Mtn., Julian, Live Oak Springs, Mesa Grande, Monument Peak, Morena Reservoir, Mount Laguna, Pala, Palomar Observatory, Pechanga, Ramona, Ranchita, Rodriguez Mtn., San Pasqual, San Vicente Reservoir, Santa Ysabel, Sombrero Peak, Tubb Canyon, Tule Springs, Vail Lake, Valley Center, Viejas Mountain, Warner Springs, Warners Ranch, Whale Peak USGS 7.5-Minute Quadrangles from the CDFW CNDDB Rarefind Database and the CNPS.

Scientific Name	Common Name	Federal Status	State Status	CNPS Status	General Habitat	Micro Habitat
Abronia villosa var. *aurita*	chaparral sand-verbena			1B.1	Chaparral, coastal scrub	Sandy areas. 80-1600m.
Acanthomintha ilicifolia	San Diego thorn-mint	FT	SE	1B.1	Chaparral, coastal scrub, valley and foothill grassland, vernal pools.	Endemic to active vertisol clay soils of mesas & valleys. Usually on clay lenses w/in grassland or chap communities. 10-935m.
Acmispon haydonii	pygmy lotus			1B.3	Sonoran desert scrub, pinyon-juniper woodland.	Creosote bush scrub to pinyon-juniper woodland; rocky sites. 600-1200m.
Ambrosia monogyra	singlewhorl burrobrush			2.2	Chaparral, Sonoran desert scrub.	Sandy soils. 10-500m.
Ambrosia pumila	San Diego ambrosia	FE		1B.1	Chaparral, coastal scrub, valley and foothill grassland.	Sandy loam or clay soil. In valleys; persists where disturbance has been superficial. Sometimes on margins or near vernal pools.
Arctostaphylos otayensis	Otay manzanita			1B.2	Chaparral, cismontane woodland.	Metavolcanic soils with other chaparral associates. 275-1700m.
Arctostaphylos rainbowensis	Rainbow manzanita			1B.1	Chaparral. Previously called *A. peninsularis* or considered a hybrid between *A. glandulosa* & *A. glauca*.	Usually found in gabbro chaparral in Riverside and San Diego counties. 270-790m.
Astragalus deanei	Dean's milk-vetch			1B.1	Chaparral, coastal scrub, riparian forest.	Open, brushy south facing slopes in Diegan coastal sage, sometimes on recently burned-over hillsides. 75-670m.
Astragalus douglasii var. *perstrictus*	Jacumba milk-vetch			1B.2	Chaparral, cismontane woodland, valley and foothill grassland.	Stony hillsides and gravelly or sandy flats in open oak woodland. 900-1370m.
Astragalus insularis var. *harwoodii*	Harwood's milk-vetch			2.2	Desert dunes.	Open sandy flats and sandy or stony desert washes; mostly in creosote bush scrub. -50-500m.
Astragalus magdalenae var. *peirsonii*	Peirson's milk-vetch	FT	SE	1B.2	Desert dunes.	Slopes and hollows in mobile dunes, usually to the lee of the prevailing winds. 60-225 m.
Astragalus oocarpus	San Diego milk-vetch			1B.2	Chaparral, cismontane woodland, meadows.	Openings in chaparral or on gravelly flats and slopes in thin oak woodland. 305-1500m.
Astragalus pachypus var. *jaegeri*	Jaeger's milk-vetch			1B.1	Coastal scrub, chaparral, valley and foothill grassland, cismontane woodland.	Dry ridges and valleys and open sandy slopes; often in grassland and oak-chaparral. 365-915m.
Astragalus sabulonum	gravel milk-vetch			2.2	Desert dunes, Mojavean desert scrub, Sonoran desert scrub.	Sandy or gravelly flats, washes, and roadsides. -60-930 m.
Atriplex coulteri	Coulter's saltbush			1B.2	Coastal bluff scrub, coastal dunes, coastal scrub, valley and foothill grassland.	Ocean bluffs, ridgetops, as well as alkaline low places. 10-440m.
Atriplex parishii	Parish's brittlescale			1B.1	Alkali meadows, vernal pools, chenopod scrub, playas.	Usually on drying alkali flats with fine soils. 4-140m.
Ayenia compacta	California ayenia			2.3	Mojavean desert scrub, Sonoran desert scrub.	Sandy and gravelly washes in the desert; dry desert canyons. 150-1095m.
Baccharis vanessae	Encinitas baccharis	FT	SE	1B.1	Chaparral.	On sandstone soils in steep, open, rocky areas with chaparral associates. 60-720m.

Berberis nevinii	Nevin's barberry	FE	SE	1B.1	Chaparral, cismontane woodland, coastal scrub, riparian scrub.	On steep, north-facing slopes or in low grade sandy washes. 290-1575m.
Bloomeria clevelandii	San Diego goldenstar			1B.1	Chaparral, coastal scrub, valley and foothill grassland, vernal pools.	Mesa grasslands, scrub edges; clay soils. Often on mounds between vernal pools in fine, sandy loam. 50-1090m.
Boechera hirshbergiae	Hirshberg's rockcress			1B.2	Pebble (or pavement) plains.	1400m.
Brodiaea orcuttii	Orcutt's brodiaea			1B.1	Vernal pools, valley and foothill grassland, closed-cone coniferous forest, cismontane woodland, chaparral, meadows.	Mesic, clay habitats; sometimes serpentine; usually in vernal pools and small drainages. 30-1615m.
Bursera microphylla	little-leaf elephant tree			2.3	Sonoran desert scrub.	Hillsides and washes and on canyon sides in California; rocky sites. 200-700m.
California macrophylla	round-leaved filaree			1B.1	Cismontane woodland, valley and foothill grassland.	Clay soils. 15-1200m.
Calliandra eriophylla	pink fairy-duster			2.3	Sonoran desert scrub.	Sandy or rocky sites in the desert. 120-1500m.
Callophrys thornei	Thorne's hairstreak				Associated with the endemic Tecate cypress (*Cupressus forbesii*).	Only known from vicinity of Otay Mountain.
Calochortus dunnii	Dunn's mariposa-lily		RARE	1B.2	Closed-cone coniferous forest, chaparral.	On gabbro or metavolcanic soils; also known from sandstone; often assoc with chaparral. 375-1830m.
Calochortus weedii var. *intermedius*	intermediate mariposa-lily			1B.2	Coastal scrub, chaparral, valley and foothill grassland.	Dry, rocky open slopes and rock outcrops. 120-850m.
Calyptridium arizonicum	Arizona pussypaws			2.1	Sonoran desert scrub.	Metamorphics. In washes. 610-790 m.
Carlowrightia arizonica	Arizona carlowrightia			2.2	Sonoran desert scrub.	Sandy, granitic alluvium, associated with palm oasis in California. 285-350m.
Ceanothus cyaneus	Lakeside ceanothus			1B.2	Closed-cone coniferous forest, chaparral.	100-1515m.
Ceanothus ophiochilus	Vail Lake ceanothus	FT	SE	1B.1	Chaparral.	Gabbro seams on north-facing ridges on the eastern sides of mountains. 620-825m.
Ceanothus verrucosus	wart-stemmed ceanothus			2.2	Chaparral.	1-380m.
Centromadia parryi ssp. *australis*	southern tarplant			1B.1	Marshes and swamps (margins), valley and foothill grassland.	Often in disturbed sites near the coast at marsh edges; also in alkaline soils sometimes with saltgrass. Sometimes on v
Centromadia pungens ssp. *laevis*	smooth tarplant			1B.1	Valley and foothill grassland, chenopod scrub, meadows, playas, riparian woodland.	Alkali meadow, alkali scrub; also in disturbed places. 0-480m.
Chaenactis carphoclinia var. *peirsonii*	Peirson's pincushion			1B.3	Sonoran desert scrub.	Open rocky or sandy sites. 3-80m.
Chaenactis glabriuscula var. *orcuttiana*	Orcutt's pincushion			1B.1	Coastal bluff scrub, coastal dunes.	Sandy sites. 3-100m.
Chaenactis parishii	Parish's chaenactis			1B.3	Chaparral.	Rocky sites. 1300-2500m.
Chamaesyce abramsiana	Abrams' spurge			2.2	Mojavean desert scrub, Sonoran desert scrub.	Sandy sites. -5-915m.
Chamaesyce arizonica	Arizona spurge			2.3	Sonoran desert scrub.	Sandy soils. 50-300m.
Chamaesyce platysperma	flat-seeded spurge			1B.2	Sonoran desert scrub, desert dunes.	Sandy places or shifting dunes. Possibly a waif in California; more common in Arizona and Mexico. 60-950m.
Chloropyron maritimum ssp. *Maritimum*	salt marsh bird's-beak	FE	SE	1B.2	Coastal salt marsh, coastal dunes.	Limited to the higher zones of the salt marsh habitat. 0-30m.
Chorizanthe parryi var. parryi	Parry's spineflower			1B.1	Coastal scrub, chaparral.	Dry slopes and flats; sometimes at interface of 2 vegetation types, such as chap and oak woodland; dry, sandy soils. 40-1705m.
Chorizanthe polygonoides var. longispina	long-spined spineflower			1B.2	Chaparral, coastal scrub, meadows, valley and foothill grassland.	Gabbroic clay. 30-1450m.

Chorizanthe xanti var. *leucotheca*	white-bracted spineflower			1B.2	Mojavean desert scrub, pinyon-juniper woodland, coastal scrub (alluvial fans).	Sandy or gravelly places. 300-1200m.
Clarkia delicata	delicate clarkia			1B.2	Cismontane woodland, chaparral.	235-1000m.
Comarostaphylis diversifolia ssp. *Diversifolia*	summer holly			1B.2	Chaparral.	Often in mixed chaparral in California, sometimes post-burn. 30-550m.
Cryptantha ganderi	Gander's cryptantha			1B.1	Sonoran desert scrub, desert dunes.	On dunes and in washes. 170-400m.
Cylindropuntia fosbergii	pink cholla			1B.3	Sonoran desert scrub.	415-610m.
Deinandra floribunda	Tecate tarplant			1B.2	Chaparral, coastal scrub.	Often in little drainages or disturbed areas. 70-1220m.
Deinandra mohavensis	Mojave tarplant		SE	1B.3	Riparian scrub, chaparral.	Low sand bars in riverbed; mostly in riparian areas or in ephemeral grassy areas. 850-1600m.
Delphinium hesperium ssp. *cuyamacae*	Cuyamaca larkspur		RARE	1B.2	Lower montane coniferous forest, meadows.	On dried edge of grassy meadows, also described as in mesic sites. 1210-1630m.
Dieteria asteroides var. *lagunensis*	Mount Laguna aster		RARE	2.1	Cismontane woodland, lower montane coniferous forest.	Openings in woodland or forest. 800-2400m.
Digitaria californica	Arizona cottontop			2.3	Sonoran desert scrub, Mojavean desert scrub.	Rocky schist hillsides in California; open plains out of state. 290-1490m.
Dodecahema leptoceras	slender-horned spineflower	FE	SE	1B.1	Chaparral, coastal scrub (alluvial fan sage scrub).	Flood deposited terraces and washes; assoc include *Encelia*, *Dalea*, *Lepidospartum*, etc. 200-760m.
Downingia concolor var. *brevior*	Cuyamaca Lake downingia		SE	1B.1	Meadows (mesic), vernal pools.	In vernal seeps, lakes and pools, and on mudflats, with *Orthocarpus*, *Limnanthes*, *Collinsia*. 1400-1500m.
Dudleya multicaulis	many-stemmed dudleya			1B.2	Chaparral, coastal scrub, valley and foothill grassland.	In heavy, often clayey soils or grassy slopes. 0-790m.
Dudleya variegata	variegated dudleya			1B.2	Chaparral, coastal scrub, cismontane woodland, valley and foothill grassland.	In rocky or clay soils; sometimes associated with vernal pool margins. 3-550m.
Eriastrum harwoodii	Harwood's eriastrum			1B.2	Desert dunes.	200-915m.
Ericameria cuneata var. *macrocephala*	Laguna Mountains goldenbush			1B.3	Chaparral.	Endemic to the Laguna Mountains. Among boulders; in crevices in granitic outcrops and in rocky soil. 1185-1850m.
Ericameria palmeri var. *palmeri*	Palmer's goldenbush			1B.1	Coastal scrub, chaparral.	On granitic soils, on steep hillsides. Mesic sites. 30-600m.
Eriogonum evanidum	vanishing wild buckwheat			1B.1	Chaparral, lower montane coniferous forest, pinyon and juniper woodland.	Sandy sites. 970-2200m.
Ferocactus viridescens	San Diego barrel cactus			2.1	Chaparral, Diegan coastal scrub, valley and foothill grassland.	Often on exposed, level or south-sloping areas; often in coastal scrub near crest of slopes. 3-485m.
Fraxinus parryi	chaparral ash			2.2	Chaparral.	Open mixed chaparral and in the chaparral-sage scrub interface in California. 213-620m.
Fremontodendron mexicanum	Mexican flannelbush	FE	RARE	1B.1	Closed-cone coniferous forest, chaparral, cismontane woodland.	Usually scattered along the borders of creeks or in dry canyons; sometimes on gabbro soils. 10-490m.
Galium angustifolium ssp. *borregoense*	Borrego bedstraw		RARE	1B.3	Sonoran desert scrub.	Steep walls and (usually n) slopes in rocky watersheds or canyons. 350-1100m.
Galium angustifolium ssp. *jacinticum*	San Jacinto Mountains bedstraw			1B.3	Lower montane coniferous forest.	Open mixed forest. 1630-1940m.
Geraea viscida	sticky geraea			2.3	Chaparral.	Loamy coarse sand to gravelly sand soils; often in post burned areas and in bulldozed areas. 450-1700m.
Gilia mexicana	El Paso gilia			2.3	Pinyon and juniper woodland.	Alluvial soil in washes, on bajadas, hillsides, arroyos, and plains. 1475 m.
Grindelia hallii	San Diego gumplant			1B.2	Meadows, valley and foothill grassland, chaparral, lower montane coniferous forest.	Frequently occurs in low moist areas in meadows; assoc species commonly including *Wyethia*, *Ranunculus*, *Sidalcea*. 180-1660m.

Herissantia crispa	curly herissantia			2.3	Sonoran desert scrub.	700-725m.
Hesperocyparis forbesii	Tecate cypress			1B.1	Closed-cone coniferous forest, chaparral.	Primarily on north-facing slopes; groves often associated with chaparral. 250-1500m.
Hesperocyparis stephensonii	Cuyamaca cypress			1B.1	Closed-cone coniferous forest, chaparral, riparian forest.	Restricted to the southwest slopes of Cuyamaca Peak, on gabbroic rock. 1030-1420m.
Heuchera brevistaminea	Laguna Mountains alumroot			1B.3	Broadleaved upland forest, chaparral, cismontane woodland, riparian forest.	Steep, rocky slopes. 1360-2000m.
Heuchera rubescens var. *versicolor*	San Diego County alumroot			2.3	Chaparral, lower montane coniferous forest.	Rocky outcrops. 1500-4000m.
Horkelia cuneata ssp. *puberula*	mesa horkelia			1B.1	Chaparral, cismontane woodland, coastal scrub.	Sandy or gravelly sites. 70-810m.
Horkelia truncata	Ramona horkelia			1B.3	Chaparral, cismontane woodland.	Habitats in California include mixed chaparral, vernal streams, and disturbed areas near roads. Clay soil. 400-1300m.
Hulsea californica	San Diego hulsea			1B.3	Lower montane coniferous forest, upper montane coniferous forest, and chaparral.	Coarse to fine sandy loam in disturbed chaparral openings at high elevations. 1000-2915m.
Hulsea mexicana	Mexican hulsea			2.3	Chaparral.	Volcanic soils or burns and disturbed sites. 665-1200m.
Isocoma menziesii var. *decumbens*	decumbent goldenbush			1B.2	Coastal scrub.	Sandy soils; often in disturbed sites. 10-910m.
Iva hayesiana	San Diego marsh-elder			2.2	Marshes and swamps, playas.	River washes. 10-500m.
Juncus luciensis	Santa Lucia dwarf rush			1B.2	Vernal pools, meadows, lower montane coniferous forest, chaparral, great basin scrub.	Vernal pools, ephemeral drainages, wet meadow habitats and streamsides. 300-2040m.
Lasthenia glabrata ssp. *coulteri*	Coulter's goldfields			1B.1	Coastal salt marshes, playas, valley and foothill grassland, vernal pools.	Usually found on alkaline soils in playas, sinks, and grasslands. 1-1400m.
Lepechinia cardiophylla	heart-leaved pitcher sage			1B.2	Closed-cone coniferous forest, chaparral, cismontane woodland.	550-1370m.
Lepechinia ganderi	Gander's pitcher sage			1B.3	Closed-cone coniferous forest, chaparral, coastal scrub, valley and foothill grassland.	Usu. Found in chaparral or coastal scrub; sometimes in Tecate cypress woodland. Gabbro or metavolcanic substrate. 300-1000m.
Lepidium flavum var. *felipense*	Borrego Valley pepper-grass			1B.2	Sonoran desert scrub, pinyon-juniper woodland.	Sandy, clay, or silty soils. 450-840m.
Lepidium virginicum var. robinsonii	Robinson's pepper-grass			1B.2	Chaparral, coastal scrub.	Dry soils, shrubland. 1-945m.
Leptosiphon floribundus ssp. *hallii*	Santa Rosa Mountains leptosiphon			1B.3	Sonoran desert scrub.	Desert canyons. 900-1275m.
Lessingia glandulifera var. *tomentosa*	Warner Springs lessingia			1B.3	Chaparral.	Along roadsides, sandy soil, in high desert chaparral. 860-1220m.
Lewisia brachycalyx	short-sepaled lewisia			2.2	Lower montane coniferous forest, meadows.	Dry to moist meadows in rich loam. 1400-2300m.
Lilium parryi	lemon lily			1B.2	Lower montane coniferous forest, meadows and seeps, riparian forest, upper montane coniferous forest.	Wet, mountainous terrain; generally in forested areas; on shady edges of streams, in open boggy meadows & seeps. 1300-2790m.
Limnanthes gracilis ssp. *parishii*	Parish's meadowfoam		SE	1B.2	Meadows and seeps, vernal pools.	Vernally moist areas and temporary seeps of highland meadows and plateaus; often bordering lakes and streams. 600-1760m.
Linanthus bellus	desert beauty			2.3	Chaparral.	Dry slopes and flats; open sandy spots in chaparral, mostly in loamy coarse sandy dg soil types. 920-1400m.
Linanthus orcuttii	Orcutt's linanthus			1B.3	Chaparral, lower montane coniferous forest.	Sometimes in disturbed areas; often in gravelly clearings. 1060-2000m.
Lupinus excubitus var. *medius*	Mountain Springs bush lupine			1B.3	Pinyon and juniper woodland, Sonoran desert scrub.	Dry, sandy, gently sloping canyon washes, sandy soil pockets, and flats in steeper slopes and drainages. 425-1370m.

Matelea parvifolia	spear-leaf matelea			2.3	Mojavean desert scrub, Sonoran desert scrub.	Dry rocky ledges and slopes. 440-1095m.
Mentzelia hirsutissima	hairy stickleaf			2.3	Sonoran desert scrub.	Washes, fans, slopes; coarse rubble and talus slopes; rocky sites. -5-800m.
Monardella hypoleuca ssp. *lanata*	felt-leaved monardella			1B.2	Chaparral, cismontane woodland.	Occurs in understory in mixed chaparral, chamise chaparral, and southern oak woodland; sandy soil. 300-1575m.
Monardella macrantha ssp. *hallii*	Hall's monardella			1B.3	Broadleaved upland forest, chaparral, lower montane coniferous forest, cismontane woodland, valley & foothill grassland.	Dry slopes and ridges in openings within the above communities. 695-2195m.
Monardella nana ssp. leptosiphon	San Felipe monardella			1B.2	Chaparral, lower montane coniferous forest.	Sometimes in openings and fuel breaks or in the understory of forest or chaparral. 1200-1855m.
Monardella viminea	willowy monardella	FE	SE	1B.1	Coastal scrub/alluvial ephemeral washes with adjacent coastal scrub, chaparral, or sycamore woodland.	In canyons, in rocky and sandy places, sometimes in washes or floodplains; with *Baccharis*, *Iva*, etc. 50-225m.
Muhlenbergia appressa	appressed muhly			2.2	Coastal sage scrub, Mojavean desert scrub, valley and foothill grassland. Possibly under collected in California.	Rocky slopes, canyon bottoms. 20-1600m.
Nama stenocarpum	mud nama			2.2	Marshes and swamps.	Lakeshores, riverbanks, intermittently wet areas. 5-500m.
Navarretia fossalis	spreading navarretia	FT		1B.1	Vernal pools, chenopod scrub, marshes and swamps, playas.	San Diego hardpan & San Diego claypan vernal pools; in swales & vernal pools, often surrounded by other habitat types. 30-1300m.
Navarretia peninsularis	Baja navarretia			1B.2	Lower montane coniferous forest, chaparral.	Wet areas in open forest. 1500-2425m.
Nolina cismontane	chaparral nolina			1B.2	Chaparral, coastal scrub.	Primarily on sandstone and shale substrates; also known from gabbro. 140-1275m.
Nolina interrata	Dehesa nolina		SE	1B.1	Chaparral.	Typically on rocky hillsides or ravines on ultramafic soils (gabbro or metavolcanic). 180-855m.
Orcuttia californica	California Orcutt grass	FE	SE	1B.1	Vernal pools.	15-660m.
Packera ganderi	Gander's ragwort		RARE	1B.2	Chaparral.	Recently burned sites and gabbro outcrops. 400-1200m.
Penstemon californicus	California beardtongue			1B.2	Chaparral, lower montane coniferous forest, pinyon-juniper woodland.	Stony slopes and shrubby openings; sandy or granitic soils. 1160-2300m.
Phacelia keckii	Santiago Peak phacelia			1B.3	Closed-cone coniferous forest, chaparral.	Open areas, sometimes along creeks. 545-1600m.
Pholistoma auritum var. *arizonicum*	Arizona pholistoma			2.3	Mojavean desert scrub.	The one site in California. Is assoc. With *Larrea*, *Acacia*, *Hyptis*, *Cercidium*, etc. 300-700m.
Poa atropurpurea	San Bernardino blue grass	FE		1B.2	Meadows and seeps.	Mesic meadows of open pine forests and grassy slopes, loamy alluvial to sandy loam soil. 1350-2455m.
Pseudognaphalium leucocephalum	white rabbit-tobacco			2.2	Riparian woodland, cismontane woodland, coastal scrub, chaparral.	Sandy, gravelly sites. 0-2100m.
Quercus dumosa	Nuttall's scrub oak			1B.1	Closed-cone coniferous forest, chaparral, coastal scrub. More common scrub oak now = q. *Berberidifolia*.	Generally on sandy soils near the coast; sometimes on clay loam. 15-400m.
Rhus trilobata var. *simplicifolia*	single-leaved skunkbrush			2.3	Pinyon-juniper woodland.	1220-1370m.
Ribes canthariforme	Moreno currant			1B.3	Chaparral.	Among boulders in oak-manzanita thickets; shaded or partially shaded sites. 340-1200m.
Rubus glaucifolius var. *ganderi*	Cuyamaca raspberry			1B.3	Lower montane coniferous forest.	Open, moist forest; gabbro soils. 1200-1730m.
Salvia munzii	Munz's sage			2.2	Coastal scrub, chaparral.	Rolling hills and slopes, in rocky soil. 120-1090m.
Satureja chandleri	San Miguel savory			1B.2	Chaparral, cismontane woodland, coastal scrub, rip woodland, valley and foothill grassland.	Rocky, gabbroic or metavolcanic substrate. 120-1005m.

Scutellaria bolanderi ssp. austromontana	southern mountains skullcap			1B.2	Chaparral, cismontane woodland, lower montane coniferous forest.	In gravelly soils on stream banks or in mesic sites in oak or pine woodland. 425-2000m.
Selaginella eremophila	desert spike-moss			2.2	Sonoran desert scrub.	Shaded sites, gravelly soils; crevices or among rocks. 300-2425m.
Senna covesii	Cove's cassia			2.2	Sonoran desert scrub.	Dry, sandy desert washes, slopes. 200-1070m.
Sibaropsis hammittii	Hammitt's clay-cress			1B.2	Valley and foothill grassland, chaparral.	Mesic microsites in open areas on clay soils in *Stipa* grassland. Often surrounded by *Adenostema* chaparral. 730-1065m.
Sidalcea neomexicana	Salt Spring checkerbloom			2.2	Alkali playas, brackish marshes, chaparral, coastal scrub, lower montane coniferous forest, Mojavean desert scrub.	Alkali springs and marshes. 0-1500m.
Spermolepis echinata	bristly scaleseed			2.3	Sonoran desert scrub.	Sandy or rocky sites. 60-1500m.
Sphenopholis obtusata	prairie wedge grass			2.2	Cismontane woodland, meadows and seeps.	Open moist sites, along rivers and springs, alkaline desert seeps. 360-2325m.
Stemodia durantifolia	purple stemodia			2.1	Sonoran desert scrub.	Sandy soils; mesic sites. 180-300m.
Streptanthus campestris	southern jewel-flower			1B.3	Chaparral, lower montane coniferous forest, pinyon-juniper woodland.	Open, rocky areas. 600-2790m.
Symphyotrichum defoliatum	San Bernardino aster			1B.2	Meadows and seeps, marshes and swamps, coastal scrub, cismontane woodland, lower montane coniferous forest, grassland.	Vernally mesic grassland or near ditches, streams and springs; disturbed areas. 2-2040m.
Tetracoccus dioicus	Parry's tetracoccus			1B.2	Chaparral, coastal scrub.	Stony, decomposed gabbro soil. 150-1000m.
Thermopsis californica var. *semota*	velvety false lupine			1B.2	Lower montane coniferous forest, meadows and seeps, cismontane woodland, valley and foothill grassland.	Pine forests and meadow edges, on rocky slopes and outcrops, and along roadsides. 1030-1870m.
Thysanocarpus rigidus	rigid fringepod			1B.2	Pinyon and juniper woodland.	Dry, rocky slopes and ridges of oak and pine woodland in arid mountain ranges. 600-2200 m.
Triquetrella californica	coastal triquetrella			1B.2	Coastal bluff scrub, coastal scrub valley and foothill grasslands.	Grows within 30m from the coast in coastal scrub, grasslands and in open gravels on roadsides, hillsides, rocky slopes,
Wislizenia refracta ssp. *palmeri*	Palmer's jackass clover			2.2	Chenopod scrub, Sonoran desert scrub, Sonoran thorn woodland, desert dunes, desert wash.	Known from desert basins, dunes, washes and benches of sand field ecotones where upland desert scrubs, typically creosote
Xylorhiza orcuttii	Orcutt's woody-aster			1B.2	Sonoran desert scrub.	Arid canyons; often in washes. 265-365m.
Desert Fan Palm Oasis Woodland	Desert Fan Palm Oasis Woodland					
Sonoran Cottonwood Willow Riparian Forest	Sonoran Cottonwood Willow Riparian Forest					
Southern Coast Live Oak Riparian Forest	Southern Coast Live Oak Riparian Forest					
Southern Interior Cypress Forest	Southern Interior Cypress Forest					
Southern Sycamore Alder Riparian Woodland	Southern Sycamore Alder Riparian Woodland					
Southern Willow Scrub	Southern Willow Scrub					
Riversidian Alluvial Fan Sage Scrub	Riversidian Alluvial Fan Sage Scrub					
Mesquite Bosque	Mesquite Bosque					
Mojave Mixed Steppe	Mojave Mixed Steppe					
Mojave Riparian Forest	Mojave Riparian Forest					

Code	Definition
FE	Listed as endangered under the Federal Endangered Species Act.
FT	Listed as threatened under the federal Endangered Species Act.
SE	Listed as endangered under the California Endangered Species Act.
ST	Listed as threatened under the California Endangered Species Act.
Rare	Listed as rare by the California Department of Fish and Wildlife.
1B.1	CNPS List 1B: Rare, threatened, or endangered in California and elsewhere: Seriously threatened in California (high degree/immediacy of threat)
1B.2	CNPS List 1B: Rare, threatened, or endangered in California and elsewhere: Fairly threatened in California (moderate degree/immediacy of threat).
1B.3	CNPS List 1B: Rare, threatened, or endangered in California and elsewhere: Fairly threatened in California (low degree/immediacy of threat).
2.1	CNPS List 2: rare, threatened, or endangered in California, but more common elsewhere: Fairly threatened in California (high degree/immediacy of threat).
2.2	CNPS List 2: rare, threatened, or endangered in California, but more common elsewhere: Fairly threatened in California (moderate degree/immediacy of threat).
2.3	CNPS List 2: rare, threatened, or endangered in California, but more common elsewhere: Fairly threatened in California (low degree/immediacy of threat).

Table 2. Sensitive Wildlife Species List.

List of special-status wildlife species and their status identified in the Agua Caliente Springs, Aguanga, Alpine, Barrett Lake, Beauty Mountain, Borrego Palm Canyon, Borrego Sink, Boucher Hill, Bucksnort Mtn, Cameron Corners, Clark Lake, Cuyamaca Peak, Descanso, Dulzura, Earthquake Valley, El Cajon Mtn., Hot Springs Mtn., Julian, Live Oak Springs, Mesa Grande, Monument Peak, Morena Reservoir, Mount Laguna, Pala, Palomar Observatory, Pechanga, Ramona, Ranchita, Rodriguez Mtn., San Pasqual, San Vicente Reservoir, Santa Ysabel, Sombrero Peak, Tubb Canyon, Tule Springs, Vail Lake, Valley Center, Viejas Mountain, Warner Springs, Warners Ranch, Whale Peak USGS 7.5-minute quadrangles from the CDFW CNDDB Rarefind Database.

SCIENTIFIC NAME	COMMON NAME	FEDERAL STATUS	STATE STATUS	CDFW STATUS	CNPS STATUS	GENERAL HABITAT	MICRO HABITAT
Accipiter cooperii	Cooper's hawk					Woodland, chiefly of open, interrupted or marginal type.	Nest sites mainly in riparian growths of deciduous trees, as in canyon bottoms on river flood-plains; also, live oaks.
Agelaius tricolor	Tricolored blackbird			SSC		Highly colonial species, most numerous in Central Valley and vicinity. Largely endemic to California.	Requires open water, protected nesting substrate, and foraging area with insect prey within a few km of the colony.
Aimophila ruficeps canescens	Southern California rufous-crowned sparrow					Resident in southern California coastal sage scrub and sparse mixed chaparral.	Frequents relatively steep, often rocky hillsides with grass and forb patches.
Ammodramus savannarum	Grasshopper sparrow			SSC		Dense grasslands on rolling hills, lowland plains, in valleys and on hillsides on lower mountain slopes.	Favors native grasslands with a mix of grasses, forbs and scattered shrubs. Loosely colonial when nesting.
Amphispiza belli belli	Bell's sage sparrow					Nests in chaparral dominated by fairly dense stands of chamise. Found in coastal sage scrub in south of range.	Nest located on the ground beneath a shrub or in a shrub 6-18 inches above ground. Territories about 50 yards apart.
Aquila chrysaetos	Golden eagle					Rolling foothills, mountain areas, sage-juniper flats, and desert.	Cliff-walled canyons provide nesting habitat in most parts of range; also, large trees in open areas.
Asio otus	Long-eared owl			SSC		Riparian bottomlands grown to tall willows and cottonwoods; also, belts of live oak paralleling stream courses.	Require adjacent open land productive of mice and the presence of old nests of crows, hawks, or magpies for breeding.
Athene cunicularia	Burrowing owl			SSC		Open, dry annual or perennial grasslands, deserts and scrublands characterized by low-growing vegetation.	Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.
Buteo regalis	Ferruginous hawk					Open grasslands, sagebrush flats, desert scrub, low foothills and fringes of pinyon-juniper habitats.	Eats mostly lagomorphs, ground squirrels, and mice. Population trends may follow lagomorph population cycles.
Campylorhynchus brunneicapillus sandiegensis	Coastal cactus wren			SSC		Southern California coastal sage scrub.	Wrens require tall opuntia cactus for nesting and roosting.
Circus cyaneus	Northern harrier			SSC		Coastal salt and fresh-water marsh. Nest and forage in grasslands, from salt grass in desert sink to mountain cienagas.	Nests on ground in shrubby vegetation, usually at marsh edge; nest built of a large mound of sticks in wet areas.
Dendroica petechia brewsteri	Yellow warbler			SSC		Riparian plant associations. Prefers willows, cottonwoods, aspens, sycamores, and alders for nesting and foraging.	Also nests in montane shrubbery in open conifer forests.
Elanus leucurus	White-tailed kite					Rolling foothills and valley margins with scattered oaks and river bottomlands or marshes next to deciduous woodland.	Open grasslands, meadows, or marshes for foraging close to isolated, dense-topped trees for nesting and perching.
Empidonax traillii extimus	Southwestern willow flycatcher	FE	SE			Riparian woodlands in southern California.	
Eremophila alpestris actia	California horned lark					Coastal regions, chiefly from Sonoma County To San Diego County. Also main part of San Joaquin Valley and	Short-grass prairie, "bald" hills, mountain meadows, open coastal plains, fallow grain fields,

						east to foothills.	alkali flats.
Falco mexicanus	Prairie falcon					Inhabits dry, open terrain, either level or hilly.	Breeding sites located on cliffs. Forages far afield, even to marshlands and ocean shores.
Haliaeetus leucocephalus	Bald eagle	Delisted	SE			Ocean shore, lake margins, & rivers for both nesting & wintering. Most nests within 1 mile of water.	Nests in large, old-growth, or dominant live tree w/open branches, especially ponderosa pine. Roosts communally in winter
Icteria virens	Yellow-breasted chat			SSC		Summer resident; inhabits riparian thickets of willow and other brushy tangles near watercourses.	Nests in low, dense riparian, consisting of willow, blackberry, wild grape; forages and nests within 10 ft of ground.
Lanius ludovicianus	Loggerhead shrike			SSC		Broken woodlands, savannah, pinyon-juniper, Joshua tree, and riparian woodlands, desert oases, scrub and washes.	Prefers open country for hunting, with perches for scanning, and fairly dense shrubs and brush for nesting.
Piranga rubra	Summer tanager			SSC		Summer resident of desert riparian along lower Colorado River, and locally elsewhere in California deserts.	Requires cottonwood-willow riparian for nesting and foraging; prefers older, dense stands along streams.
Plegadis chihi	White-faced ibis					Shallow fresh-water marsh.	Dense tule thickets for nesting interspersed with areas of shallow water for foraging.
Polioptila californica californica	Coastal California gnatcatcher	FT		SSC		Obligate, permanent resident of coastal sage scrub below 2500 ft in southern California.	Low, coastal sage scrub in arid washes, on mesas and slopes. Not all areas classified as coastal sage scrub are occupied.
Progne subis	Purple martin			SSC		Inhabits woodlands, low elevation coniferous forest of Douglas fir, ponderosa pine, and Monterey pine.	Nests in old woodpecker cavities mostly, also in human-made structures. Nest often located in tall, isolated tree/snag.
Vireo bellii pusillus	Least Bell's vireo	FE	SE			Summer resident of southern California in low riparian in vicinity of water or in dry river bottoms; below 2000 ft.	Nests placed along margins of bushes or on twigs projecting into pathways, usually willow, baccharis, and mesquite.
Actinemys marmorata pallida	Aouthwestern pond turtle			SSC		Inhabits permanent or nearly permanent bodies of water in many habitat types; below 6000 ft elev.	Require basking sites such as partially submerged logs, vegetation mats, or open mud banks. Need suitable nesting sites.
Anaxyrus californicus	Arroyo toad	FE		SSC		Semi-arid regions near washes or intermittent streams, including valley-foothill and desert riparian, desert wash, etc.	Rivers with sandy banks, willows, cottonwoods, and sycamores; loose, gravelly areas of streams in drier parts of range.
Anniella pulchra pulchra	Silvery legless lizard			SSC		Sandy or loose loamy soils under sparse vegetation.	Soil moisture is essential. They prefer soils with high moisture content.
Aspidoscelis hyperythra	Orange-throated whiptail			SSC		Inhabits low-elevation coastal scrub, chaparral, and valley-foothill hardwood habitats.	Prefers washes and other sandy areas with patches of brush and rocks. Perennial plants necessary for its major food-termites
Aspidoscelis tigris stejnegeri	Coastal western whiptail					Found in deserts and semiarid areas with sparse vegetation and open areas. Also, found in woodland and riparian areas.	Ground may be firm soil, sandy, or rocky.
Charina trivirgata	Rosy boa					Desert and chaparral from the coast to the Mojave and Colorado Deserts. Prefers moderate to dense vegetation and rocky cover.	Habitats with a mix of brushy cover and rocky soil such as coastal canyons and hillsides, desert canyons, washes and mountains
Coleonyx switaki	Barefoot banded gecko					Found only in areas of massive rock and rock outcrops at the heads of canyons.	Occurs in rock cracks and crevices
Crotalus ruber ruber	Northern red-diamond rattlesnake			SSC		Chaparral, woodland, grassland, and desert areas from coastal San Diego County to the eastern slopes of the	Occurs in rocky areas and dense vegetation. Needs rodent burrows, cracks in rocks or surface

						mountains.	cover objects.
Ensatina klauberi	Large-blotched salamander			SSC		Found in conifer and woodland associations.	Found in leaf litter, decaying logs and shrubs in heavily forested areas.
Eumeces skiltonianus interparietalis	Coronado skink			SSC		Grassland, chaparral, pinyon-juniper and juniper sage woodland, pine-oak and pine forests in coast ranges of southern California	Prefers early success ional stages or open areas. Found in rocky areas close to streams and on dry hillsides.
Lampropeltis zonata (pulchra)	California mountain kingsnake (San Diego population)			SSC		Restricted to the San Gabriel and San Jacinto Mountains of southern California.	Inhabits a variety of habitats, including valley-foothill hardwood, coniferous, chaparral, riparian, and wet meadows.
Phrynosoma coronatum (blainvillii population)	Coast (San Diego) horned lizard			SSC		Inhabits coastal sage scrub and chaparral in arid and semi-arid climate conditions.	Prefers friable, rocky, or shallow sandy soils.
Phrynosoma mcallii	Flat-tailed horned lizard			SSC		Restricted to desert washes and desert flats in central Riverside, eastern San Diego, and Imperial Counties.	Critical habitat element is fine sand, into which lizards burrow to avoid temperature extremes; require vegetation cover and ants.
Plestiodon skiltonianus interparietalis	Coronado Island skink	h			SC	Grassland, chaparral, pinon-juniper & juniper sage woodland, pine-oak & pine forests in coast ranges of southern California.	Prefers early successional stages or open areas. Found in rocky areas close to streams & on dry hillsides.
Rana draytonii	California red-legged frog	FT		SSC		Lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation.	Requires 11-20 weeks of permanent water for larval development. Must have access to estivation habitat.
Rana muscosa	Sierra Madre yellow-legged frog	FE		SSC		Federal listing refers to populations in the San Gabriel, San Jacinto and San Bernardino Mountains only.	Always encountered within a few feet of water. Tadpoles may require 2 - 4 yrs to complete their aquatic development.
Salvadora hexalepis virgultea	Coast patch-nosed snake			SSC		Brushy or shrubby vegetation in coastal southern California.	Require small mammal burrows for refuge and overwintering sites.
Spea hammondii	Western spadefoot			SSC		Occurs primarily in grassland habitats, but can be found in valley-foothill hardwood woodlands.	Vernal pools are essential for breeding and egg laying.
Taricha torosa torosa	Coast Range newt			SSC		Coastal drainages from Mendocino County to San Diego County.	Lives in terrestrial habitats and will migrate over 1 km to breed in ponds, reservoirs and slow moving streams.
Thamnophis hammondii	Two-striped garter snake			SSC		Coastal California from vicinity of Salinas to northwest Baja California. From sea to about 7,000 ft elevation.	Highly aquatic, found in or near permanent fresh water. Often along streams with rocky beds and riparian growth.
Thamnophis sirtalis ssp.	South coast garter snake	H			SC	Southern California coastal plain from Ventura County To San Diego County., and from sea level to about 850 m.	Marsh & upland habitats near permanent water with good strips of riparian vegetation.
Antrozous pallidus	Pallid bat			SSC		Deserts, grasslands, shrublands, woodlands and forests. Most common in open, dry habitats with rocky areas for roosting.	Roosts must protect bats from high temperatures. Very sensitive to disturbance of roosting sites.
Chaetodipus californicus femoralis	Dulzura pocket mouse			SSC		Variety of habitats including coastal scrub, chaparral and grassland in San Diego County	Attracted to grass-chaparral edges.
Chaetodipus fallax fallax	Northwestern San Diego pocket mouse			SSC		Coastal scrub, chaparral, grasslands, sagebrush, etc. In western San Diego County	Sandy, herbaceous areas, usually in association with rocks or coarse gravel.
Chaetodipus fallax pallidus	Pallid San Diego pocket mouse			SSC		Desert border areas in eastern San Diego County In desert wash, desert scrub, desert succulent scrub, pinyon-juniper, etc.	Sandy herbaceous areas, usually in association with rocks or coarse gravel.
Corynorhinus townsendii	Townsend's big-eared bat			SSC		Throughout California in a wide variety of habitats. Most common in mesic sites.	Roosts in the open, hanging from walls and ceilings. Roosting sites limiting. Extremely sensitive to human disturbance.

Dipodomys merriami collinus	Merriam's kangaroo rat					Known only from San Diego and Riverside County Associated with Riversidean sage scrub, chaparral, and non-native grassland.	Need sandy loam substrates for digging of burrows.
Dipodomys stephensi	Stephens' kangaroo rat	FE	ST			Primarily annual and perennial grasslands, but also occurs in coastal scrub and sagebrush with sparse canopy cover.	Prefers buckwheat, chamise, brome grass and filaree. Will burrow into firm soil.
Eumops perotis californicus	Western mastiff bat			SSC		Many open, semi-arid to arid habitats, including conifer and deciduous woodlands, coastal scrub, grasslands, chaparral etc	Roosts in crevices in cliff faces, high buildings, trees and tunnels.
Lasionycteris noctivagans	Silver-haired bat					Primarily a coastal and montane forest dweller feeding over streams, ponds and open brushy areas.	Roosts in hollow trees, beneath exfoliating bark, abandoned woodpecker holes and rarely under rocks. Needs drinking water.
Lasiurus blossevillii	Western red bat			SSC		Roosts primarily in trees, 2-40 ft above ground, from sea level up through mixed conifer forests.	Prefers habitat edges and mosaics with trees that are protected from above and open below with open areas for foraging.
Lasiurus cinereus	Hoary bat					Prefers open habitats or habitat mosaics, with access to trees for cover and open areas or habitat edges for feeding.	Roosts in dense foliage of medium to large trees. Feeds primarily on moths. Requires water.
Lasiurus xanthinus	Western yellow bat					Found in valley foothill riparian, desert riparian, desert wash, and palm oasis habitats.	Roosts in trees, particularly palms. Forages over water and among trees.
Lepus californicus bennettii	San Diego black-tailed jackrabbit			SSC		Intermediate canopy stages of shrub habitats and open shrub / herbaceous and tree / herbaceous edges.	Coastal sage scrub habitats in southern California.
Myotis ciliolabrum	Western small-footed myotis					Wide range of habitats mostly arid wooded and brushy uplands near water. Seeks cover in caves, buildings, mines and crevices	Prefers open stands in forests and woodlands. Requires drinking water. Feeds on a wide variety of small flying insects.
Myotis thysanodes	Fringed myotis					In a wide variety of habitats, optimal habitats are pinyon-juniper, valley foothill hardwood and hardwood-conifer.	Uses caves, mines, buildings or crevices for maternity colonies and roosts.
Myotis volans	Long-legged myotis	m				Most common in woodland & forest habitats above 4000 ft. Trees are important day roosts; caves & mines are night roosts.	Nursery colonies usually under bark or in hollow trees, but occasionally in crevices or buildings.
Myotis yumanensis	Yuma myotis	m				Optimal habitats are open forests and woodlands with sources of water over which to feed.	Distribution is closely tied to bodies of water. Maternity colonies in caves, mines, buildings or crevices.
Neotoma albigula venusta	Colorado Valley woodrat					Low-lying desert areas in southeastern California. Closely associated with beaver-tail cactus and mesquite.	Intolerant of cold temperatures. Eats mainly succulent plants. Distribution influenced by abundance of nest building material
Neotoma lepida intermedia	San Diego desert woodrat			SSC		Coastal scrub of southern California from San Diego County to San Luis Obispo County.	Moderate to dense canopies preferred. They are particularly abundant in rock outcrops and rocky cliffs and slopes.
Nyctinomops femorosaccus	Pocketed free-tailed bat			SSC		Variety of arid areas in southern California; pine-juniper woodlands, desert scrub, palm oasis, desert wash, desert riparian.	Rocky areas with high cliffs.
Nyctinomops macrotis	Big free-tailed bat			SSC		Low-lying arid areas in southern California.	Need high cliffs or rocky outcrops for roosting sites. Feeds principally on large moths.
Onychomys torridus ramona	Southern grasshopper mouse			SSC		Desert areas, especially scrub habitats with friable soils for digging. Prefers low to moderate shrub cover.	Feeds almost exclusively on arthropods, especially scorpions and orthopteran insects.
Ovis canadensis nelsoni DPS	Peninsular bighorn sheep	FE	ST			Open desert slopes below 4,000 ft elevation from San Gorgonio pass south into Mexico.	Optimal habitat includes steep walled canyons and ridges bisected by rocky or sandy washes, with available water.
Perognathus longimembris	Los Angeles pocket mouse			SSC		Lower elevation grasslands and coastal sage communities	Open ground with fine sandy soils. May not dig extensive burrows, hiding under weeds and dead

brevinasus						in and around the Los Angeles basin.	leaves instead.
Perognathus longimembris internationalis	Jacumba pocket mouse			SSC		Desert riparian, desert scrub, desert wash, coastal scrub and sagebrush.	Rarely found on rocky sites, uses all canopy coverage's.
Taxidea taxus	American badger			SSC		Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils.	Need sufficient food, friable soils and open, uncultivated ground. Prey on burrowing rodents. Dig burrows.
Cyprinodon macularius	Desert pupfish	FE	SE			Desert ponds, springs, marshes and streams in southern California.	Can live in salinities from fresh water to 68 ppt, can withstand temps from 9 - 45 c and dissolved oxygen levels down to 0
Gasterosteus aculeatus williamsoni	Unarmored threespine stickleback	FE	SE			Weedy pools, backwaters, and among emergent vegetation at the stream edge in small southern California streams.	Cool (<24 c), clear water with abundant vegetation.
Gila bicolor mohavensis	Mohave tui chub	FE	SE			Endemic to the Mojave River basin, adapted to alkaline, mineralized waters.	Needs deep pools, ponds, or slough-like areas. Needs vegetation for spawning.
Gila orcuttii	Arroyo chub			SSC		Los Angeles basin south coastal streams.	Slow water stream sections with mud or sand bottoms. Feeds heavily on aquatic vegetation and associated invertebrates.
Anomala carlsoni	Carlson's dune beetle					Known primarily from creosote scrub in vicinity of Algodones Dunes, Imperial County Also taken from Borrego, San Diego County	Host preferences unknown.
Branchinecta sandiegonensis	San Diego fairy shrimp	FE				Endemic to San Diego and Orange County mesas.	Vernal pools.
Streptocephalus woottoni	Riverside fairy shrimp					Endemic to western Riverside, Orange, and San Diego Counties in areas of tectonic swales/earth slump basins in grassland and coastal sage scrub.	Inhabit seasonally astatic pools filled by winter/spring rains. Hatch in warm water later in the season.
Euphydryas editha quino	qQino checkerspot butterfly	FE				Sunny openings within chaparral and coastal sage shrublands in parts of Riverside and San Diego Counties.	Hills and mesas near the coast. Need high densities of food plants P*lantago erecta*, *P. insularis, Orthocarpus* purpurescens
Euproserpinus euterpe	Kern primrose sphinx moth	FT				Found in the walker basin; Kern County, and several other scattered locations (Carrizo plain, Pinnacles NM).	Host plant is C*amissonia contorta epilobioides* (evening primrose).
Lycaena hermes	Hermes copper butterfly					Found in southern mixed chaparral and coastal sage scrub at western edge of Laguna mountains.	Host plant is R*hamnus crocea*. Although *R. crocea* is widespread throughout the coast range, Lycaena hermes is not.
Pyrgus ruralis Lagunae	Laguna Mountains skipper	FE				Only in a few open meadows in yellow pine forest between 5,000 and 6,000 ft. In the vicinity of Mount Laguna and Palomar Mountain.	Eggs laid on leaves of H*orkelia bolanderi clevelandi*. Larvae feed on leaves and overwinter on the host plant.
Minymischa ventura	Ventura cuckoo wasp						
Parnopes Borregoensis	Borrego parnopes cuckoo wasp						
Halictus harmonius	Haromonius halictid bee					Known only from the foothills of the San Bernardino Mountains., possibly also the San Jacinto Mountains.	

Code	Definition
FE	Listed as endangered under the federal Endangered Species Act.
FT	Listed as threatened under the federal Endangered Species Act.
SSC	Species of special concern in California.
SE	Listed as endangered under the California Endangered Species Act.
ST	Listed as threatened under the California Endangered Species Act.

Appendix: TYPES OF TRAPS

The following information was approved for use from Mississippi State University. Wildlife Pig Info: Feral Hog Control and Management. http://www.wildpiginfo.msstate.edu.

Types of Traps

Trap efficiency is important, so keep in mind that catch size is a limiting factor with certain types of traps. Factors to consider when selecting the type of pig trap that will best meet your needs are

- sounder size
- affordability
- weight and portability
- presence and numbers of nontarget species such as deer or black bear

BOX TRAPS

Pros of Using a Box Trap

Box traps are simple to construct and less expensive than commercial traps made of steel. Also, because they are collapsible they require less space for transport and storage.

Cons of Using a Box Trap

Catch size per trapping effort is limited to a small number of pigs. The wooden panels of the box trap present a more confining appearance than wire panel traps, and they require more long-term maintenance. Also, the 8-foot side panels are heavy and can be difficult for one person to handle alone.

View plans for a box trap

Materials

Box traps are rectangular or square structures made of wood fence panels constructed from 2-by-4-inch and 1-by-4-inch or 1-by-6-inch boards.

Design

The most common box trap design is 4 feet wide, 8 feet long, and 5 feet high with no fixed top or bottom. (A top is not necessary because the 5-foot-high side panels prevent pigs from climbing out).

Trap Doors

The trap is usually equipped with a single-catch wooden drop door, but it also can be equipped with a multicatch trap door, such as the saloon-style door. Box traps are heavy enough that pigs usually are unable to root under the sides and use their head to lift the trap and escape. However, it is still best to secure box traps by driving a steel T-post into the ground at each corner and fastening the trap sides to the T-posts with wire.

The box trap can be transported in panels and assembled on location using 3-inch exterior decking screws (nails are not recommended). A trip wire or root stick is the best trigger mechanism to use with box traps.

CAGE TRAPS

Pros of Using a Cage Trap

Cage traps may have an advantage over wooden box traps because the wire panel construction is thought to present a more open and less confining appearance to wild pigs. Also, the trap designs usually allow for easy one-person transport and setup.

Cons of Using a Cage Trap

Catch size per trapping effort is limited to a small numbers of pigs. Traps with overhead panels are reason for concern because they can prevent the escape or release of nontarget species such as deer and black bear.

View plans for a cage trap

Materials

Cage traps are constructed from heavy-gauge wire livestock panels welded to a steel angle iron or square tubing frame.

Designs

The most common cage trap design is a rectangular enclosure ranging in size from 4 feet high, 6 feet long, and 4 feet wide to 5 feet high, 12 feet long, and 4 feet wide.

A more recent design is a circular cage trap with wire livestock panels welded to a round steel frame (similar to livestock hay rings). The advantage of this design is its portability; it can be rolled onto a trailer or rolled along the ground.

Another design is similar to the box trap and is made up of wire livestock panels welded to individual steel frames and fastened together with pins or bolts.

Panels and Doors

Commercially available cage traps often have both a top (overhead) and bottom (floor) panel and are equipped with a spring-loaded, single-catch or multicatch trap door at one end of the cage.

Cage traps less than 5 feet tall should include a top panel to prevent pigs from escaping over the sides. Bottom or floor panels are not necessary for well-built cage traps. In fact, many experienced pig trappers recommend not using floor panels. Their reasoning is that most pigs do not like the feel of the wire panel underfoot and will balk at fully entering the trap.

To prevent large pigs caught in this type of trap from lifting the trap and escaping underneath the side panels, wire the trap to T-posts driven into the ground at each corner.

Error!

Cage Trap

Round Cage Trap

Wild Pig in Cage Trap

CORRAL TRAPS

Pros of Using a Corral Trap

Corral size can be easily adjusted by adding or taking away livestock panels, allowing the trap to be enlarged for larger sounders. The open top allows for the escape of nontarget species, and the trap's larger size combined with the open appearance of the livestock panels may appear less threatening to trap-shy pigs.

Cons of Using a Corral Trap

Corral traps require more setup time than box and cage traps. The 16-foot livestock panels may need to be cut in half for transport, thus requiring more assembly time and effort, and tree roots in wooded habitats sometime pose a problem for driving and pulling T-posts. A T-post "puller" is a wise investment.

View plans for a corral trap

Corral traps are the most effective type of trap for catching large groups of pigs. Though corral traps can vary in shape, many experienced pig trappers recommend a circular trap because it prevents captured pigs from piling into corners and escaping over the top.

Materials

Corral traps can be constructed using heavy-gauge wire or U-bolts to fasten 16-foot by 5-foot welded wire livestock panels to 6½-foot steel T-posts. Corral traps are quick and easy to build, and just three or four 16-foot by 5-foot panels will produce a trap of sufficient size for catching most sounder groups. You can easily expand the trap's size by adding more livestock panels.

How To Build It

To build a circular corral trap, begin by overlapping the livestock panel ends 1 foot and securing the adjoining ends using 5/8-inch cable clamps or heavy-gauge wire. Be sure to leave two panel ends free to accommodate the trap door. (Either a single-catch or multicatch trap door can be used.) Next, shape the corral by pushing or pulling the joined panels in or out as you work them into a circle. Once the corral is fashioned to your liking, set the trap door in place and drive T-posts into the ground immediately next to and on each side of the trap door. Attach the loose panel ends securely to both the trap door frame and T-posts with heavy-gauge wire.

Trap Door

If using a trap door that does not extend to a height of 5 feet, you will need to account for the height difference to prevent pigs from jumping over the trap door. There are two ways to do this:

1. If the trap door is positioned between the ends of two livestock panels as described above, use a piece of livestock panel or other heavy-duty mesh wire to cover the opening above the trap door.
2. Simply cut an opening for the trap door in the middle of one of the 16-foot livestock panels. Be sure to install T-posts on each side of the trap door for additional support and use heavy-gauge wire to attach the door to the livestock panel and T-posts. This will prevent wild pigs from jumping over the trap door.

Appendix B: Comments and Responses

The Initial Study/Mitigated Negative Declaration for the Feral Pig Eradication and Control Project was provided a 30-day public review period beginning June 5, 2013 and ending July 8, 2013 in accordance with CEQA Guidelines §15087. The following comments were received during the comment period with responses following each.

Commenters

1. Native American Heritage Commission
2. California Department of Fish & Wildlife
3. County of San Diego Department of Parks and Recreation
4. California Department of Transportation
5. Jack Bransford
6. Joseph Nunez
7. San Diego County Wildlife Federation
8. Human Society of the United States

STATE OF CALIFORNIA Edmund G. Brown, Jr., *Governor*

NATIVE AMERICAN HERITAGE COMMISSION
1550 Harbor Boulevard
West Sacramento, CA 95691
(916) 373-3715
(916) 373-5471 – FAX
e-mail: ds_nahc@pacbell.net

RECEIVED
JUN 20 2013
BY:----------

June 14, 2013

Mr. Luke Serna, Project Planner

California Department of Parks & Recreation
2797 Truxton Road
San Diego, CA 92106

RE: SCH# 2013061008 CEQA Notice of Completion; proposed Mitigated Negative Declaration for the **Feral Pig Eradication and Control Project;** located County-wide; San Diego County, California.

Dear Mr. Serna:

The Native American Heritage Commission (NAHC) has reviewed the CEQA Notice regarding the above referenced project. In the 1985 Appellate Court decision (170 Cal App 3rd 604), the court held that the NAHC has jurisdiction and special expertise, as a state agency, over affected Native American resources impacted by proposed projects, including archaeological places of religious significance to Native Americans, and to Native American burial sites.

The California Environmental Quality Act (CEQA) states that any project that causes a substantial adverse change in the significance of an historical resource, which includes archeological resources, is a significant effect requiring the preparation of an EIR (CEQA guidelines 15064(b)). To adequately comply with this provision and mitigate project-related impacts on archaeological resources, the Commission recommends the following actions be required:

1-1 Contact the appropriate Information Center for a record search to determine :If a part or all of the area of project effect (APE) has been previously surveyed for cultural places(s), The NAHC recommends that known traditional cultural resources recorded on or adjacent to the APE be listed in the draft Environmental Impact Report (DEIR).

If an additional archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey. We suggest that this be coordinated with the NAHC, if possible. The final report containing site forms, site significance, and mitigation measurers should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum, and not be made available for pubic disclosure pursuant to California Government Code Section 6254.10.
Contact has been made to the Native American Heritage Commission for :a Sacred Lands File Check. A list of appropriate Native American Contacts for consultation concerning the project site has been provided and is attached to this letter to determine if the proposed active might impinge on any cultural resources. Lack of surface evidence of archeological resources does not preclude their subsurface existence.

1-2 Lead agencies should include in their mitigation plan provisions for the identification and evaluation of accidentally discovered archeological resources, per California Environmental Quality Act (CEQA) §15064.5(f). In areas of identified archaeological

1-3 sensitivity, a certified archaeologist and a culturally affiliated Native American, with knowledge in cultural resources, should monitor all ground-disturbing activities.

1-4 Lead agencies should include in their mitigation plan provisions for the disposition of recovered artifacts, in consultation with culturally affiliated Native Americans.

1-5 Lead agencies should include provisions for discovery of Native American human remains in their mitigation plan. Health and Safety Code §7050.5, CEQA §15064.5(e), and Public Resources Code §5097.98 mandates the process to be followed in the event of an accidental discovery of any human remains in a location other than a dedicated cemetery.

Sincerely,

Dave Singleton
Program Analyst
(916) 653-6251

CC: State Clearinghouse

Attachment: Native American Contacts list

1. Native American Heritage Commission (NAHC)

1-1: See Section 2.5.2a (Project Description, Removal of Feral Pigs – Trapping), (pp. 8-9):

Traps would not be set so as to cause resource damage within areas of sensitive biological, cultural, or watershed resources… All proposed trapping locations would be flagged on the ground and GPS locations provided to CDPR District GIS and archaeological staff... Using GIS location data for proposed trapping locations, District Archaeologists would complete records review and field survey if necessary to ensure that trapping location is not located within cultural resource site.

1-2: See Section 3.5 (Cultural Resources, Mitigation Measures – CR2), (p. 33):

In the event that previously undocumented cultural resources… are encountered during the proposed project by anyone, all work will temporarily halt at that specific location. An Archaeologist will record and evaluate the find and work with the agency or governmental representative to implement avoidance, preservation, or recovery measures as appropriate and in accordance with the Secretary of the Interior's Standards and Guidelines for archaeological resource protection, prior to any work resuming at that specific location.

1-3: See Section 3.5 (Cultural Resources, Mitigation Measures – CR1), (p. 32):

An associated agency or governmental archaeologist will monitor all ground disturbing phases of the proposed project treatment sites… Monitoring will include all ground preparation work required for construction of corrals/traps. A request for a Native American monitor may be made prior to project work.

1-4: See Comment 1-2

1-5: See Section 3.5 (Cultural Resources, Mitigation Measures – CR3), (p. 33):

In the unlikely event that human remains are discovered, work will cease immediately in the area of the find and the project manager/site supervisor will notify the appropriate agency or governmental personnel. The authorized representative will notify the County Coroner in accordance with §7050.5 of the California Health and Safety Code. If the coroner determines the remains represent Native American internment, the Native American Heritage Commission in Sacramento will be consulted to identify the most likely descendant/s and appropriate disposition of the remains. Work will not resume in the area of the find until proper disposition is complete (PRC §5097.98).

State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
South Coast Region
3883 Ruffin Road
San Diego, CA 92123
(858) 467-4201
www.wildlife.ca.gov

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

July 3, 2013

Mr. Lucas Serna
California Department of Parks & Recreation
Southern Service Center
NTC at Liberty Station, Barracks 26
2797 Truxtun Rd.
San Diego, CA 92106

Subject: Comments on the Notice of Intent to Adopt a Mitigated Negative Declaration (MND) for the Feral Pig Eradication and Control Project, San Diego County, CA (SCH# 2013061008)

Dear Mr. Serna:

The California Department of Fish and Wildlife (Department) has reviewed the draft Mitigated Negative Declaration (MND) dated May 2013, for the Feral Pig Eradication and Control project. The comments provided herein are based on information provided in the MND, our knowledge of sensitive and declining vegetation communities in the County of San Diego, our knowledge of feral pigs in the county and our participation in various working groups and regional conservation planning efforts.

The Department is a Trustee and Responsible Agency pursuant to the California Environmental Quality Act (CEQA; §§ 15386 and 15281, respectively) and is responsible for ensuring appropriate conservation of the state's biological resources, including rare, threatened, and endangered plant and animal species, pursuant to the California Endangered Species Act (Fish and Game Code § 2050 et seq.) and other sections of the Fish and Game Code (1600 et seq.). The Department also administers the Natural Community Conservation Planning (NCCP) program. The Department also administers sport hunting regulations and manages game programs and game species, such as the feral pig.

Overall, the Department is supportive of this effort and appreciates the time and energy State Parks has put into the analysis and planning to embark on a program of such magnitude. We concur with your goal for full elimination of wild pig in San Diego County specifically because it has only been recently determined that wild pigs are increasing in number and effects on the environment. While it is unknown whether or not the goal is attainable, we support your efforts to attempt to control the situation for the benefit of local natural resources.

In 1957, the California legislature classified the wild (also known as feral) pig as a game mammal in the state of California. The Department is the agency with responsibility over game animals in the state and because this classification is in statute, only legislative action could change it. However, the California Fish and Game Commission has recognized that damage from wild pigs does occur and to that end, a policy has been put into effect that states:

> "The wild pig population of the state must be controlled to minimize the threat of increasing damage to California's native plant and animals, to agricultural operations and to park and

recreational activities from the foraging habits of the animals. Consistent with State law and regulations, the Department will prepare and recommend to the Commission regulations which enhance recreational hunting and facilitate the issuing of depredation permits and/or other legally available means to alleviate this problem". (*Amended 12/03/93*)

The Department has been working with State Parks, the Cleveland National Forest and other agencies and entities since 2010 on a unified strategy to deal with this increasing damage from wild pigs. The Department is prepared to facilitate any request from these agencies for authorization to implement its project.

The Project is located primarily in rural and unincorporated portions of eastern San Diego County with a small portion in southeastern Orange County. Feral pigs (*Sus scrofa*) are a non-native species known to occur in California and throughout the United States. Populations are the result of escaped domestic stock, introduced European wild boar, or a hybrid of both types and are considered an invasive species in California and the rest of the Americas. Feral pigs pose a serious threat to California's native ecosystems due to their omnivorous diets and because they forage by rooting, which physically disturbs soils and associated plants and animals. The project would consist of the approval and implementation of a Memorandum of Understanding for a systematic campaign, including funding sources, goals and strategies, to eradicate and control nonnative feral pig impacts in the Project area. Primary project implementation elements are provided below:

- Inventory feral pig populations and areas of resource damage.
- Removal of feral pigs using various methods including cage or corral traps, aerial search and dispatch and ground search and dispatch with the use of trained search dogs.
- Temporary fencing to restrict or funnel movement of feral pig populations.
- Monitoring.
- Adaptive management and re-treat as necessary.
- Screening of helicopter flight paths and landing areas.

We offer the following comments and recommendations to the assist the California Department of Parks and Recreation (CDPR) in avoiding, minimizing, and adequately mitigating project-related impacts to biological resources, and to ensure that the project is consistent with ongoing regional habitat conservation planning efforts.

2-1

- The proposed project is located primarily within the boundaries of San Diego County. Therefore, feral pig eradication and control tactics proposed within the unincorporated areas of San Diego County's Multiple Species Conservation Program (MSCP) boundaries will be required to comply with the appropriate MSCPs. Although the California Department of Parks and Recreation is not currently a signatory to the applicable MSCPs, we recommend that the final MND address any issues within the overall analysis of the project's consistency with regional conservation planning in the area. This includes the approved City of San Diego MSCP, the approved South County MSCP Subarea Plan, the draft North County MSCP Subarea Plan, and the draft East County MSCP Subarea Plan.

2-2 • In order to avoid impacts to nesting birds, especially golden eagles, the Project should limit the use of helicopters in applicable areas duringthe avian breeding season which generally runs from February 1 through September 1 (as early as January for some raptors). Page 9 (Section b Aerial dispatch with helicopters) and page 52 (Best Management Practices, Noise 2), should include this comment.

2-3 • Page 8, Section 2. Removal of Feral Pigs; the final MND should include a section that discusses the likely outcome if carcasses are not removed and are left in place in remote project areas that have the ability to foul drinking water sources, or have any negative effect on wildlife and plants.

2-4 • The appendix of the final MND should contain a listing of all mechanical equipment that will be needed along with a brief description of the decibels produced during operation if this machinery would pose a negative impact to nesting birds or other wildlife.

We appreciate the opportunity to comment on the draft MND for this project and to assist the CDPR in further minimizing and mitigating project impacts to biological resources. If you should have any questions or comments regarding this letter, please contact Bryand Duke (858) 637-5511 or via email at Bryand.Duke@wildlife.ca.gov.

Sincerely,

Edmund Pert
Regional Manager

cc: Scott Morgan (State Clearinghouse, Sacramento)
Terri Stewart, SCR, San Diego
Rich Burg, SCR, San Diego

2. California Department of Fish and Wildlife

2-1: Project activities would not conflict with the County of San Diego MSCP(s) or City of San Diego MSCP.

See Section 2.6 (Consistency with Local Plans and Policies), (p. 10):

The removal of exotic animals complies with regional habitat conservation plans and the City of San Diego's Multiple Species Conservation Program and Subarea Plan (MSCP). In addition, the proposed project activities would adhere to the City of San Diego's MSCP Multi-Habitat Planning Area (MHPA) and Land Use Adjacency Guidelines.

2-2: Any areas identified as sensitive bird nesting habitat would be avoided during the nesting season, generally defined by CDPR as February 15 through September 15.

Included in mitigating impact is BIO-3 indicating that no trapping or helicopter flights within 6,000 feet of known bald eagle or golden eagle nesting or wintering sites during the species' nesting or wintering seasons.

2-3: See Section 2.5.2a (Project Description), (p. 8):

After pigs are trapped, they would be dispatched quickly with lethal gunshots in a humane manner and the carcasses disposed of off-site in compliance with applicable regulations or left on-site if removal is not feasible.

See Section 2.5.2 (Project Description, Removal of Feral Pigs), (p. 8):

Animal carcasses are not considered hazardous waste by the US EPA. All disposal and transportation would be in accordance with applicable laws and regulations, including CCR 794.3. In remote locations, pig carcasses may be left in the project area to decompose.

See Section 5 Best Management Practices & Mitigation Measures related to Water Quality and Biological Resources for measures that will be implemented to avoid and/or minimize impacts to water resources and biological resources from the control of feral pigs.

2-4: Use of helicopters would be the major mechanical equipment with the noise level to have effect on nesting birds or other wildlife Use of them will take place outside the nesting bird season, thereby limiting effects to them due to noise. Wildlife may be disturbed by other hunting activities such as firearm discharge and barking of hunting dogs. These impacts are expected to be minor and transitory.

Section 2.5.6 (p. 10): Helicopter Flight Paths and Landing Areas:

Helicopter flight paths and landing areas would be screened for effects on threatened, endangered, and sensitive species to avoid negative impacts to those resources. Monitoring of nest locations for golden and bald eagles would occur annually. This information would be used to establish operating buffers and seasonal use restrictions for helicopters around active nest sites. Helicopter landing areas would be located in existing openings in vegetation and in previously disturbed locations. No improved landing areas would be constructed.

Mitigation Measure BIO-3 would minimize impact to known bald eagle or golden eagle nesting or wintering sites.

County of San Diego

DEPARTMENT OF PARKS AND RECREATION

BRIAN ALBRIGHT
DIRECTOR

Administrative Office: (858) 694-3030
Fax: (858) 495-5841
Reservations: (858) 565-3600

www.sdparks.org

July 8, 2013

Lucas Serna
California Department of Parks and Recreation
Southern Service Center
NTC at Liberty Station, Barracks 26
2797 Truxtun Road
San Diego, CA 92106
enviro@parks.ca.gov

Dear Ms. Serna:

The County of San Diego has reviewed the Draft Initial Study (IS) and the Mitigated Negative Declaration (MND) for the Feral Pig Eradication and Control Project (project) prepared by the California Department of Parks and Recreation.

The project consists of the approval and implementation of a Memorandum of Understanding (MOU) between California Department of Fish and Wildlife (CDFW), California Department of Parks and Recreation (CDPR), the County of San Diego, the City of San Diego, the Vista Irrigation District and Helix Water District for a 5-year integrated feral pig eradication and control approach. This project identifies six elements to eradicate and control feral pigs which include:

1. Inventory feral pig populations and areas of resource damage.
2. Removal of feral pigs using various methods including cage or corral traps, aerial search and dispatch and ground search and dispatch with the use of trained search dogs.
3. Temporary fencing to restrict or funnel movement of feral pig populations.
4. Monitoring.
5. Adaptive management and re-treat as necessary.
6. Screening of helicopter flight paths and landing areas.

These proposed elements are described in detail and mitigation measures are proposed. The County have reviewed the potential impacts and associated mitigation measures and they seem to be appropriate and adequate.

Although no feral pigs have been seen on any County park or preserve, two County land ownerships—Santa Ysabel West and William Heise Park—are included within close proximity to areas in which feral pigs have been sighted. In addition, 12 County owned or managed open space preserves and parks are within the project boundaries including Santa Ysabel East, Santa Ysabel West, Volcan Mountain, Simon Park, Mt. Gower (managed for BLM); William Heise Park, Barnett Ranch, Boulder Oaks, Oakoasis, Stelzer, El Monte and El Capitan (managed for BLM).

3-1 The County participants will have an opportunity to participate in the creation of the MOU, which was not explained in detail in the MND, and should be further developed and outlined for and by responsible parties who may ultimately sign onto the MOU. For the County of San Diego the Board of Supervisors would have the authority to enter into an MOU on behalf of the County of San Diego. Significant policy decisions will have to be addressed during this process. These decisions would be focused on the potential implementation of elements 2, 3 and 6 from the list above. The IS/MND acknowledges there may be temporary closure of trails. Other options include scheduling management activities when Preserves are closed to the public (after sunset).

3-2 In addition, funding will need to be addressed to accomplish the goals of the project. The County does contracts with the USDA, Animal and Plant Health Inspection Services (APHIS) through their Wildlife Service's section to do animal control work for unincorporated County residents and this current service and contribution should be recognized.

Sincerely,

for BRIAN ALBRIGHT
Director

cc: Eric Lardy, LUEG; Adam Wilson, District 2; Ha Dang, AWM; Sandy Parks, AWM; Mark Wardlaw, PDS

3. County of San Diego Department of Parks and Recreation

3-1: CDPR shall continue to maintain contact with the County of San Diego Department of Parks and Recreation regarding the efforts that are being made to control feral pig populations that may exist within County Parks. An MOU prepared for cooperation between CDPR and County Parks and Recreation shall emphasize elements of the Plan including elements 2, 3 and 6 to ensure their appropriate implementation based on the Park resources that the County manages. CDPR shall consider activities when County preserves are closed to minimize impact.

3-2: CDPR appreciates the animal control work currently being completed by County Parks and Recreation. That work along with the Feral Pig Control will better preserve the sensitive natural and cultural resources that invasive species in general threaten to harm.

DEPARTMENT OF TRANSPORTATION
DISTRICT 11, DIVISION OF PLANNING
4050 TAYLOR ST, M.S. 240
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July 1, 2013

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PM Various
Feral Pig Eradication and Control Project
MND / SCH #2013061008

Mr. Luke Serna
California Department of Parks and Recreation
Southern Service Center
NTC at Liberty Station, Barracks 26
2797 Truxtun Road
San Diego, CA 92106

Dear Mr. Serna:

The California Department of Transportation (Caltrans) appreciates the opportunity to review the Mitigated Negative Declaration (MND) for the proposed Feral Pig Eradication and Control Project (SCH #2013061008). Caltrans has the following comments:

The MND, Section 3.16 Transportation/Traffic Environmental Setting on page 57, states that "There could be short-term closures of roads on City, County, and State-owned properties which could affect public access."

4-1 • Any work performed within Caltrans right-of-way (R/W) will require an encroachment permit prior to temporary road closures or traffic control.

4-2 • ***Highway traffic control*** - Any traffic control will need to be addressed as part of Caltrans permit approval. Stoppage of traffic for placement of aerial lines, installation or removal of overhead conductors crossing a highway requires traffic control in accordance with policy shown in the Caltrans Standard Plans and the California Manual on Uniform Traffic Control Devices (MUTCD).

Standard Plans http://www.dot.ca.gov/hq/esc/oe/project_plans/HTM/10_plans_disclaim_US.htm
MUTCD http://www.dot.ca.gov/hq/traffops/signtech/mutcdsupp/

• ***Freeway traffic control*** - Please refer to Caltrans Encroachment Permits Manual (Appendix E, Transportation Plan Management Guidelines) for guidance on Traffic Control on freeways for the placement of aerial lines. The construction of safety nets is another option that is outlined further in the Caltrans Encroachment Manual (Appendix E, H Support Diagram for Aerial Crossings).

http://www.dot.ca.gov/hq/traffops/developserv/permits/pdf/manual/Appendix_E_(WEB).pdf

If you have any questions regarding Traffic Control, please contact the District Traffic Manager, Camille Aboufadel at (619) 718-7833 or camille_aboufadel@dot.ca.gov.

If you have any questions, please contact Leila Ibrahim of the Development Review Branch at (619) 688-6802.

Sincerely,

JACOB ARMSTRONG, Branch Chief
Development Review Branch

4. Caltrans

4-1: Any required use of Caltrans right-of-way will be coordinated with Caltrans and include the acquisition of an Encroachment Permit. This will also apply to any temporary road closures or traffic control needed to assist in the effective implementation of the Plan.

4-2: Potential road closures will be minimized in high-use recreation areas, especially on weekends and holidays when traffic near recreational areas has the potential to conflict with the implementation of the Plan. No aerial lines shall be affected in the implementation of the Plan.

Review, Environmental@Parks

From: Jack & Dena Bransford [redacted]
Sent: Wednesday, July 10, 2013 2:04 PM
To: Review, Environmental@Parks
Subject: Fw: Public Comments on Initial Study (IS) and Mitigated Negative Declaration (MND) for Proposed Feral Pig Eradication and Control Project

Follow Up Flag: Follow up
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Mr. Serna...,

The purpose of this email is to request a favor of you. It has just come to my attention that I mistakenly addressed my following email to [redacted] ***(a member of our local office of the CDFW)*** instead of to you, as I had intended (see below). At any rate, I'm hoping that you will still chose to accept my input as a part of the subject study. I'm particularly concerned, because my input contains many of the concerns that were provided to me by many of our local folks.

Please advise me, as to your decision. Thanks much for your consideration.

Jack B...

----- Original Message -----
From: Jack & Dena Bransford
To: [redacted]
Sent: Monday, July 08, 2013 11:51 PM
Subject: Public Comments on Initial Study (IS) and Mitigated Negative Declaration (MND) for Proposed Feral Pig Eradication and Control Project

To: Luke Serna, Associate Park & Recreation Specialist

Hi Luke...,

I am submitting this input as an individual tax payer, and long-term resident of San Diego County - although I have a well-known association with several local area 'groups' that have a great deal of interest, and a record of proactive involvement in matters that relate to the welfare of the fauna and flora of San Diego County. The recreational opportunities that are related to the wildlife of our county, such as, hunting are also of great interest.

The purpose of this email is to request that the following comments and related recommendations be incorporated into the processing of the subject study; and, memorialized within the final report. If for whatever reason this request is not to be complied with, please so advise me.

In short, these are some of the matters that give me cause for concern. After my preliminary review of the **IS/MND** document I initially thought that the structure and focus of the study were at least adequate. However, after a second reading with a more critical analysis of the content, I'm left with more questions than answers with respect to matters that should represent the foundation of the plan. Some of the most
5-1 fundamental and important questions that beg asking, are: **1)** What's purpose/objective of this study? Is it eradication, or to manage and control the population? **2)** The question of eradication vs. population control – if answered might explain why there is no indication of intent to abolish or ameliorate the CDFW

5-2 imposed 'fee-to-hunt' and other existing regulations that seem to be incompatible with achieving significant reductions in the pig population. **3)** In this time of acute shortages of both funds and manpower, I could find no evidence of intent to maximize the early involvement of volunteer, instead of professional hunters – meaning high-cost vs. no-cost; which could be arranged through collaboration with local organizations, such as, the **SDCWF** - for more info click on http://www.sdcwf.org/. If true, how is the reliance on the "high-cost" option justified? And, lastly **4)** There does not seem to be any evidence of intent to involve the San Diego County Fish and Wildlife Advisory Commission (FWAC) in the planning for the subject study – for more related info click-on http://www.sdcwf.org – if true, why is this?

5-3

5-4

In closing, I must opine that the level of ambiguity these matters represent, if allowed to remain, will create a significant problem for achieving success regarding the feral pig issue.

Jack Bransford… [redacted]

5. Jack Bransford

5-1: See Section 2.4 (Project Objectives), p.7:

The objectives of this project are to protect watersheds, source water, human health, natural ecosystems, endangered and threatened species and habitats, agriculture, and public and private property by conducting a feral pig eradication and control project that would involve public agencies, tribes, and participating organizations adopting common goals, a unified strategy, and a jointly supported leadership model to eliminate or reduce feral pig populations within San Diego County to a manageable level.

Regarding what constitutes a "manageable level", refer to Section 2.3 (Background and Need for the Project), p. 7:

The underlying goal of most feral pig eradication and control efforts is to reduce or eliminate rooting related disturbance caused by pigs in the local native ecosystem… Results of [previous] studies suggest… a moderate reduction in pig density/numbers (20-30%) may lead to little or no reduction in damage, whereas a reduction of 40-50% may significantly reduce rooting in an area.

Hunting is only one of two primary methods proposed for feral pig eradication and control - the other being trapping. Although hunting of wild pigs is permitted in many areas of the state on both public and private land (by permission of the owner), their presence in San Diego County is a fairly recent occurrence. Wild pig hunting is already permitted in the Cleveland National Forest, and taking of wild pigs by private hunters may supplement coordinated efforts at reducing their numbers in San Diego County.

5-2: Regarding the continued need to purchase 'pig tags": Because public hunting of feral hogs on permitted lands is considered an activity independent of this eradication and control project (which will also occur on private land and public land otherwise closed to hunting), it is still subject to existing laws and regulations. See Fish and Wildlife Code Section 4650-4657:http://www.dfg.ca.gov/wildlife/hunting/pig/regulation.html

5-3: The associated NEPA Environmental Assessment, Feral Pig Damage Control Project, March 2013 made the following conclusions regarding the use of volunteers to aid in pig control. This plan has agreed with these conclusions and chosen to move forward with the objectives found in Section 2.5.

Volunteers are prone to turnover and vary considerably in their skills and physical ability to do this work under arduous conditions. In addition, the government assumes liability and responsibility for physical injuries or accidents when incurred as part of official volunteer duties. A single accident could significantly

increase the cost of operations. These considerations, along with concerns for public safety and humane treatment of animals led to elimination of this alternative. Only highly trained and experienced professional pig hunters would carry out pig removal efforts for the agencies because of these reasons. Recreational hunting of pigs would not be restricted under any of the alternatives considered in detail.

See Section 2.5.2 (Project Description, Removal of Feral Pigs – Trapping), p. 8:

Experienced professional marksmen would be used to minimize the chances that pigs are
wounded and escape an encounter with shooters.

It is believed that the use of professional hunters will provide the most expedient, safe, and humane means of eliminating or significantly reducing the feral pig population within the target period.

With respect to the limits of available funding for the ability to carry out the Plan, The San Diego County Wildlife Federation has noted that “Public hunting would also provide a source of revenue for the Department of Fish and Wildlife through the sale of pig tags” (letter from SDCWF President Robert R. Smith, dated 8 July 2013).

5-4: San Diego County has been involved in the planning process, with three representatives on the Committee contact list and seven individuals from the County on the Working Group e-mail list for the project. County employees have also been involved with this project through the Inter-Governmental Feral Pig Working Group.

[redacted]

From: [redacted]
Sent: Monday, July 08, 2013 8:27 AM
To: [redacted]
Subject: FW: Feral Pig eradication

Follow Up Flag: Follow up
Flag Status: Flagged

FYI below

[redacted]

"Only when the last tree has died and the last river poisoned and the last fish caught will we realize the we cannot eat money".
-North American Cree Indian

From: Joseph Nunez [redacted]
Sent: Friday, July 05, 2013 11:56 AM
To: [redacted]
Subject: Feral Pig eradication

Hello Mr. Burg. I'm Joe Nunez, a hunter, an environmentalist with Quail Forever (formerly Quail Unlimited), have volunteered on several projects with Fish & Wildlife, BLM, and Natl. Forest Service for over 25 years. It is my opinion any attempt to eradicate 'Feral Hogs' in San Diego County is a worthless, defective use of funds. It is my suggestion to make note of the unproductive efforts in other states (Texas, Georgia, etc.) to discover what wasteful spending can lead to. However, it is possible to 'control' the expansion of these unwanted invaders. Also, any regulation requiring the 'purchase' of a 'pig stamp' in order to facilitate eradicating hogs is truly ironical.

6-1

6-2

Joe Nunez
[redacted]

6. Joseph Nunez

6-1: The proposed methods for feral pig eradication and control have been developed in consultation with other natural resources agencies such as the California Department of Fish & Wildlife, U.S. Forest Service and Bureau of Land Management, and are considered to be the best approaches to contend with this growing population. Every effort will be made to use resources wisely, effectively and efficiently.

Regarding the continued need to purchase ‘pig tags”: Because public hunting of feral hogs on permitted lands is considered an activity independent of this eradication and control project (which will also occur on private land and public land otherwise closed to hunting), it is still subject to existing laws and regulations. See Fish and Wildlife Code Section 4650-4657:http://www.dfg.ca.gov/wildlife/hunting/pig/regulation.html

8 July, 2013

California Department of Parks and Recreation

Subj.: Public Comments on Initial Study (IS) and Mitigated Negative Declaration (MND) for Proposed Feral Pig Eradication and Control Project

Attn: Luke Serna, Associate Park & Recreation Specialist

Dear Mr. Serna,

This public input is on behalf of the San Diego County Wildlife Federation (SDCWF) relating to subject Feral Pig Eradication Project in San Diego County. SDCWF is a coalition of 20 conservation and outdoor recreational organizations, the combined membership of which is about 12,000 individuals.

7-1 The IS/MND document alludes to hunting in a few places (e. g. Paragraph 2.5) as a possible way to control the feral pig population, but it is never stated whether this includes private hunters or only professional "dispatchers". We suspect that hunting by the public was not considered since the only alternatives listed were trapping, dispatch with helicopters and dispatch with dogs. We contend that public hunting is another viable alternative that should be included in the Initial Study, especially in Cleveland National Forest from which the spread of feral pigs is emanating .

7-2 We are not claiming at this time that public hunting is the best solution, but that it should at least be considered as part of an integrated plan for controlling the feral pigs. For example, public hunting provides a free source of labor for pig control, as opposed to the cost of using professional dispatchers, esp, using helicopters. Public hunting would also provide a source of revenue for the Department of Fish and Wildlife (DFW) through the sale of pig tags. The survey of pig activity mentioned in the IS/MND document would be a valuable resource to point hunters to promising areas and would increase public participation. In addition, Cleveland National Forest would need to make some effort to educate the public on ways to access the areas of pig activity and perhaps to provide temporary road access and parking areas for hunters.

There are two areas for which an agreement must be reached with DFW or the IS/MND modified:

7-3 1. The IS/MND states that it will not leave carcasses above the high water mark. DFW regulations require that any abandoned carcass must be at least 150 feet away from the high water mark;

7-4 2. The IS/MND indicates that in some cases carcasses will be abandoned. DFW regulations (and ethical hunting) require that the meat of edible game (which includes feral pigs) must be cared for to make it suitable for human consumption. It is not clear whether this regulation applies only to public hunters, or to depredation and "dispatch" hunters as well.

7-5 Finally, Chapter 5, Best Management Practices and Mitigation Measures, seems incomplete. A great deal of effort is devoted to mitigating trapping, but very few measures are mentioned to mitigate dispatch with helicopters or dispatch with dogs. For example, we believe the risks of hunting with helicopters is minimized, especially given the rugged terrain which the feral pigs inhabit, e. g. the drainages of the San Diego River. In addition to the potential loss of life in a helicopter crash, the risk of wildfires caused by such a crash is significant. The use of dogs could also have a significant impact on native wildlife if these dogs were not properly trained to chase and attack only pigs. A poorly trained dog might just as well attack deer and small game. Steps to mitigate this risk, such as certifying that the dogs are properly trained, should be indicated in Chapter 5. If hunting by the public is included as a method of control of the feral pig population, there are probably risks with this approach which must mitigated as well.

Our organization has offered our support in addressing the pro's and con's of public hunting to the Department of Fish and Wildlife. We extend this offer to the Department of Parks and Recreation as well. We believe that unless this alternative is evaluated in depth, we may be overlooking an effective and inexpensive tool for the eradication and control of feral pigs in San Diego County.

Respectfully,

Robert R. Smith
President, San Diego County Wildlife Federation
rrsmith@cox.net

7. San Diego County Wildlife Federation

7-1: Hunting by the public will continue to be permissible as dictated by existing law within the jurisdiction where pigs are located.

7-2: Thank you for the additional possibilities for the public hunting of pigs. As stated above, public hunting will continue to be allowable in appropriate jurisdictions. Additional survey information regarding the locations of pigs within DFW lands can be obtained by contacting DFW.

7-3: Standard Best Management Practices (BMPs) and mitigation measures for handling of carcasses have been incorporated into the document (See Chapter 5, BMPs and Mitigation Measures, Water Quality), including not leaving carcasses within the ordinary high water mark or within the bed and bank of any drainage or wetland so as not to degrade water quality. DFW regulations will also be followed as applicable.

7-4: Due to the circumstances regarding the need to control the pig population including difficulty in transporting carcasses, they may require abandonment. DFW hunting regulations will apply to public hunters.

7-5: Regarding dispatch with dogs, it is expected that pig dogs used by professional hunters will be well-trained and experienced as part of the effort to minimize disturbance to native wildlife.

See Section 2.5.2.c (Project Description, Removal of Feral Pigs – Ground Dispatch with Dogs), p. 8: Dogs would be trained to bark and corner pigs, but trained not to attack them nor harass wildlife. Dogs would be outfitted with radio collars and/or GPS units so marksmen would be aware of their locations at all times.

Regarding aerial dispatch with helicopters: due to safety and cost constraints, this method will generally be limited to very remote areas with little to no public access in the way of roads or trails.

See Section 2.5.2.b (Project Description, Removal of Feral Pigs – Aerial Dispatch with Helicopters), p. 8: To ensure public safety and minimize noise impacts, buffer zones of ½ mile would be established around communities and residential subdivisions; buffer zones of 1,000 feet would be established around private lands and other facilities.

Areas actively undergoing aerial dispatch activities may be temporarily closed to the public to protect public safety.

Public and worker safety will be a top priority during all feral pig management activities. Aerial hunting will not by conducted during extreme fire weather

conditions. Helicopter operations will only occur during weather conditions and at altitudes where safe operations are possible.

THE HUMANE SOCIETY
OF THE UNITED STATES

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July 8, 2013

Sent via Email (*enviro@parks.ca.gov*)

Luke Serna, Associate Park & Recreation Specialist
2797 Truxtun Road
San Diego, CA 92106

Comments re: CDPR's "NOTICE OF AVAILABILITY AND INTENT TO ADOPT AN INITIAL STUDY/MITIGATED NEGATIVE DECLARATION FOR THE PROPOSED FERAL PIG ERADICATION AND CONTROL PROJECT"

Dear Mr. Serna,

On behalf of the members and supporters of The Humane Society of the United States and The Fund for Animals (collectively "the HSUS"), the HSUS submits the following comments to be considered with respect to the California Department of Parks and Recreation's (CDPR) proposed project regarding the eradication of nonnative feral pigs in San Diego County.

For the following reasons, The HSUS generally supports the CDPR's proposal to address the threats to natural and industrial resources, public health and safety caused by feral pigs. However, we oppose the use of aerial gunning as a control method, and believe that the CDPR's proposal fails to properly consider the use of nonlethal control options as well as a strategy to prevent new populations from forming in the area.

I. Aerial Gunning

Aerial gunning is a wildlife management method that involves shooting animals from low-flying fixed-wing aircraft or helicopters on private and public lands and, The HSUS adamantly opposes the use of aerial gunning as a means of resolving conflicts with wildlife populations because it is unnecessarily cruel, dangerous and costly compared to other wild pig control methods.

8-1

Pursuit with low-flying aircraft, and the added intensity of loud gunfire, can physically and psychologically harm both wild pigs and non-target species, resulting in injury (or death), anxiety, stress, and fear. Given how difficult it is to aim at a

8-1 cont.

moving animal from the air, wounding and crippling rates are likely to be significant. Animals injured in these operations are often left to suffer for hours or days before finally succumbing to their wounds. Not to mention, because these operations may be conducted year round, pregnant or lactating females may be killed leaving their young to starve to death.

Aerial gunning operations are also inherently costly and dangerous activities because it requires highly trained pilots to fly at low speeds and altitudes while in pursuit of targeted animals. Since 1989, USDA-Wildlife Services, a federal agency that conducts predator control operations in the western U.S., has crashed at least 22 helicopters or planes while conducting aerial gunning operations, resulting in at least 7 fatalities and 25 injuries.

For these reasons, we strongly discourage San Diego County from using aerial gunning as a method of controlling the county's wild pig population.

II. <u>Contraception</u>

8-2

The concept of managing certain wildlife populations non-lethally, through immunocontraception, is no longer a theoretical construct and has proved highly successful with wild horses, urban deer, wapiti, over 110 different species of zoo animals, and even wild African elephants in South Africa. To be sure, the subject is still controversial and evokes strong reactions from state fish and game agencies, but the record of success is well-documented in the scientific literature. The HSUS and NPS have a history of cooperating on these efforts, including the contraception of wild horses on Assateague Island National Seashore off Maryland and Virginia and of white-tailed deer on Fire Island National Seashore off New York.

The natural history of the feral pig more or less dictates that the contraceptive agent either be administered remotely, through oral delivery, or by dart, or, alternatively, as a permanent sterilant, after capture. While we normally work with contraceptives so that the process is reversible in wild animals if management objectives change, in the case of feral pigs in San Diego county, we suspect that CDPR would be more interested in a permanent sterilant, which would not just stabilize the feral pig population but could, over time, help eliminate reproduction and reduce the current population over time. The HSUS does not necessarily support the notion that feral pigs must be eradicated, but we understand that it may be CDPR's goal and we hope we can work together to make the pursuit of that goal as humane as possible.

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There are a number of potential contraceptive and sterilization approaches available for mammals. Porcine zona pellucida (PZP) vaccines have worked in a variety of species, but because the antigen is derived from the pig, it does not work in pigs. This has been validated by testing in several wild species around the world, without success.

However, one product that is effective in pigs is GonaCon™ is a single-shot, multiyear vaccine that stimulates the production of antibodies that bind to the gonadotropin-releasing hormone (GnRH) in an animal's body. GnRH signals the production of sex hormones (e.g., estrogen, progesterone and testosterone). By binding to GnRH, the antibodies reduce GnRH's ability to stimulate the release of these sex hormones. All sexual activity is decreased, and animals remain in a nonreproductive state as long as a sufficient level of antibody activity is present.

GonaCon™ was developed by the U.S. Department of Agriculture's National Wildlife Research Center (NWRC) in Fort Collins, Colorado. This immunocontraceptive, GonaConTM, has been tested in several mammals, including pigs. In preliminary studies led by Dr. Lowell Miller at NWRC, GonaCon™ has effectively contracepted domestic pigs, feral pigs captured in the United States, and European wild boar captured in England.

Unfortunately, like PZP, GonaCon™ requires periodic booster inoculations and that is probably not a practical approach for wild pigs. Contracepting feral hogs may also be hampered to some extent by the thick undergrowth in which these animals are found, which would make it difficult to deliver a fertility control agent remotely, via darting. However, for the same reason, we suspect that lethal control of feral pigs by shooting would be no less difficult. Feeding stations could be used to draw pigs to a site for darting, though pigs may become wary of feeding stations over time. Therefore, if feeding stations are used to facilitate darting, this technique may have to be combined with other techniques. Contraception or sterilization can also be implemented by delivering the agent to live-captured hogs. This would be a time-consuming approach, but may not take much more time than trapping pigs for lethal removal. As stated previously, we believe the time put into this project would be worthwhile given the development of a model, humane approach to feral pig control which then could be applied elsewhere around the country.

Another promising approach is currently being developed by researchers at Auburn University is an oral/nasal, pig-specific immuno-contraceptive method for controlling wild pig reproduction. Researchers in the College of Veterinary Medicine at Auburn University have identified technologies for blocking the union of the sperm with the egg and thus interfering with

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reproduction. Research studies to date have resulted in patented technologies that strongly suggest that reproduction in pigs can be blocked or substantially reduced by the immuno-contraceptive approach developed by Auburn researchers.

In view of the considerable commercial potential of this technology, Auburn University has formed a public/private partnership with the Auburn Research and Technology Foundation / PhageCon, LLC for the commercialization of the technology developed in this overall project. The necessary elements are in place with the Auburn University/ ARTF / PhageCon, LLC partnership for the successful development and commercialization of the technology that will result in the reduction of wild pig populations and therefore reduce or eliminate the ecological, economic, and health problems associated with the wild pigs. For these reasons, we highly recommend that officials in San Diego County contact researchers at Auburn University to determine if the county would be considered an acceptable test site for this new and innovative product.

III. Use of dogs

8-3 The proposal mentions that dogs will be used to locate pigs. The dogs are to be trained only to find and corner the animals, but not to attack. Unfortunately, although these "bay" dogs are not trained to attack, altercations can and likely will occur between the two animals. When cornered, feral pigs may become aggressive and can act unpredictably, putting both species in serious danger. Furthermore, the use of bay dogs can be incredibly stressful and harmful not only to the feral pigs they are chasing, but to non-target wildlife as well. Although eradication of these non-native pigs may be necessary, it should be done in the most humane and ethical manner possible.

IV. Strategies to prevent future proliferation of feral pigs should be considered

Feral pigs are voracious foragers that can wreak substantial ecological damage on natural resources and threaten humans and other animals.[1] The foraging, rooting and wallowing behavior of these animals can cause significant damage to agricultural crops, trees and other plants, and

[1] *See* LeoRoth, *Feral Hogs Damage Property and Wildlife*, ROCHESTER DEMOCRAT & CHRONICLE (Oct. 23, 2011) *available at* http://www.democratandchronicle.com/ article/20111023/SPORTS0103/110230352/1007/SPORTS/Feral-hogs-damage-property-wildlife.

erosion of river and stream banks and destruction of wetlands.[2] In addition, feral pigs proliferate rapidly, and populations of feral pigs and wild boar have exploded in the southern United States over the last two decades.[3] If conditions are right, these animals can breed at six months of age and have three litters a year averaging four-six piglets each litter.[4]

If eradication of a population is truly the goal, it only seems logical to take further steps to prevent future populations from being introduced into the county and state. Wildlife managers in other states have noted that maintenance of wild populations of feral pigs as a game species for purposes of regulated hunting would be problematic, because these animals adapt well to virtually any habitat, compete with native wildlife such as deer, bear, turkey, squirrels and waterfowl for food, and even consume the nests and eggs of native ground-nesting birds and reptiles, fawns and turkey poults.[5] Further, feral hogs and wild boar carry transferrable diseases.[6]

The CDPR's eradication effort will only be effective at preventing these threats if there is not any additional influx of feral pigs into the state, nor additional intentional breeding. Therefore, prohibiting the captive possession, import and breeding of feral pigs is an important step to preventing the threats to natural and industrial resources, public health and safety in the future. California currently has several private hunting preserves that stock these non-native, invasive pigs.[7]

8-4

There is substantial evidence that free-roaming feral pig populations are frequently the result of escape or release of animals from these private hunting preserves. A USDA study conducted for New York's Invasive Species Council in 2010 found that "shooting preserves can be a source of feral swine populations that threaten natural resources, agriculture, human health

[2] Roth, *supra* n.1.
[3] The problems cause by proliferation of feral hog populations have even been highlighted by several major television networks, *e.g.*, ABC Nightline's March 7, 2012 *Extreme Exterminators* segment (http://abcnews.go.com/Nightline/video/extreme-exterminators-hunt-wild-hogs-15874111); and Discovery Channel's *Hogs Wild* television series (http://dsc.discovery.com/tv-schedules/series.html?paid=1.15451.26288.40518.1).
[4] Roth, *supra* n.1.
[5] *Id*.
[6] *Id*. *See also* Sequoyah NWR, Feral Hog Management Plan (2010) *available at* http://www.fws.gov/southwest/refuges/oklahoma/sequoyah/PDF/2010SequoyahFeralHogPlan.pdf (feral hogs are known to carry at least 13 diseases – including brucellosis, pseudo rabies, tuberculosis, bubonic plague and anthrax – and pose a threat to the health of both humans and other animals); Sabine NWR, Draft Feral Hog Management Plan (2010), *available at* http://www.fws.gov/swlarefugecomplex/pdf/Sabine2010HogPlan.pdf (from October 2007 to September 2008, a total of 223 feral hogs were taken in the refuge complex, and of the feral hogs tested for disease, *nearly half* tested positive for pseudo rabies); USDA-NWDP, Feral Swine Disease Surveillance (Oct. 2011) *at* http://www.aphis.usda.gov/wildlife_damage/nwdp/feral_swine.shtml (Feral swine "can be reservoirs of disease and may act as a host to a number of parasites, leaving the United States domestic swine industry vulnerable to disease.").
[7] See Hoss Hog Hunting Adventures at http://www.hosshoghunting.com/, Broadside Boars Hunting Adventures at http://www.broadsideboarshunting.com/european-hog-hunt.htm, and All Season outfitters at http://www.pig-hunt.com/?page_id=285.

8-4 cont.

and safety, and property."[8] The study noted that populations of feral pigs in New York state are found near private hunting preserves, and specifically attributed the "source of feral swine populations" in 8 of 10 states to be "game preserve escapees" and/or "hunter releases."[9]

If eradication is the goal, feral pigs should be recognized as injurious species, and by prohibiting import, breeding, and captive possession of these species, California would join a growing list of states and other governmental entities attempting to address the significant threats caused by the escape, release and proliferation of these animals. In the last year alone, New York and Vermont passed legislation prohibiting captive possession and breeding of feral pigs.

Conclusion

To be clear, the HSUS and its members do not support the unregulated killing of wildlife species. We understand the need to prevent threats to natural and industrial resources, public health, and safety caused by the escape, release and proliferation of feral pigs. However, we strongly believe that the CDPR must act to ensure that no more destruction of wildlife occur than is absolutely necessary to address the threats posed. This position also underlies our support for the prohibitions on import, captive possession, and release into the wild of feral pigs, as allowing such activities would substantially increase the risk of further proliferation of these species in the state. This position also reinforces our support of more humane control methods, such as contraception.

Sincerely,

Jennifer Fearing
California Senior State Director
jfearing@humanesociety.org – email | 916-992-3667 – cell

[8] USDA-APHIS, *Status of Feral Swine in New York State*, at 13 (2010), *available at* http://www.pressconnects.com/assets/pdf/CB172981412.PDF.
[9] *Id. at 16-19.*

8. Humane Society of the United States

8-1: Aerial hunting is expected to be the least used method, but may be necessary to completely clear some areas of feral pigs. This method will be utilized only in remote locations that are difficult to access on foot, and is expected to be used only to pursue animals that are difficult to trap.

As noted in the U.S. Forest Service's March 2013 *Environmental Assessment for Feral Pig Damage Control on Cleveland National Forest and Bureau of Land Management Lands,* use of aerial hunting methods is expected to help reduce the overall number of pigs killed as a result of this project by shortening project duration and thereby reducing reproduction of the pig population.

8-2: Managing pig population through contraception is not being actively pursued as an option, however, it may be considered in the future if the currently proposed range of options for feral pig population control don't meet the project objectives set out by the IS/MND. Thank you for the information you've provided regarding the options that may be available.

8-3: See comment 7-5 above regarding the measures in place to ensure the effective use of dogs to aid in the control of the pig population. Dogs used by professional hunters will be well-trained and disturbance to native wildlife will be minimized to the greatest extent possible.

8-4: Future proliferation of feral pigs is an important consideration and highlights the need for increased public education regarding the impacts that result from their behavior. Thank you for information regarding their presence within private hunting reserves. Continued coordination with land owners will be needed to understand how the pig population is changing. Adaptive management will be critical to staying aware of the introduction of additional pigs into the County and how to manage their impacts as well.