

Hollenbeck Canyon Wildlife Area

Land Management Plan



prepared for:
State of California
The Resources Agency
Department of Fish and Game
South Coast Region
4949 Viewridge Avenue
San Diego, California 92123



prepared by:
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State of California
The Resources Agency
DEPARTMENT OF FISH AND GAME

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FOR THE
HOLLENBECK CANYON WILDLIFE AREA**

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August 2008

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ACRONYMS AND ABBREVIATIONS

ADA	Americans with Disabilities Act
BAER	Burned Area Emergency Response
BLM	Bureau of Land Management
BMP	Best Management Practice
Cal-IPC	California Invasive Plant Council
Caltrans	California Department of Transportation
CCR	California Code of Regulations
CDF	California Department of Forestry and Fire Protection
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
GIS	Geographic Information System
ESA	Endangered Species Act
HCPB	Habitat Conservation Planning Branch
HCWA	Hollenbeck Canyon Wildlife Area
HPAI	Highly Pathogenic Avian Influenza
IUCN	World Conservation Union
LMP	Land Management Plan
MHPA	Multiple Habitat Planning Area
MSCP	Multiple Species Conservation Program
NCCP	Natural Community Conservation Program
NGO	Non-governmental Organization
RJER	Rancho Jamul Ecological Reserve
ROW	right-of-way

SR	State Route
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
WBWG	Western Bat Working Group
WCB	Wildlife Conservation Board
WFMP	Wildfire Management Plan

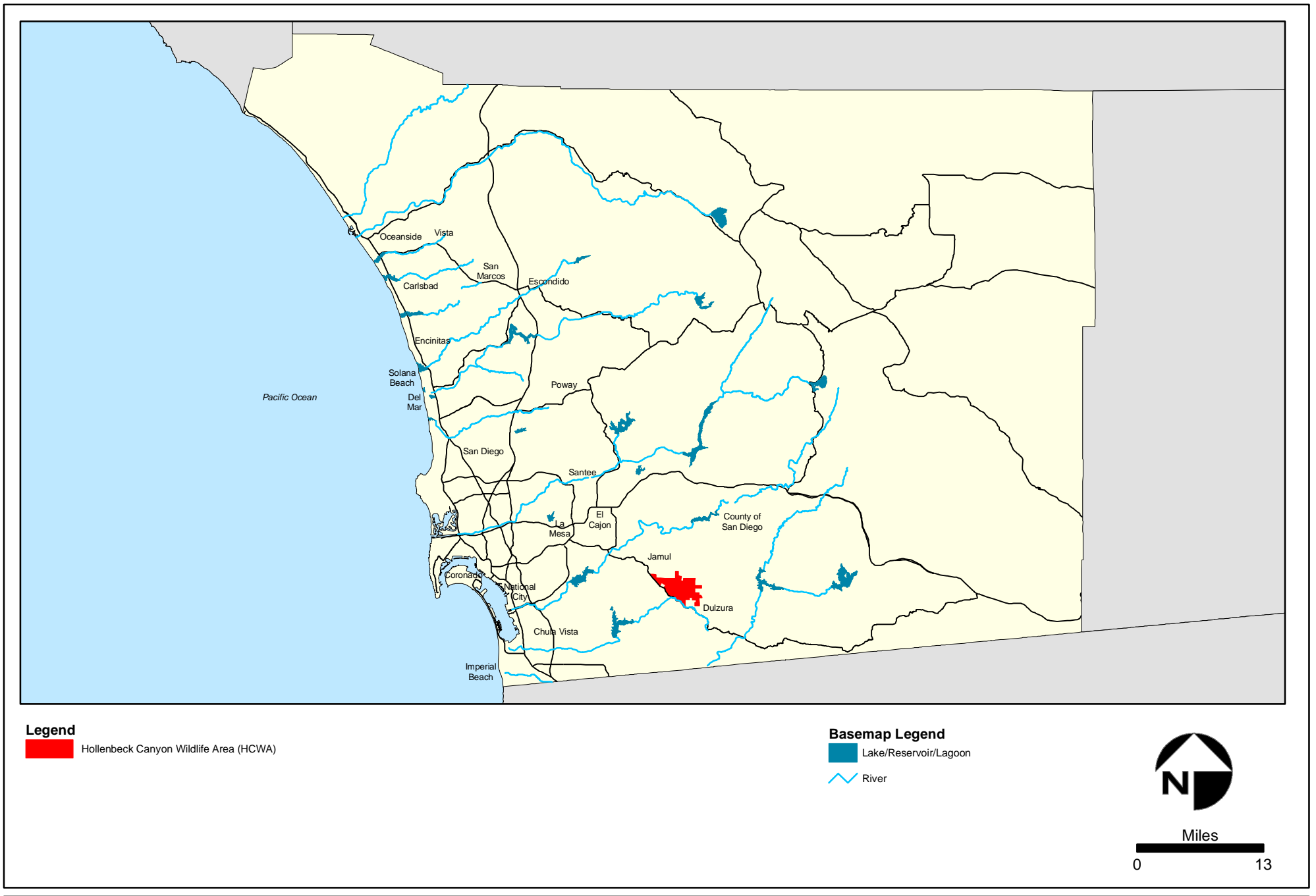
I. INTRODUCTION

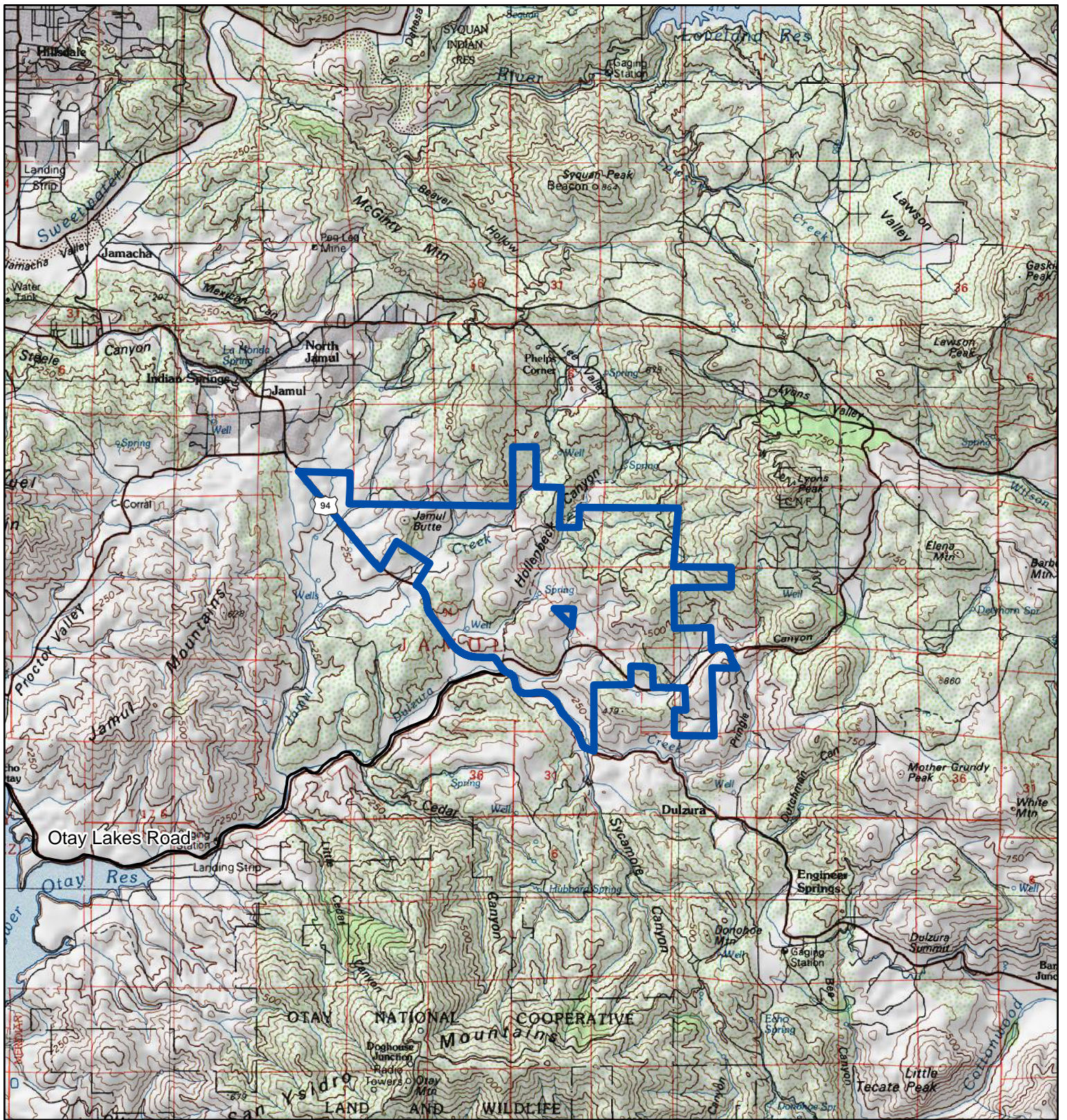
This Land Management Plan (LMP) was prepared as a guide for the California Department of Fish and Game (herein referred to as the Department) in the management, maintenance, and restoration of the biological diversity and ecosystem components currently and historically present within the 5,189-acre Hollenbeck Canyon Wildlife Area (HCWA). HCWA is located in south-central San Diego County between the communities of Jamul and Dulzura, approximately 26 miles east-southeast of downtown San Diego (Figure 1). It lies between the Jamul Mountains to the west, Otay Mountain to the south, and the Cleveland National Forest to the northeast (Figure 2).

A. PURPOSE OF ACQUISITION

Acquisition of the HCWA property was a unique opportunity to provide compatible wildlife-dependent recreation and to conserve, restore, and protect declining sensitive species and their associated habitats in one of the largest blocks of contiguous land available in San Diego County. The property is characterized by many natural communities (coastal sage scrub, chaparral, grasslands, wetlands, and woodlands) that function as valuable foraging and breeding habitat for numerous sensitive plant and animal species.

The primary objective for this land acquisition was to conserve areas of high- and very high-quality habitat, including several areas occupied by endangered species, while providing compatible wildlife-dependent recreational opportunities to the public. Acquisition of HCWA conserved a large portion of the southern end of Hollenbeck Canyon along with Jamul Creek and the associated ridgelines, peaks, and linked unnamed canyons. In addition, acquisition ensured preservation of a large portion of an established north-south wildlife corridor along the entirety of Hollenbeck Canyon into Lyons Valley. Completing the acquisitions that formed HCWA ensured a functional connection to the Department's existing open space reserve (Rancho Jamul Ecological Reserve) immediately to the west, and the Bureau of Land Management's (BLM) Otay Mountain Wildlife Management Area and Wilderness Area immediately to the south. The contiguity provided by the acquisition of HCWA strengthens these core areas of largely undisturbed habitat and provides a source of plant and animal populations for maintaining healthy ecosystem functions throughout a large part of south-central San Diego County. On HCWA, the land acquisition provides compatible recreational opportunities to the public.





USGS 100,000 El Cajon Quadrangle

Basemap Legend
 HCWA Boundary



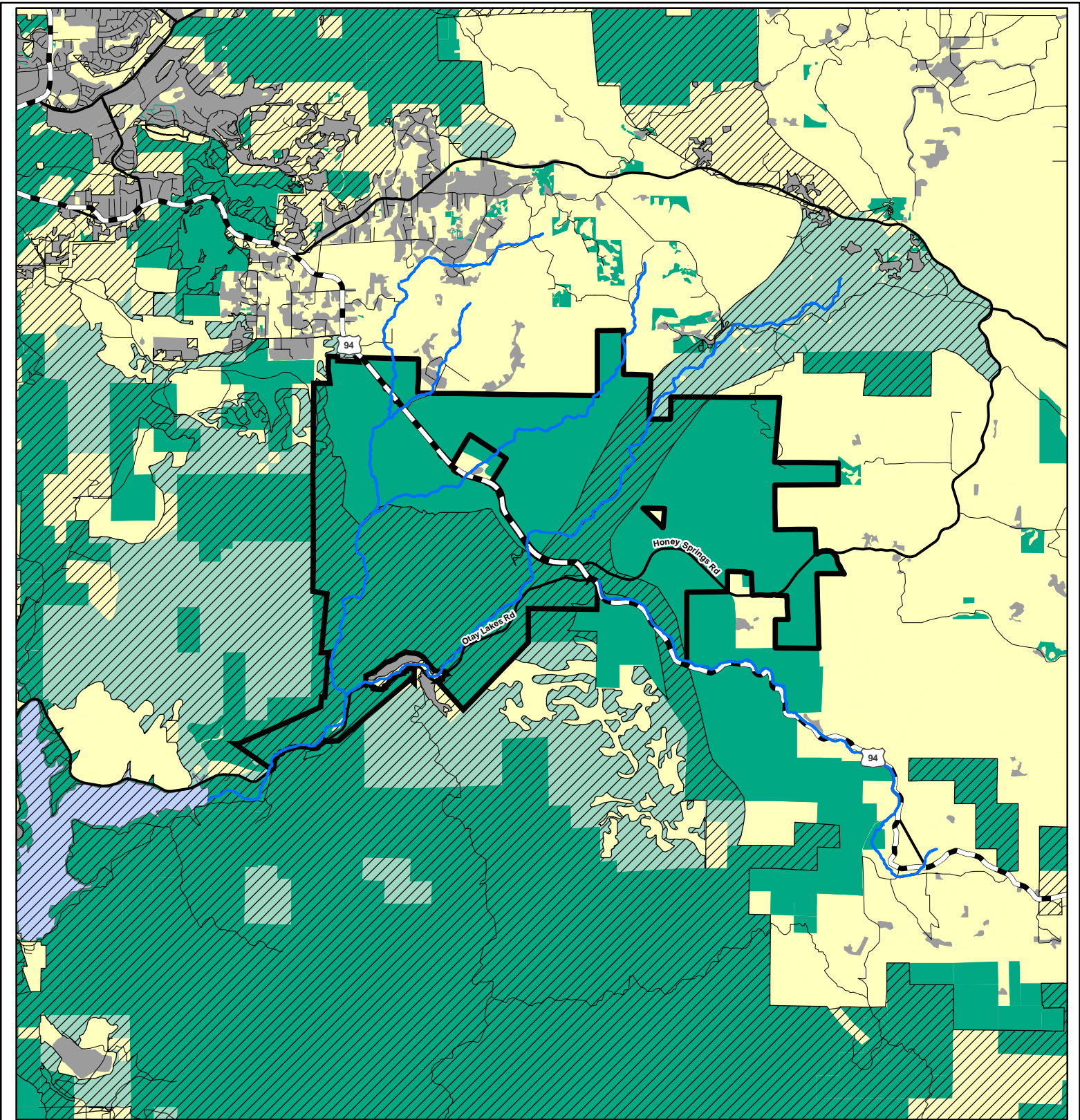
Feet
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1. **Regional Conservation Efforts**

The acquisition of HCWA has enhanced regional efforts to conserve southern California's natural heritage, the goal of which is to establish an open space network that will protect native habitat and associated species. For example, The Wildlife Conservation Board (State of California) is actively partnering with other agencies, such as the BLM, the U.S. Fish and Wildlife Service (USFWS), and the State Coastal Conservancy, to coordinate funding and conservation planning efforts in this region. This collaboration has enabled the acquisition and protection of contiguous parcels of public open space lands, thereby conserving important regional wildlife habitat, habitat linkages, and wildlife movement corridors in perpetuity (Figure 3). Consequently, HCWA fits into a larger, relatively intact habitat mosaic and was identified by the Multiple Species Conservation Program (MSCP) as a high-priority acquisition for linking and conserving contiguous habitat.

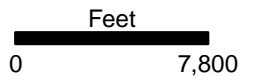
Other coordinated regional planning efforts in San Diego County include multiple species and habitat conservation plans and subarea plans under California's Natural Community Conservation Program (NCCP) Act of 1992, as amended, such as the City of San Diego MSCP, the Multiple Habitat Conservation Program in northwest San Diego County, the South County MSCP, and the East County MSCP. HCWA falls within the South County MSCP, which is a subarea of the MSCP Subregional Plan, a comprehensive habitat conservation planning program for southwestern San Diego County. The MSCP serves as (1) a multiple species habitat conservation plan pursuant to Section 10(a) of the federal Endangered Species Act of 1973, as amended, and (2) a plan under the NCCP Act.

The primary objective of the MSCP is to protect natural communities and biodiversity by preserving a network of natural habitat and open space. The MSCP preserve system is being assembled within an area identified in the MSCP Subregional Plan as the Multi-Habitat Planning Area (MHPA), which will be managed for its biological resources. A swath of land traversing approximately 1,028 acres (20 percent) of HCWA was included within the MHPA (Figure 3), and was identified as part of an important biological linkage connecting Otay Mountain/Jamul Mountains to Sycuan Peak. The acquisition of HCWA has secured a part of this important linkage and demonstrates the Department's ongoing commitment towards NCCP planning efforts in San Diego County.



- Legend**
- Conserved Land
 - Future MSCP Preserve Planning Area
 - MSCP MHPA
 - Non-Conserved Natural Habitat and Agriculture
 - Developed

- Basemap Legend**
- HCWA and RJER Boundaries
 - State Highway
 - Major Road
 - Road
 - Stream
 - Lake/Reservoir



Conservation Source: MSCP, County of San Diego, USFWS, CDFG
 Land Cover Source: SANDAG 2002 Vegetation Data Layer, updated by TAIC in 2006

MSCP/NCCP planning will become even more important as the population of San Diego County continues to accelerate. HCWA is characterized by gentle to moderately steep hills and open valleys. The property is located near the fringe of development and bordered by State Route (SR) 94, making it potentially desirable to developers (Figure 2). The Department's acquisition of HCWA, and the adjacent 4,702-acre Rancho Jamul Ecological Reserve (RJER) located on the opposite side of SR 94, will protect this valuable biological resource.

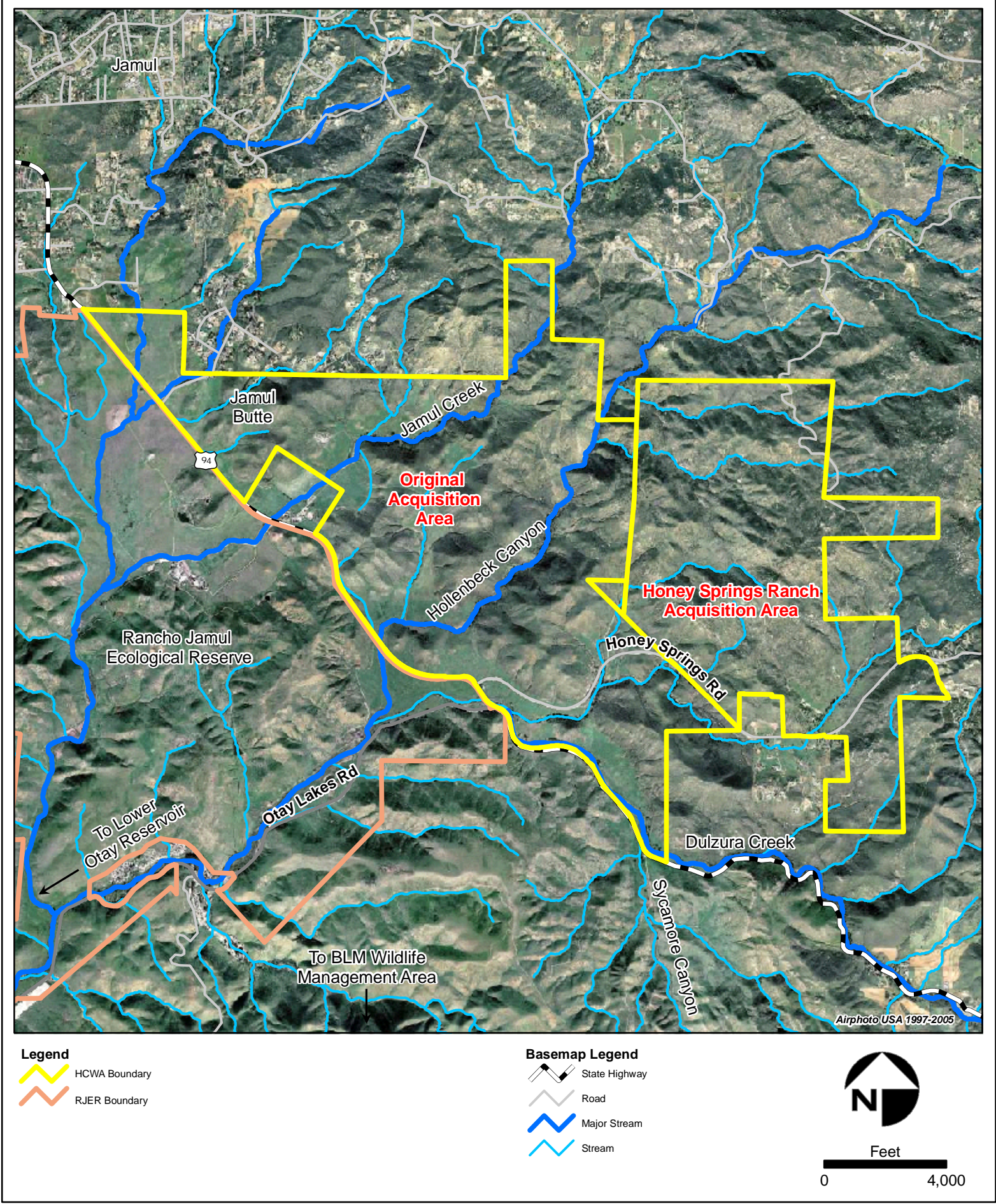
B. ACQUISITION HISTORY AND FUNDING

The 5,189-acre HCWA was acquired by the State of California (the Department) in two phases. The first phase was the original acquisition of the Lawrence Daley Ranch portion of the wildlife area and was approved by the State of California Wildlife Conservation Board (WCB) on February 23, 2001. This acquisition secured 3,210 acres of land on the western end of the site (Figure 4). Original acquisition funding sources include the Sunroad Otay Partners, the Safe Neighborhood Parks, Clean Water Act, Clean Air Act, and Coastal Protection Act (California Proposition 12, Section 5096.350 (a)(6)-NCCP), and the State General Fund, ensuring preservation of the original acquisition for conservation and public use purposes. The second phase conducted in 2003 secured the 1,979-acre Honey Springs Ranch eastern portion of the wildlife area (Figure 4). The funding source for the second phase was through a WCB grant to the State Coastal Conservancy.

The Fish and Game Commission designated the property as a wildlife area and identified area-specific regulations as recorded in Title 14 of the California Code of Regulations (CCR), Division 1, Chapter 11, Sections 550 and 551. As previously stated, the establishment of wildlife areas conserves lands that provide important habitat for wildlife and provide wildlife-dependent recreational opportunities to the public. Public use and enjoyment of the wildlife area are encouraged by the Department but must remain consistent with the primary goal of the acquisition of the land, which is protection of natural resources.

C. PURPOSE OF THIS MANAGEMENT PLAN

This LMP represents the commitment of the Department to manage the resources of the wildlife area in accordance with the laws of the State of California, incorporating the best available scientific information and professional judgment. It also incorporates the desire of the Department to coordinate and cooperate with the HCWA neighbors, other local interests, and other conservation entities that are active throughout this region.



The purpose of this LMP is to establish a set of management goals and objectives that are compatible with wildlife area management principles. By outlining appropriate natural and cultural resource management tasks and public uses on the property, the plan seeks to maximize the public's enjoyment of the wildlife area, while fulfilling all aspects of its mission. The following management guidelines are provided to clarify the purpose of this LMP.

1. The plan guides the adaptive management of habitats, species, and programs described herein to achieve the Department's mission to protect and enhance wildlife values.
2. The plan serves as a guide for appropriate public uses of the property.
3. The plan serves as a descriptive inventory of wildlife and native plant habitats that occur on or use the property.
4. The plan provides an overview of the property's operation and maintenance, and personnel requirements to implement management goals. It serves as a budget planning aid for annual regional budget preparation.
5. The plan provides a description of potential and actual environmental impacts and subsequent mitigation, which may occur during management, and contains environmental documentation to comply with state and federal statutes and regulations.

This LMP is intended to contribute to habitat management that utilizes natural processes to create a sustainable system over the long term. This ecosystem-based management approach is intended to benefit both common and sensitive species of wildlife and plants. It may also contribute to the recovery of state and federally listed species. The LMP has been developed in accordance with the Department's *Guide and Annotated Outline for Writing Land Management Plans* (CDFG 2003).

II. PROPERTY DESCRIPTION

A. GEOGRAPHICAL SETTING

Located in southwestern San Diego County between the communities of Jamul and Dulzura, HCWA is an irregularly shaped property that occupies 5,189 acres and borders on SR 94 for several miles along the southwestern edge of the property (Figures 2 and 3). Jamul Creek occurs near the northwestern portion of the property, Hollenbeck Canyon traverses the central portion of the wildlife area, and tributaries to Dulzura Creek run through the southern portion along Honey Springs Road (Figure 4). HCWA is surrounded by the Jamul Mountains to the west, McGinty Mountain and Lyon's Peak to the north, and Barber Mountain and White Mountain to the east.

1. Access to Property

The main access to the wildlife area is in the southern portion of the site, where a gravel public parking lot is located immediately north of Honey Springs Road, approximately 500 feet east of SR 94. Space for cars and horse trailers is available in this area. Although SR 94 borders the entire western boundary of the wildlife area, there is only restricted public access onto the property from this major roadway. Access into the northern portion of the wildlife area is from Rancho Jamul Drive, which traverses the northern end of the property. Limited parking along the shoulder of Rancho Jamul Drive and a small parking lot just east of SR 94, which is used for hunting dog training events, provide access into the northern portion of the property.

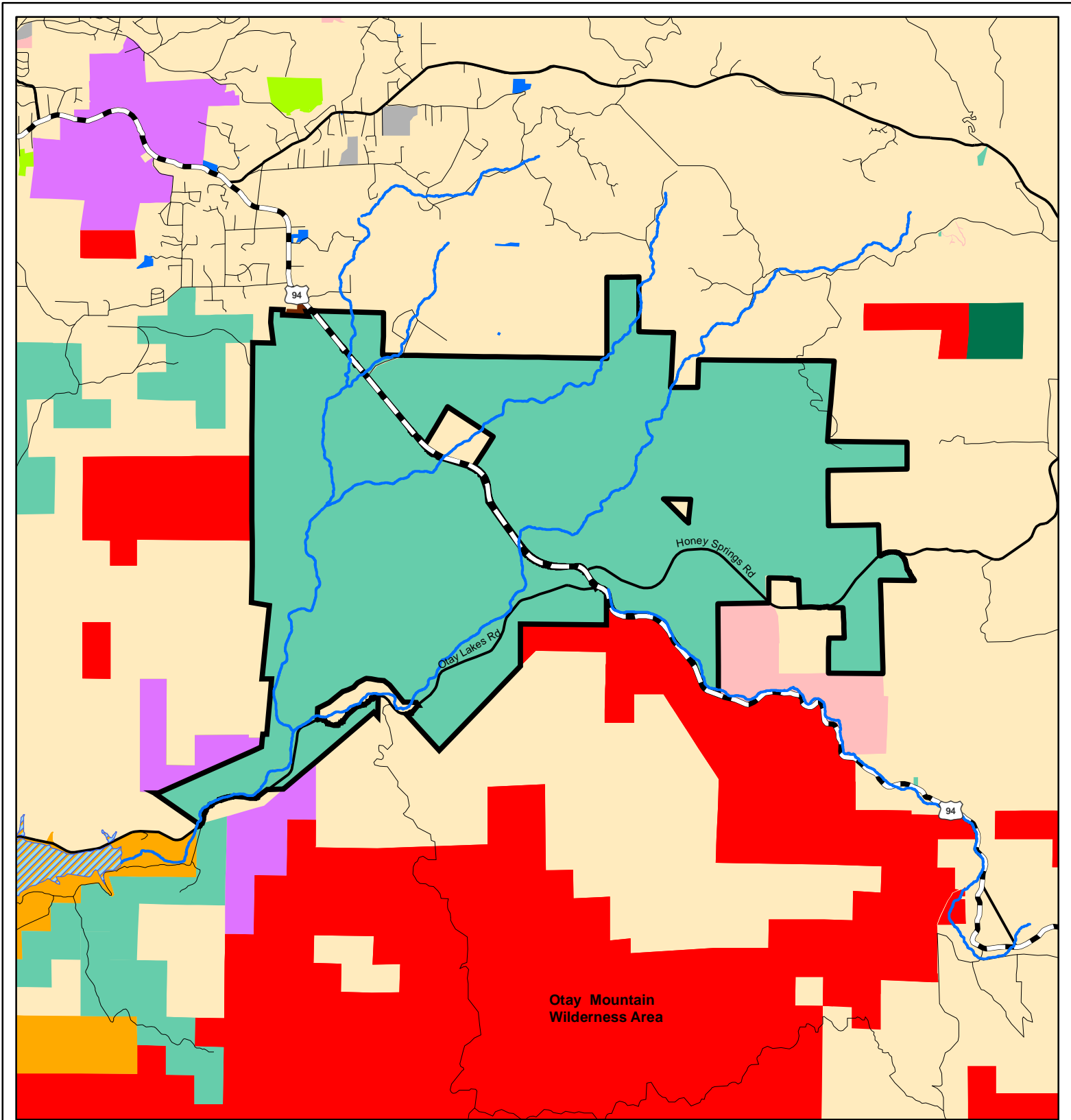
B. PROPERTY BOUNDARIES AND ADJACENT LANDS

1. Property Boundaries

HCWA is located on the Dulzura U.S. Geological Survey (USGS) 7.5-minute quadrangle topographic map and occupies all or portions of Sections 7, 16 through 21, 28 through 31, and 33 of Township 17 South, Range 01 and 02 East, and the Jamul Land Grant. The configuration of the property boundary is illustrated in Figure 2 on a USGS 100,000 scale map.

2. Adjacent Lands-Ownership and Land Use

Much of the land surrounding HCWA is undeveloped (Figure 5). Various public agencies and public land conservancies have targeted these parcels as a high priority for open space acquisition with the goal of piecing them together to form contiguous habitat linkages and

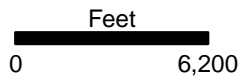


Legend

- California Dept. of Fish and Game
- Bureau of Land Management
- City of San Diego
- County
- U.S. Fish and Wildlife Service (National Wildlife Refuge)
- School Districts
- U.S. Forest Service
- Water and Sanitation Districts
- Private
- Indian Reservation

Basemap Legend

- HCWA and RJER Boundaries
- State Highway
- Major Road
- Local Road
- Stream
- Lake/Reservoir



Source: SANDAG 2005 Ownership GIS Data Layer

wildlife movement corridors. For example, RJER, acquired by the Department in several phases between 1997 and 2003, lies along the southwestern border of HCWA, west of SR 94. This property enhances the wildlife area by adding connectivity along the Jamul Creek and Dulzura Creek corridors, and by integrating additional high-quality coastal sage scrub and chaparral habitat, extensive grasslands, and additional riparian and oak woodland habitats.

The majority of other public lands in the vicinity are owned and/or managed by three other agencies in addition to the Department (Figure 5). For example, the USFWS manages several disjunct parcels of land located to the northwest of HCWA as part of the Otay-Sweetwater Unit of the San Diego National Wildlife Refuge. Immediately to the south, the BLM manages the Otay Mountain Wildlife Management Area and a Wilderness Area; these BLM areas together comprise 38,000 acres extending from the southern end of HCWA to the U.S.-Mexican border. The Cleveland National Forest, which includes 460,000 acres of U.S. Forest Service (USFS) land, is located to the east of HCWA. In addition, the cities of Chula Vista and San Diego, and the County of San Diego jointly manage the Otay River Valley Regional Park, a 3,000-acre open space park that extends approximately 11 miles along the Otay River Valley from San Diego Bay to Lower Otay Lakes Reservoir, just touching the far southwestern corner of RJER. The remainder of land in the region is mostly composed of smaller pieces of County- or City-owned property and undeveloped private lands. In addition, the rural homes of the Jamul Indian Reservation are located just north of the neighboring RJER.

3. Easements

An easement is a right held by one person or entity to make specific, limited use of land owned by another person or entity. Common easements include the right to pass across the property (right-of-way [ROW]); the right to construct and maintain a roadway across the property; the right to use a creek or river as a conduit to convey water through the property (water conveyance); or the right to place and maintain utility poles, utility trenches, water lines, or sewer lines.

Easements on HCWA include ROW access to Honey Springs Road and SR 94, granted to the County of San Diego and the California Department of Transportation (Caltrans). In addition to ROW access, the easement entitles the agencies to extend drainage structures and excavation and embankment slopes beyond the limits of the ROW where required for maintenance. San Diego Gas and Electric has also been granted an easement to access the property for maintenance of pipelines, drainage, and public utilities. Communication companies such as Pacific Bell have also been granted easements to access the property for maintenance of communication facilities.

An easement was also granted to the Otay Water District for a water pipeline (“exact location and extent of said easement is not disclosed of record”). Finally, an archaeological conservation easement was established to protect four archaeology sites (see subsection E).

C. PHYSICAL CHARACTERISTICS

1. Geology and Topography

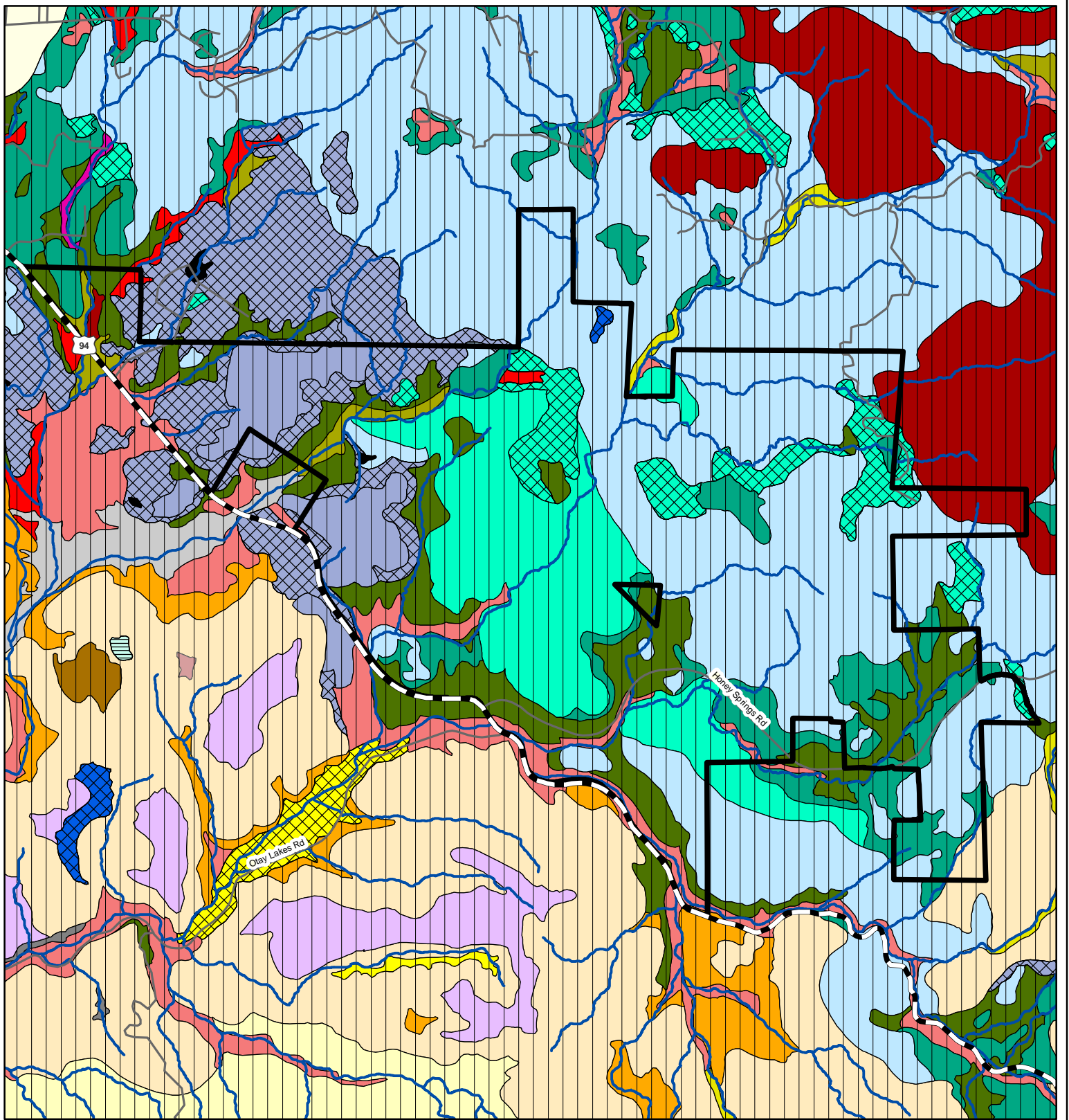
The San Ysidro Mountains to the south of HCWA and the Jamul Mountains and San Miguel Mountains to the west were at one time part of a series of volcanic islands off the coast of California. Volcanic ash and breccia from these volcanoes metamorphosed to become the fine-grained rock of the Santiago Peak Volcanic Formation. To the east of these islands, a granitic and gabbroic batholith was uplifted to form the Peninsular Range. HCWA lies near the contact of these two formations. Granitic boulders and granitic outcrops are present throughout the wildlife area.

HCWA is located where the coastal plains grade into the foothill mountains and is traversed by Jamul Creek, Hollenbeck Canyon, and Dulzura Creek, all of which flow down the watershed into Lower Otay Lake. The site has gentle to moderately steep hills and open valleys varying in elevation from 720 to 2,600 feet, and it contains a diverse mixture of vegetative communities and habitat features.

2. Soils

























Numerous soil series occur within HCWA, as depicted by Figure 6. The majority of the LMP area is composed of Cieneba soils, which characterize the eastern side of HCWA. The next largest soil cover within the HCWA is the Vista series, which is predominant in the central portion of the wildlife area. In the northwestern portion, the dominant soil series is Las Posas, with Visalia, Ramona, Greenfield, Fallbrook, and small portions of Grangeville and Cieneba surrounding Las Posas soil series.

Many of the low-lying areas within the wildlife area, either directly along the drainages or adjacent to these areas, are underlain by soils of the Ramona, Visalia, and Greenfield series. The central and upper reaches of Hollenbeck Canyon, however, as well as segments of other tributaries, are characterized by the Vista and Cieneba soil series, similar to the adjacent uplands. In the north-central portion of the wildlife area, a small island of Bosanko clay soils occur. Descriptions of the soil types present in the LMP area are provided in Table 1.




Legend





Soil Series

 Acid Igneous Rock Land	 Escondido	 Olivenhain	 Tujunga
 Anderson	 Fallbrook	 Placentia	 Unnamed Pondered
 Auld	 Friant	 Ramona	 Visalia
 Bosanko	 Grangeville	 Redding	 Vista
 Chino	 Greenfield	 Rough Broken Land	
 Cieneba	 Huerhuero	 San Miguel	
	 Las Posas	 Stony Land	

Soil Erodibility

 Slight
 Moderate
 Severe

Basemap Legend

 HCWA Boundary
 State Highway
 Road
 Stream

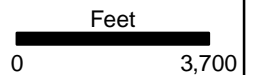


Table 1
Characteristics of Soil Types Present within the Hollenbeck Canyon Wildlife Area

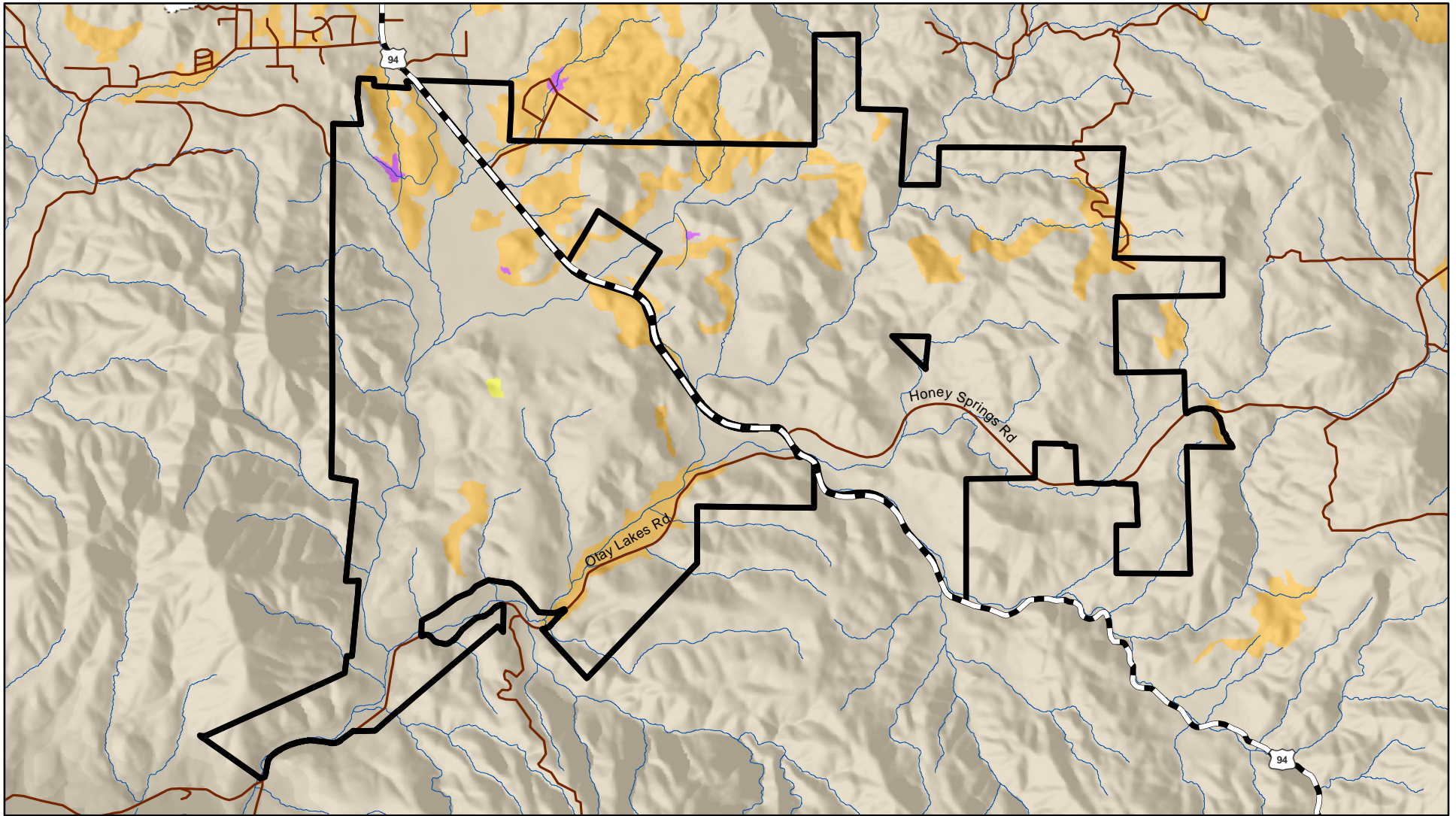
Soil Series	Structure	Slope	Additional Description	Suitability for Public Use
Acid Igneous Rock Land	Loamy, coarse sand in texture	Various (ranging from low hills to very steep mountains)	These shallow soils occur within rough terrain.	Cannot be graded easily. More valuable providing habitat for wildlife than developing paths, trails, and roads.
Bosanko	Moderately deep clays	2 to 30 percent	Well-drained soils occurring in undulating to hilly landscapes at elevations of 300 to 2,500 feet.	Used for range and agriculture (citrus, tomatoes, grain, grain hay).
Cieneba	Very shallow to shallow, coarse sandy loams	Various (rolling slopes to mountainous uplands)	Very excessively drained soils. Occur at elevations of 500 to 3,000 feet.	Suitable for creating trails and paths.
Escondido	Very fine, sandy loams	5 to 30 percent	Upland soils forming gently rolling areas. Fairly high runoff potential and severe erodibility.	Poor suitability for heavy use, good to fair suitability for paths, and fair to poor suitability for roads.
Fallbrook	Sandy loams	2 to 30 percent	Well-drained soils that occur on upland areas at elevations of 200 to 2,500 feet.	Suited to trails, paths, and moderately suitable road locations.
Friant	Rocky, fine sandy loams	9 to 70 percent	Shallow, well-drained, upland mountainous soil with a very high runoff potential and severe erodibility.	Poorly suited for paths, trails, and roads.
Grangeville	Fine sandy loams	0 to 2 percent	Formed in alluvial fans, poorly drained, fairly low runoff potential, and severe erodibility.	Moderately suitable for paths, trails, and road locations.
Greenfield	Very fine sandy loams	0 to 15 percent	Occur on alluvial fans and alluvial plains at elevations of 400 to 800 feet.	Suitable for trails and paths.
Las Posas	Stony, fine sandy loams with a clay subsoil	2 to 65 percent	These soils have moderate erodibility and high runoff potential.	Areas with slopes up to 15 percent are suitable for trails and paths; however, these soils are largely unsuitable for roads, picnic areas, or heavy use.
Ramona	Deep sandy loams with a sandy clay subsoil	0 to 30 percent	Well-drained soils associated with terraces and alluvial fans. Occur at elevations of 200 to 1,800 feet.	Suitable for trails and paths.
Visalia	Sandy loams	Unknown	Alluvial deposits, well drained, fairly low runoff potential, and severe erodibility.	Well suited to trails and paths, and moderately suitable as road locations.
Vista	Moderately deep and deep, coarse sandy loams	5 to 6 percent	Well-drained. Occur on upland areas at elevations of 300 to 500 feet.	Well suited to creating trails, paths, and roads.

Figure 7 shows the erodibility potential of the soil types described above. Most of HCWA consists of soils with a high potential for erosion; however, several areas with only a moderate potential for erosion are scattered throughout the northern half of the wildlife area. Exposure of soils from past fires (most recently, the Honey Fire of 1996), has created areas that are even more vulnerable to erosion and will remain that way until natural vegetation returns. Records kept since the early 1900s indicate the majority of the LMP area has burned several times (see Subsection D, Fire History). Only a small portion of HCWA along SR 94 has not burned at all, based on fire records.

Soils and Sensitive Species Affinities

Soils, along with climate, have long been recognized as an important factor in affecting the composition and distribution of vegetation within a region (Jenny 1980; Major 1951). Soils derived from unusual parent material such as limestones, dolomite, shales, gypsum, and serpentinite may support unique plant associations, endemic species and/or morphological and physiological modifications of plants (Kruckeberg 1986). Unusual soils, in combination with evolutionary forces such as isolation and catastrophic selection, may be an important stimulus for plant speciation (Raven 1964; Kruckeberg 1986). In southern California, unusual soil types including gabbro soils, clay soils and sandstones, are important for supporting endemic plant communities and species (Oberbauer and Vanderwier 1991). Twelve sensitive plant species and one endangered butterfly found at HCWA occur on at least seven different soils series (Table 2). The seven soils series are classified as an alfisol, entisol, inceptisol, or vertisol. A brief description of the characteristics of these soil orders and the associated sensitive species is presented below. Additional information about the sensitive species is provided in Section III, Subsection C.

Alfisols are soils that have been in place long enough for the movement and accumulation of silicate clays within the soil profile. These soils are characterized by a massive, hard surface layer and by horizons of clay accumulation that have a high saturation base. Alfisols that support sensitive plant species on the HCWA include the Fallbrook, Las Posas, and Ramona soil series. The Fallbrook soils series include soils that are well-drained sandy loams that formed in the parent material that weathered in place. Within HCWA, these soils support delicate clarkia (*Clarkia delicata*), Engelmann oak (*Quercus engelmannii*), Ramona spineflower (*Chorizanthe leptotheca*), rush-like bristle bush (*Machaeranthera juncea*), and San Diego sunflower (*Viguiera lacinata*). The Las Posas soils are also well-drained, moderately deep, stony, fine sandy loams with a clay subsoil. These soils were formed in material weathered from basic igneous rocks, and on HCWA these soils support Englemann oak, San Diego sunflower, and San Diego County



- Legend**
- Severe
 - Moderate
 - Slight
 - None

- Basemap Legend**
- HCWA and RJER Boundaries
 - State Highway
 - Road
 - Stream

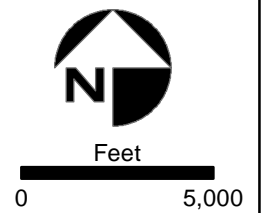


Table 2
Soils and Sensitive Species Affinities within the Hollenbeck Canyon Wildlife Area

Soil Order	Soil Series	Soil Types	Sensitive Species Occurring on HCWA [Common name (Scientific name) and # of Occurrences]													
			San Diego thormmint (<i>Acanthomintha ilicifolia</i>)	San Diego County needlegrass (<i>Achnatherum diegoense</i>)	Palmer's sagewort (<i>Artemisia palmeri</i>)	Ramona spineflower (<i>Chorizanthe leptotheca</i>)	Delicate clarkia (<i>Clarkia delicata</i>)	Small-flowered morning glory (<i>Convolvulus simulans</i>)	Snake cholla (<i>Cylindropuntia californica</i> var. <i>californica</i>)	Palmer's grappling hook (<i>Harpagonella palmeri</i>)	Southwestern spiny rush (<i>Juncus acutus</i> var. <i>sphaerocarpus</i>)	Rush-like bristle bush (<i>Machaeranthera juncea</i>)	Engelmann oak (<i>Quercus engelmannii</i>)	San Diego sunflower (<i>Viguiera lactinata</i>)	Quino checkerspot butterfly (<i>Euphydryas editha quino</i>)	
Alfisols	Fallbrook	FaD2, FaE2, FeE2, FvD, FvE				4	2					1	3	1		
	Las Posas	LrG		3									3	1		
	Ramona	RaB, RaC, RaC2, RaD2				1	2			2	4		6	8		
Entisols	Acid Igneous Rock Land	AcG											1			
Inceptisols	Vista	VsE, VvE, VvG			2	1	1				1			17	1	
Vertisols	Bosanko Stony Clay	BtC	6						1					2		20
	Cieneba	CmrG		3	1	3	3				3	2	6	27	1	

needlegrass (*Achnatherum diegoense*). The Ramona soils are well-drained, very deep sandy loams that have a sandy clay loam subsoil. These soils formed in granitic alluvium and are often found on alluvial terraces and fans. Within HCWA, these soils support delicate clarkia, Engelmann oak, Palmer's grappling hook (*Harpagonella palmeri*), Ramona spineflower, rush-like bristle bush, and snake cholla (*Cylindropuntia californica* var. *californica*).

Entisols are young soils that show little, if any alteration of the parent material. The only entisol soil on HCWA is the Acid Igneous Rock Land. The granitic rock outcroppings found throughout HCWA are all Acid Igneous Rock Land soil. Only Engelmann oak was found on this soil series.

Inceptisols are soils that have been in place long enough to show slight alteration of the parent material. The original rock structure has been destroyed, but little, if any movement and accumulation of silicate clays has taken place within the soil profile. The only inceptisol soils found on HCWA are the Vista soils series, which are well-drained, moderately deep coarse sand loams that are derived from granodiorite or quartz diorite. Within HCWA these soils support delicate clarkia, Englemann oak, Palmer's grappling hook, Ramona spineflower, Palmer's sagewort (*Artemisia palmeri*), and San Diego sunflower.

Vertisols are clayey soils that are more than 20 inches deep and in most years crack to a depth of at least 20 inches. These soils also have other characteristics that result from the shrinking and swelling that occurs seasonally following the winter and spring rains. The vertisol soils on HCWA that support sensitive plant species include the Bosanko Stony Clay and the Cieneba soils. The characteristics of these heavy clay soils are strongly affiliated with the distribution of certain sensitive species, especially the Bosanko Stony Clay soil. The clay soil endemic species are adapted to these types of soils and the dynamic changes they go through each season, while many of the common native species found in the coastal sage scrub and chaparral are excluded from these environments. Because of this, these areas are often open grasslands that are dominated by annual wildflowers and geophytes. One of the annual wildflower species associated with these clay soil "lenses" and grasslands is the dot-seed plantain (*Plantago erecta*), which is the primary host plant for the Quino checkerspot butterfly. Many of the common nectar sources for the adult Quino butterflies are also associated with these clay soil areas, including goldfields (*Lasthenia californica*) and ground pink (*Linanthus dianthiflorus*). In addition, the secondary host plants for Quino, including owl's clover (*Castilleja exerta*), and bird's beak (*Cordylanthus rigidus*), are also commonly associated with these open habitat areas (Mattoni et al. 1997). On HCWA, Quino and both San Diego thornmint (*Acanthomintha ilicifolia*) and small-flowered morning-glory (*Convolvulus simulans*) occur on the Bosanko Stony Clay soil type, while the delicate clarkia, Englemann oak, Palmer's grappling hook, Ramona spineflower,

rush-like bristle bush, Palmer's sagewort, southwestern spiny rush (*Juncus acutus* ssp. *leopoldii*), and San Diego County needlegrass occur on the Cieneba soil series.

3. Climate

San Diego County experiences a Mediterranean climate, which is characterized by wet winters and dry summers. This is largely due to a semipermanent high-pressure zone that sits over the Pacific Ocean. As it moves northward in the summer, storm tracks are deflected to the north, resulting in little precipitation in the southern part of the state. In the winter, the high-pressure zone weakens and moves southward, allowing storms to move into the area.

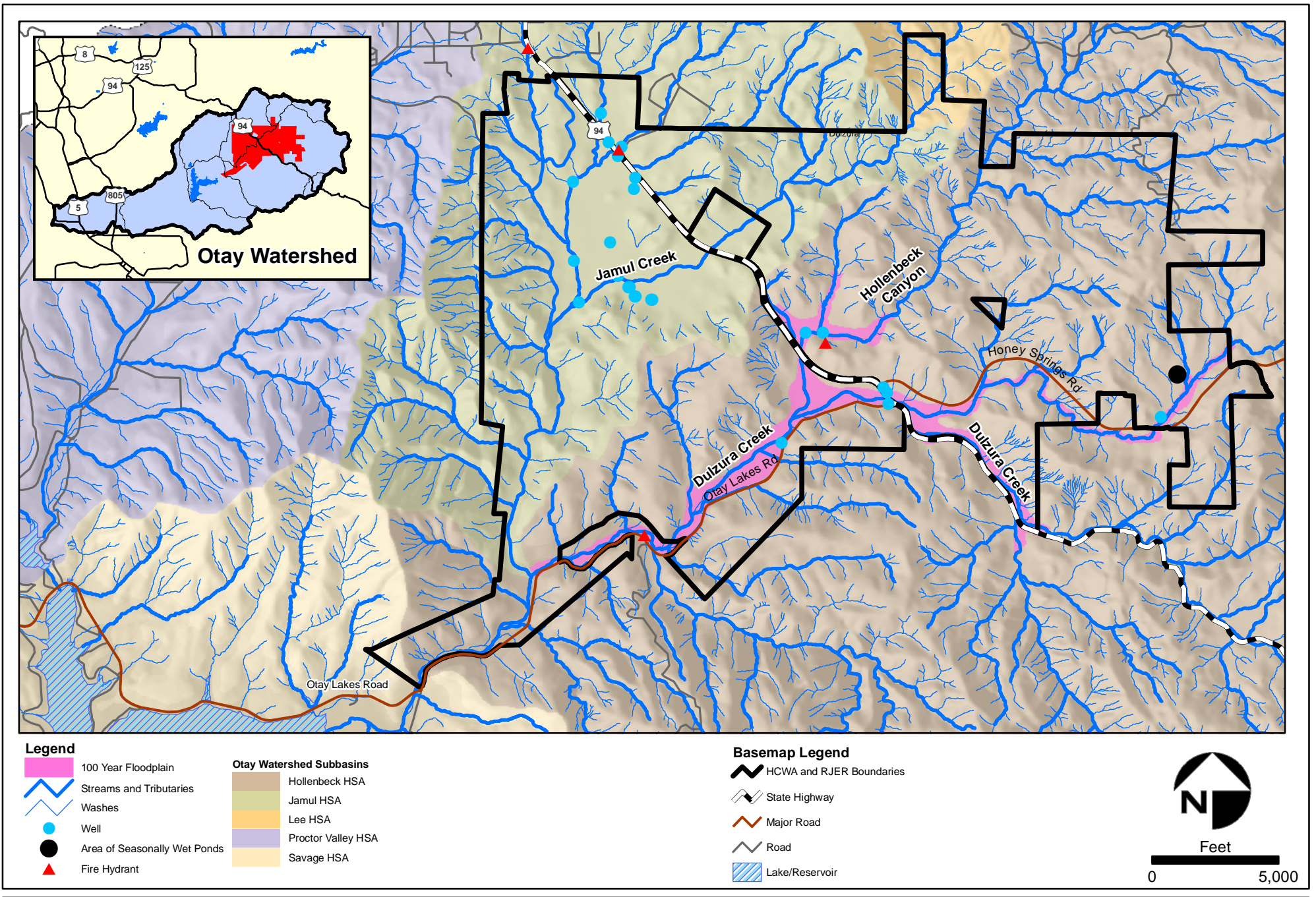
Coastal San Diego County tends to have small daily and seasonal temperature ranges and a higher relative humidity, whereas inland areas are less affected by maritime influences and tend to be drier and have more extreme temperature ranges. HCWA is located approximately 20 miles inland and average temperatures vary from 42° F (January low) to 87° F (August high). Average monthly precipitation is low year-round, ranging from 0.1 inch in the summer months (June – August) to approximately 2.8 inches during the winter (January and February).

One of the most influential weather phenomena in the region is the Santa Ana winds. Usually beginning in the fall and peaking in December, hot, dry winds originating in the Great Basin blow towards the coast. The winds can be quite strong, with gusts up to 100 miles per hour. This scenario, involving strong winds, rapidly increasing temperature, and extremely low relative humidity (<25 percent), is prone to creating an environment highly conducive to rapidly spreading wildfires. The wildfire dangers increase exponentially if the region has been experiencing a drought.

4. Hydrology

Natural Drainages

HCWA lies within the 93,000-acre Otay River Watershed and is traversed or bordered by three major drainages and numerous tributaries, which flow towards the south and southeast, eventually merging on the adjacent RJER and flowing into the Lower Otay Reservoir (Figure 8). The northernmost drainage, Jamul Creek, is a seasonal tributary that drains the northern portion of the wildlife area and has a contributing drainage basin (the Jamul subbasin) of approximately 7,795 acres. Two branches of Jamul Creek exit HCWA and enter into RJER through culverts



underneath SR 94. Within the wildlife area, the northeasternmost branch of Jamul Creek is within the Lee subbasin, which has a contributing drainage basin of approximately 2,075 acres; this subbasin is located predominantly north of HCWA (Figure 8).

The central drainage within the wildlife area, Hollenbeck Canyon, drains the central hillsides and is part of the Hollenbeck subbasin, a drainage basin of approximately 31,713 acres. Within the wildlife area, two tributaries converge with the main drainage of Hollenbeck Canyon in a low-lying area immediately east of SR 94, enter into RJER through a culvert underneath SR 94, and then converge with Dulzura Creek within the adjacent RJER.

The third major drainage of HCWA, Dulzura Creek, is located southeast of Hollenbeck Canyon and drains the southern portion of the wildlife area. This tributary is also within the Hollenbeck subbasin and thus has a contributing drainage basin of approximately 31,713 acres. In the southeast portion of the wildlife area the main branch of Dulzura Creek flows just north of Honey Springs Road; however, this drainage is crossed by this roadway approximately 1,200 feet east of SR 94, where Dulzura Creek then flows along the south side of Honey Springs Road before entering RJER through a culvert underneath the highway. This main branch of Dulzura Creek serves as a conduit for transporting water from Barrett Lake to Lower Otay Reservoir, both of which are operated by the City of San Diego. Mean daily flow data, recorded between 1940 and 1997 by a stream gauge located just below the confluence of Jamul and Dulzura creeks, indicate that the flow rate ranges seasonally from approximately 5 cubic feet per second in October to 68 cubic feet per second in March (Wildlands, Inc. 1999).

Past uses (e.g., farming and ranching, including livestock grazing) have left segments of the tributaries within HCWA disturbed and deeply incised, thereby reducing the heterogeneity of the riparian habitat, reducing native species diversity, and increasing the number of non-native plants along portions of the riparian corridors. Minimal restoration and enhancement efforts have been conducted within HCWA; however, some work has been done by the Department, including the use of bundles of mulefat (*Baccharis salicifolia*) to secure incised creek banks and minimize additional erosion in select areas. On the adjacent RJER, however, a large-scale riparian restoration has been conducted to establish overflow channels, restore native vegetative cover, and increase riparian structural diversity. These efforts will enhance breeding and foraging opportunities for native fauna in the vicinity of HCWA that are dependent on multiple-level riparian habitat.

Artificial Water Bodies

A few seasonally wet ponds are located at the eastern portion of the property, near the old residential homes just north of Honey Springs Road (Figure 8). Historically, these ponds may have held water for agricultural practices to catch, store, and utilize runoff for use by domestic animals.

Artificial Wells

Several groundwater wells have been constructed for agricultural purposes and other past uses within HCWA and the adjacent RJER (Figure 8). There are seven wells within HCWA, although not all are functional at present. All of the functional wells can be used to draw water for wildlife management needs; only one well provides potable water. Aside from the on-site wells, several others are located along SR 94.

Fire Hydrants

Two fire hydrants are located within the wildlife area; one is located near SR 94 in the northern portion of the property near existing wells, and the other is located near an existing well in the southern end of Hollenbeck Canyon where an unnamed tributary enters the canyon from the north (Figure 8). A third fire hydrant is located along SR 94 just outside of the northern boundary of the wildlife area (Figure 8).

Water Rights

The following information about water rights pertaining to HCWA was obtained by reviewing title documents, CCR Title 23, and through discussions with the Department's Lands and Facilities Branch Water Coordinator:

- **Riparian rights.** Riparian rights are held by the owner of the land abutting a stream. As such, the Department holds riparian rights to all creeks within HCWA. Riparian landowners may use natural flows directly for "reasonable, beneficial purposes" on riparian lands without applying for a permit (CCR Title 23).
- **Water conveyance.** The City of San Diego holds the ROW to use Dulzura Creek as a conduit to convey water through the property.

D. FIRE HISTORY

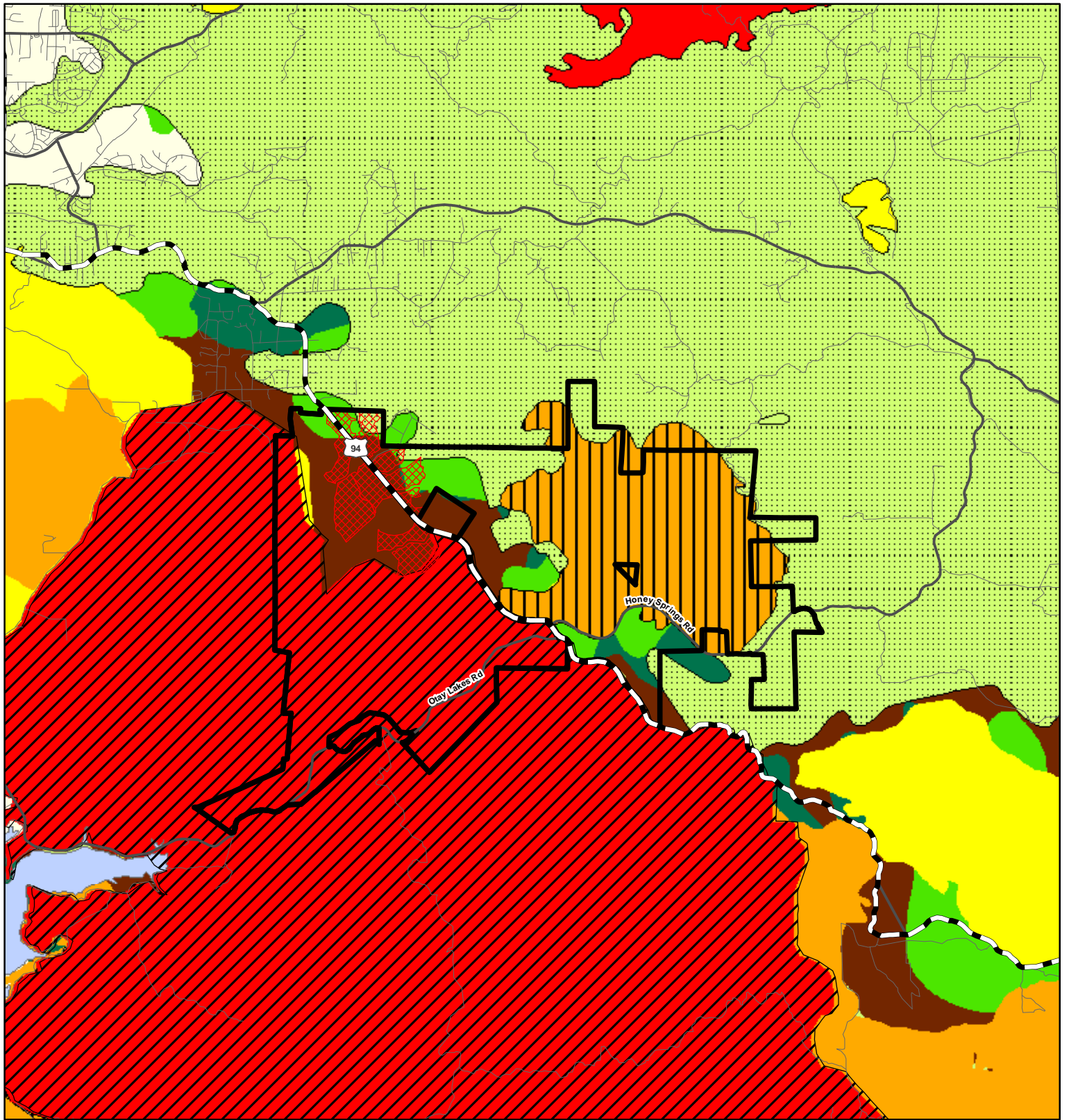
1. Wildfires

Wildfires, both natural and human-caused, have historically swept through HCWA and surrounding areas fueled by the native scrublands and native and non-native grasslands that characterize the landscape. Wildfire data for the wildlife area and surrounding vicinity were obtained through the following sources:

- California Department of Forestry and Fire Protection (CDF) burn history database (CDF 2004), which covers the period from 1910 to 2004 in the vicinity of the wildlife area.
- 2003 Southern California Fires, Burned Area Emergency Stabilization and Rehabilitation Plan, prepared by the Interagency Burned Area Emergency Response (BAER) team; this report provides recommendations for all BLM lands, and USFWS and Bureau of Indian Affairs administered lands that were affected by the October 2003 fires. Various fire maps, including burn severity mapping, are also available; these maps include both federal and non-federal lands.
- *Post-fire Survey and Recommendations for Four San Diego County Department of Fish and Game Ecological Reserves* (Bainbridge 2004)

The CDF database includes boundaries of individual fire events, acreage burned, and the year of the event. Generally, fires smaller than 100 acres are not mapped. The CDF fire data were used to prepare fire history and fire frequency maps for HCWA and the surrounding landscape (Figures 9 and 10). The fire history map illustrates the most recent fire (within a decade, or group of years) at a particular location. The fire frequency map illustrates the number of fires that have occurred at that location since 1910.

Two important factors to consider when evaluating the effect of fire on vegetation recovery are season of burn and the intensity of the fire. The CDF database includes the month of ignition for most fires; however, information about fire intensity, if available, must be obtained from other sources. Mapping prepared by the BAER team for the 2003 Otay Fire does include information about the varying intensity of that fire within its perimeter. However, burn severity data for other fires that have burned within HCWA or on neighboring areas were not available. An additional factor that can significantly affect vegetation recovery is the time interval between fires. For example, the Diegan coastal sage scrub vegetation community burns easily and can

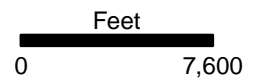


Legend

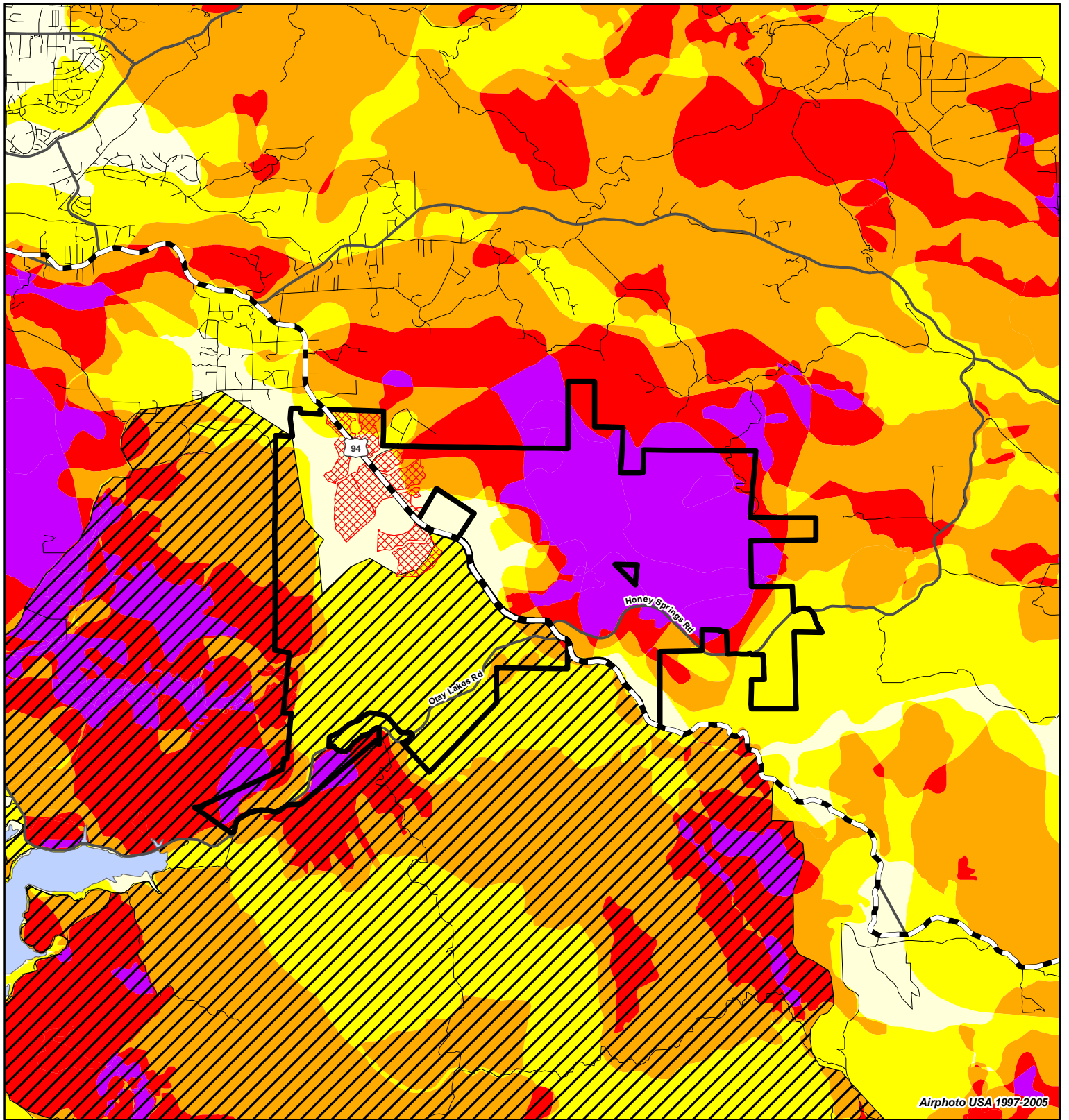
	Never Burned		1970 Laguna Fire
	1910 - 1926		1996 Honey Fire
	1940 - 1958		2003 Otay Fire
	1969 - 1979		Recent Prescribed Burn
	1980 - 1989		
	1991 - 1999		
	2000 - 2004		

Basemap Legend








	HCWA and RJER Boundaries
	State Highway
	Major Road
	Road
	Lake/Reservoir








Source: California Dept. of Forestry and Fire Protection 2004.

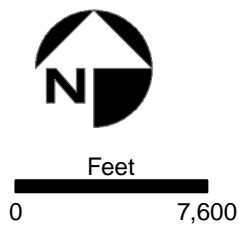


Legend

 2003 Otay Fire
 Recent Prescribed Burns
Burn Frequency
 No Record of Burn
 Burned Once
 Burned Twice
 Burned Three Times
 Burned More than Three Times

Basemap Legend

 HCWA and RJER Boundaries
 State Highway
 Major Road
 Road
 Lake/Reservoir



Source: U. S. Forest Service 2004.

reburn 2 to 3 years following a fire event, primarily due to invasion by highly flammable non-native grasses that establish post-burn (BAER 2003). The native species that characterize this vegetation community are fire-adapted and quickly regenerate from seed post-burn. However, fires that occur less than 10 years apart in Diegan coastal sage scrub can reduce the seed bank of native shrub species. When this occurs, invasive grasses often establish in areas once occupied by the native species, which then provide flashy fuels that will readily burn in subsequent fires; this leads to further degradation of the native habitat. If the fire frequency increases within this degraded scrub habitat, conversion to a non-native grassland habitat that includes many non-native broadleaf species (e.g., mustards) will occur (BAER 2003). Once habitat conversion occurs, the non-native species continue to outcompete any native species that attempt to reestablish.

Information about fire size, season of burn, severity, and interval since previous fires is discussed below for the primary wildfires that have affected HCWA and the surrounding vicinity. Recent large-scale fires that affected neighboring lands but did not burn HCWA are also described, since the condition of fuels on adjacent lands must be considered when assessing the fire risk from surrounding areas.

Otay Fire

Although HCWA did not burn during the 2003 Otay Fire, the majority of RJER immediately adjacent to HCWA did burn during this 45,971-acre firestorm, affecting 3,710 acres (79 percent) of the neighboring reserve. The Otay Fire also burned all areas within approximately 1.5 miles to the west of RJER, and all areas within approximately 3 miles or farther to the south of RJER (Figure 9). Within the southern portion of RJER, the Otay Fire largely burned an area that had not burned prior to this 2003 fire event (based on records). However, areas along the western boundary and southern tip of RJER had burned once, twice, three times, or more than three times prior to the 2003 Otay Fire (Figure 10). The most recent fires that preceded the Otay Fire on lands west of SR 94 occurred in 1968, 1978, 1979, 1980, and 1984.

Honey Fire

Outside of the Otay Fire perimeter, the most recent wildfire in the area was the 1996 Honey Fire that burned 3,387 acres, including 2,935 acres within HCWA (Figure 9). The majority of the area that burned during the Honey Fire had burned three or more times prior to 1996 (Figure 10). The most recent fires that preceded the Honey Fire within HCWA occurred in 1926, 1943, and

1970; therefore, the age of the vegetation that burned in this portion of the wildlife area was between 26 and 70 years.

Most of the area that burned during the Honey Fire supported Diegan coastal sage scrub habitat. The response of this vegetation community to fire is described above. The northern portion of the Honey Fire within HCWA, however, is characterized by chaparral habitat. Chaparral is also a fire-adapted vegetation community and the characteristic species quickly regenerate from seed or by resprouting from underground burls post-burn (Keeley 2000). There is much debate as to what constitutes a “natural” fire interval for chaparral; estimates range from 20 to 100 years (Keeley et al. 1989; Minnich 1995; Conrad and Weise 1998; Beyers and Wakeman 2000). Based on field observations during 2004, the chaparral habitat and much of the Diegan coastal sage scrub that were burned during the Honey Fire are recovering well. However, some areas of Diegan coastal sage scrub are relatively disturbed and are characterized by substantial cover of non-native grasses.

Laguna Fire

A large-scale blaze that affected 174,162 acres immediately east of SR 94, including 1,115 acres within HCWA, was the 1970 Laguna Fire (Figure 9). When this fire occurred 36 years ago, all areas within many miles north and east of HCWA burned. Aside from the Honey Fire described above, and other relatively small fires that have occurred in the vicinity, most of the area affected by the Laguna Fire has not burned since the 1970s (Figure 9).

Information about the three major fires that burned within or immediately adjacent to HCWA is summarized in Table 3.

Table 3
Large-Scale Fires within or adjacent to the Hollenbeck Canyon Wildlife Area

Name	Month and Year	Acres	Notes
Laguna Fire	October 1970	174,162	Burned 1,115 acres (21 percent) within HCWA, and the majority of the landscape east of SR 94.
Honey Fire	October 1996	3,387	Burned 2,935 acres (56 percent) within HCWA.
Otay Fire	October 2003	45,971	Did not burn HCWA, but burned 3,710 acres (79 percent) within adjacent RJER and much of the neighboring lands to the southeast. Fire analysis indicates that burn severity was predominantly low.

Additional Fire History

Aside from the Honey Fire that burned up to SR 94 from the east, and the Otay Fire that burned up to SR 94 from the west, the SR 94 roadway corridor in the vicinity of HCWA is predominantly flanked by land that either has no record of wildfire or has not burned since the 1940s. The general lack of fire in this area since fire records have been maintained is likely due to fire suppression around the ranch facilities and the agricultural fields, and active fuel management along the SR 94 road corridor.

2. Prescribed Fires

Controlled burns have been conducted along the SR 94 and Honey Springs Road corridors to create fuel breaks to prevent fires from spreading from ignition sources along these roads. These ignition sources may include cigarettes, matches, or car fires. During May 2004, a controlled burn was conducted by the CDF, USFWS, and the County Rural Fire Department along approximately 2 miles of the SR 94 corridor and 1 mile of Honey Springs Road. The objective was to reduce the flashy fuels within 5 to 30 feet of these roadways within both HCWA and RJER, thereby reducing the risk of another fire in the area too soon after the Otay Fire. This controlled burning was designed to remain 100 feet outside of the drainages that cross these roadways.

Other than the roadside burning described above, since acquisition of HCWA, only one 205-acre prescribed burn has been conducted by the Department within the wildlife area. The prescribed burn area depicted in Figures 9 and 10 within HCWA coincides with a hunting dog training area where the burn was conducted to control weeds.

E. CULTURAL FEATURES

Cultural features include resources of architectural, historical, archaeological, and spiritual value. The following definitions, adapted from the terms defined by Hector (2002), are used to describe the cultural resources within the project area.

- **Habitation** - site containing evidence of long-term use and occupation by native people, also called a village site
- **Sacred Site** - location or resource important to native people

-
- **Rock Art** - art that consists of petroglyphs (art pecked into the surface of rocks) or pictographs (art painted on rocks)
 - **Temporary Camp** - campsite used by native people during certain times of the year to collect or process specific resources, such as acorns
 - **Bedrock milling** - granite or other bedrock outcrops used for grinding and processing plant and animal foods; types include slicks (flat, polished surfaces), basins (shallow, oval surfaces), and mortars (deep, circular holes in the rock)
 - **Quarry** - an area where native people removed raw materials that they could then form into tools; typical remnants would include flakes and shatter from the removal process
 - **Lithic Scatter** - refuse from the manufacture of stone tools by native people; typically a lithic scatter includes flaked stone and shatter from flint knapping (the manufacture of stone tools by striking the rock with another rock or antler to produce sharp edges)
 - **Isolate** – three or less artifacts without any other cultural objects nearby
 - **Ditches and Ponds** - historic water control features that may or may not still be in use
 - **Historic Foundation, Adobe, etc.** - any feature made between 1769 and the present (although a structure generally has to be more than 50 years old to be considered historic)
 - **Reservoir** - a historic feature that may or may not still contain water; these could be earthen or concrete
 - **Structure Location** - mapped location of a structure or building; there may be no observable remains on the surface of the ground

1. **Prehistory and Early History**

Radiocarbon dating indicates that human settlement in southern California occurred at least 10,000 to 12,000 years ago. These early inhabitants were hunter-gatherers who lived in small bands and traveled seasonally between the coast and inland areas to hunt large game, gather shellfish, and process plant materials. This period is often referred to as the Paleoindian period represented locally by the San Dieguito complex. In San Diego County, the earlier San Dieguito complex was followed by the Archaic period La Jolla complex, which more heavily emphasized processed plant foods. The Archaic period is differentiated from the earlier Paleoindian period

by a shift to a more generalized economy and an increased focus on the use of grinding and seed technology. Large bifaces, manos and portable metates, and core tools are characteristic of this period. During the Late Prehistoric period, around 2,000 years ago, Yuman-speaking people from the eastern Colorado River region began migrating into southern California. This period is categorized by smaller projectile points, the replacement of flexed inhumation with cremation, the introduction of ceramics, and an emphasis on inland plant food collection and processing such as acorns (True 1966).

The Kumeyaay (previously referred to as Diegueño) who inhabited the southern region of San Diego County, western and central Imperial County, and northern Baja California are the direct descendants of these early Yuman hunter-gatherers. Their territory extends from Agua Hedionda Lagoon south into Baja California and east to the Sand Hills of Imperial County. This territory includes marine, foothill, mountain, and desert environments. The material culture of the Kumeyaay includes ceramics for cooking and storage vessels; woven baskets; flaked lithic and ground stone tools; arrow shaft straighteners; and stone, bone, and shell ornaments.

Kumeyaay culture and society remained relatively stable until the introduction of the mission system during the 18th century. The founding of the mission and presidio of San Diego in 1769 drastically changed the lifestyle and culture of the Kumeyaay, as many were forcibly removed from their land and required to assimilate into the Spanish culture. The Kumeyaay employed many strategies to resist their new lifeways, such as fleeing into the mountains, fighting back, and burning Spanish settlements (Hector 2002). However, by the 1820s, the Kumeyaay of Jamul had all been removed to the mission (de Barros et al. 1998).

2. Hollenbeck Canyon Wildlife Area

In 1831, the Jamul Valley, consisting of approximately 9,000 acres including present-day HCWA and RJER, was granted to Pio Pico (former governor of California) as Rancho Jamul (de Barros et al. 1998). Pico built an adobe house on the property and stocked the ranch with livestock. Colonel Henry S. Burton and his family occupied the land after Pio Pico, in the mid-1850s. However, the Burton family lost their title to Rancho Jamul at the end of the decade and began an intense court battle (that lasted almost 40 years) to regain its possession.

During the 1860s, several farmers began to settle on Rancho Jamul believing that it was government land available for homesteading (since the land was still under litigation). During the late 1890s, John D. Spreckels, San Diego entrepreneur and sugar fortune heir, gained control of the land and formed the Southern California Mountain Water Company. This venture helped

capture rainfall from the watersheds of southern San Diego County's backcountry with the construction of Morena, Barrett, and Otay dams. In July 1916, Spreckels sold the property to former San Diego Mayor Louis J. Wilde, who hoped to convert it into a wild west dude ranch and movie studio. However, these plans did not materialize, and Wilde planted Turkish tobaccos on the property instead.

In 1929, George R. Daley bought the property and turned it into a cattle ranch (de Barros et al. 1998). Lawrence Daley inherited the eastern portion of Rancho Jamul from his uncle and continued the ranching and agricultural business. The western portion of the George Daley property was inherited by Donald Daley, brother of Lawrence. In May 2001, the Department acquired the major portion of HCWA and established it as a wildlife area. Lawrence and Barbara Daley maintained ownership of a 119-acre area on the west side of HCWA, immediately east of SR 94.

The former Honey Springs area was not settled until after the Civil War. In 1880, D.E. Dowling, a beekeeper, became the first historic settler on the property (Chace et al. 1980). Other settlers of the area during the 1890s included the Loves, James Murphy, and "Miss Tyson," who taught at the Honey Springs School located on Rancho Jamul. However, most tenants did not stay long because of persistent droughts. In more recent times, the property was maintained as a ranch where cattle ranged in the nearby hills. Barbed-wire fences, feeding troughs, and water basins are still found on the property as a testament of the ranching period. Three houses of various 20th century frame styles and a modern metal-covered barn were reported for the property in 1980 (Chace et al. 1980). Next to these houses stood a series of corrals most likely used for sheep or goats. Currently, two of the houses, one built in the 1920s and the other in the 1930s, remain on the property and are in disrepair; the third house (built in the 1970s) was demolished by the Department (Dillingham, personal communication 2006).

3. Previous Investigations

At least 11 cultural resource investigations have been conducted within the limits of HCWA. Nine of these studies were conducted by Caltrans for a SR 94 improvement project (see Hector 2002:12 for summary). Eight of these Caltrans studies consisted of archaeological surveys within the road ROW; however, some of the investigated sites extended into the wildlife area. Cultural resources within and immediately adjacent to HCWA identified by Caltrans included a human cremation, a boulder with rock art (pictographs), and a large habitation area containing several surface artifacts. In the ninth study, Caltrans evaluated whether the Daley Ranch compound was architecturally significant. Fisher (1997) found that the group of buildings and

structures was not eligible for listing in the National Register of Historic Places or the California Register of Historical Resources.

The largest survey was conducted in December 1979 and January 1980, on the property formerly known as Honey Springs Ranch. Several sites were recorded near the eastern boundaries of the wildlife area. The survey recorded 16 sites and a group of isolated finds on the Honey Springs property (Chace et al. 1980).

Hector conducted surveys in May and June of 2002 to inventory cultural resources within select areas identified by the Department for potential future site improvements or access (Hector 2002). Thirteen previously unrecorded archaeological sites were found by the survey team. In addition to the survey, Hector included an Archaeology Management Plan for the HCWA (2002). This document is on file with the Department.

An archaeological conservation easement was signed in 1983 that included sites CA-SDI-189, -7447, -7448, and -7449 (Table 4). According to this easement, the Department would be required to address these sites in a management plan. In addition, the Department would have to ensure that these sites were not disturbed and that no cattle grazing would occur in these areas (Chace et al. 1980).

Table 4
Sites within the Archaeological Conservation Easement

Site Number(s)	Description
CA-SDI-189 (P-37-000189)	Habitation site – bedrock milling features, lithic materials, stone tools, pottery sherds, animal bones, shell fragments, and a white majolica shard; settled from prehistoric to historic period
CA-SDI-7447 (P-37-007447)	Temporary camp – bedrock milling features and archaeological materials
CA-SDI-7448 (P-37-007448)	Temporary camp – bedrock milling features and archaeological materials Historic structures – corral, watering trough, and a historic refuse scatter
CA-SDI-7449 (P-37-007449)	Temporary camp – bedrock milling features, lithic materials, and stone tools

Approximately 2,997 acres of HCWA has not been surveyed for cultural resources, including the majority of the Original Acquisition Area (Figure 4).

4. Results of Cultural Resources Investigations

Prehistoric Period Resources

Based on the aforementioned surveys, there are a total of 43 cultural resources recorded within HCWA that include a prehistoric component (Appendix A). Of these cultural resources, there are 37 sites and 6 isolated finds (Appendix A). The site types are 8 habitation sites, 7 temporary camps, 5 lithic scatters, and 17 bedrock milling sites. The six isolated finds consist of flakes, manos, ceramics, and projectile points.

In addition, there are seven prehistoric resources immediately adjacent to HCWA outside the wildlife area boundaries. They consist of one habitation site, four temporary camps, one lithic scatter, and one bedrock milling site.

Historic Period Resources

Based on the aforementioned surveys, there are nine cultural resources within HCWA that include a historic component (see Appendix A). They include historic foundations, a historic sign, historic trash scatters, historic structures, and two home sites. They are described as late 19th to early 20th century resources of early settlers. Information about the historic structures is summarized in Table 5.

Table 5
Historic Structures within the Hollenbeck Canyon Wildlife Area

Structure	Dimensions	Findings
Historic Foundation	unknown	Clusters of granite field stone, which were stacked on the bedrock
Historic Structures	unknown	Corral, watering trough, and historic trash scatter; no evidence of prior buildings
Historic Sign	3 m x 7 m	Gasoline Curve – painted advertisement on vertical rock face
Historic Foundation	20 m x 20 m	Subterranean excavation lined with poorly mortared field stone and bricks and another brick feature
Historic Home Site	unknown	Lone eucalyptus and historic trash; no evidence of prior buildings or structures
Rock Circle Homestead	unknown	Dirt floor (8 ft. x 15 ft.) held in place by a stone foundation, dirt road, and circular structure of stacked rock (perhaps a corral for goats or sheep)
Board-and-Batten House	unknown	House with corrugated iron roof, electric meter box, and plumbing; trash scatter around the building

Sacred Lands

A search of the Sacred Lands files held by the California Native American Heritage Commission identified sacred lands within HCWA. No details of the nature of the resource were provided. A contact was given who may provide information about the resource.

5. Cultural Resource Status Recommendations

All resources identified by Hector (2002) were assigned a Treatment Category (Table 6). Hector employed the use of Treatment Categories as an alternative to ranking cultural resources by relative importance, in an effort to remove the subjectivity from site management. Her Treatment Categories were as follows:

- **Category 1** treatments are for resources that meet the eligibility criteria for inclusion in the National Register of Historic Places, or have significance under the California Environmental Quality Act (CEQA). The resources have integrity and are at risk for vandalism and disturbance.
- **Category 2** treatments are for resources that may be significant as defined by CEQA but have reduced potential for damage due to topographic isolation, inaccessibility, or limited surface artifacts.
- **Category 3** treatments are for resources that most likely do not meet National Register eligibility criteria (although a historic building or site located at an interpretive center may be an exception) and may or may not be significant as defined by CEQA.
- **Category 4** treatments are for resources that do not require any additional consideration. The category includes isolated artifacts or objects and sites where a data recovery program has been completed.

Table 6
Treatment Category Determinations by Hector (2002) for
Resources within the Hollenbeck Canyon Wildlife Area

	Prehistoric Resource	Historic Resource
Category 1	2	
Category 2	9	2
Category 3	17	2
Category 4	7	1

Seven prehistoric resources, three historic resources, and one multi-component resource were not identified by Hector in 2002.

Hector (2002) identified the top priority of cultural resource management within the wildlife area as the protection of CA-SDI-7441, -9273, -9689, -14,439, and -14,443. These sites should not be accessible nor should any plans be made to develop or improve access to these locations. Revegetation programs should be implemented to hide CA-SDI-16,270, -16,271, -16, 272, and -16,273. In addition, corrals and split-wood fences located on Jamul Creek should be protected and preserved since they provide context to the ranching that existed there for so many years.

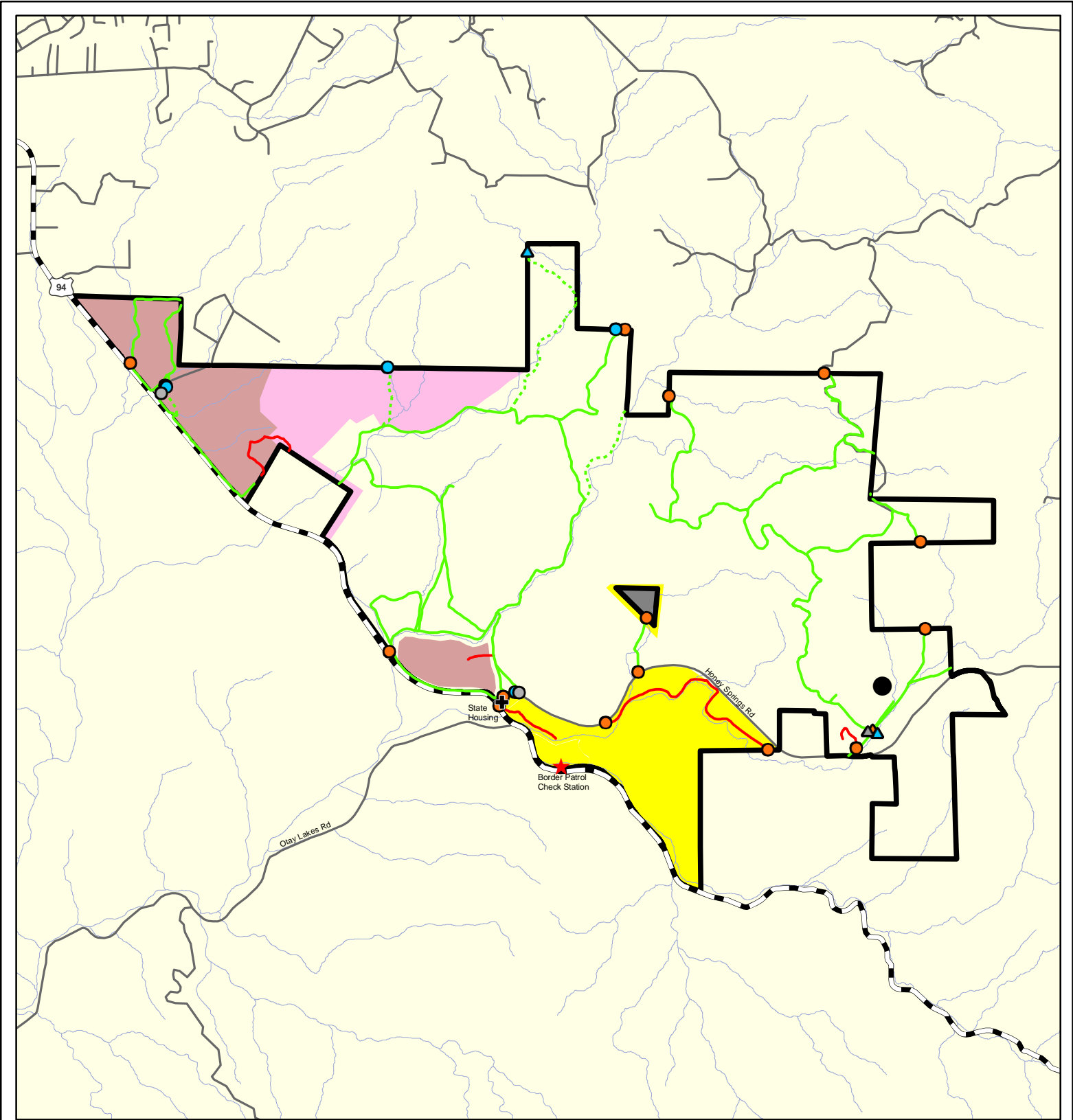
As previously noted, of the 5,189 acres set aside for HCWA, approximately 2,997 acres have not yet been surveyed for cultural resources. Additional surveys should be done as development and improvement planning continues. If additional public access points are added, additional surveys must be completed. Top priorities for additional surveys should be the Jamul Creek area and the fallow fields along SR 94 north of the Daley family complex. Before any ground disturbance can occur within an area that has not been surveyed, an archaeological survey and evaluation should be conducted.

F. EXISTING LAND USE

The Department manages lands under their jurisdiction that have been designated as wildlife areas for the purpose of protecting wildlife and habitat. The Department allows uses that are wildlife dependent and secondarily that are compatible with their mission (CDFG 2005a). Uses that are not wildlife dependent are prohibited. Public uses are designed to not harm sensitive species or habitat, nor violate any law. Public uses at HCWA include hunting; trail recreation, including equestrian use, mountain biking, and hiking; and hunting dog training (hereafter referred to as “dog training”). Select public use areas, closed areas, and many of the existing facilities are depicted in Figure 11.

1. Regulations and Allowable Public Use

The Department is managing the wildlife area with the overall goal of protecting and enhancing unique biological resources and providing the public with compatible wildlife-dependent educational and recreational opportunities. Compatibility of recreation with resource protection is a critical element of the planning effort. Lands that are designated as wildlife areas are listed in Title 14 of the CCR, Section 550. General regulations governing uses within all state wildlife areas are also listed in Section 550. Additional area-specific regulations are provided in Section 551 and reprinted by the Department in the pamphlet entitled *Hunting and Other Public Uses on State and Federal Lands* (CDFG 2002a). The Department publishes additional pamphlets detailing specific regulations associated with hunting of mammals and furbearers (CDFG 2002b), and resident and migratory upland game birds (CDFG 2002c). These regulations (general and specific) are summarized in Table 7.



Legend

- Closed Area
- Hunting Dog Training Area
- No Hunting Zone
- Border Patrol Check Station
- Proposed Hunting Dog Training Ponds/Fields
- State Housing
- Parking**
- Parking Area
- Proposed Parking Area

Gates

- Vehicle Gate
- Proposed Vehicle Gate
- Horse Gate
- Proposed Horse Gate
- HCWA Trails/Roads**
- Double-Track Trail
- Single-Track Trail
- Management Road

Basemap Legend

- HCWA Boundary
- State Highway
- Road
- Stream
- Not a Part (private in-holding)

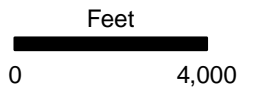


Table 7
Title 14, Sections 550 and 551 of the California Fish and Game Code

Wildlife Areas - General Regulations	
Regional Manager's Authority	The regional manager shall have the authority to regulate public use of the state wildlife areas where such use is not provided for in CCR Title 14.
Entry Restrictions	The Department may limit the number of persons entering a state wildlife area during any period for safety reasons, to reduce crowding, or to provide for the limited take of a species. In addition, the Department may close portions of a state wildlife area or close the area entirely to public entry or to specific activities. Exclusive of closed areas, entry is allowed from 1 hour before sunrise to 1 hour after sunset. All entry restrictions must be obeyed.
Use Permits for Organized Events	Any person organizing an event or gathering to be conducted on a state wildlife area property shall obtain a use permit from the appropriate regional manager, and such events or gatherings shall be compatible with wildlife area objectives.
Motor Driven Vehicles	No person shall drive, operate, leave, place, or stop any motor driven vehicle or trailer anywhere in a state wildlife area except on public or established roads or on designated jeep trails and such other areas as designated by the Department. No person shall drive a vehicle carelessly in willful disregard of the rights or safety of others, or without due caution or at a speed or in a manner likely to endanger any person, property, or wildlife. In addition, all traffic signs and rules must be obeyed. No off-highway vehicles (OHVs) are allowed in a state wildlife area at any time.
Vandalism and Litter	No person shall tamper with, damage, or remove any property not his own when such property is located within a state wildlife area, and no person shall leave, deposit, drop, bury, or scatter bottles, broken glass, feathers, hides, wastepaper, cans, sewage, or other rubbish in a state wildlife area, except in designated receptacles. Where no receptacles are provided, all rubbish must be removed from the area and disposed of elsewhere. In addition, no person shall import and deposit any rubbish or toxic substance into a state wildlife area.
Trees and Minerals	No person shall dig up, cut, damage, or remove any trees, shrubs, vines, plants, or wood from a state wildlife area (vegetation may not be cut and used for the purpose of building blinds at HCWA). In addition, no person shall dig up or remove any humus, soil, sand, gravel, or rock from a state wildlife area.
Bottles and Artifact Collecting	No person shall collect or remove bottles or artifacts, or otherwise disturb the soil to locate or remove bottles or artifacts, from a state wildlife area.
Use of Dogs and Field Trials	The Department may prohibit or restrict the use of dogs on any state wildlife area. Dogs are allowed only for the use of hunting or training or when under immediate control. Dog training is allowed only in areas maintained by the Department. Special use permits are required for field trials.
Pesticide Use	No person, other than authorized government employees, shall apply any pesticide within a state wildlife area.
Livestock and Horses	No person shall permit any livestock to trespass on a state wildlife area, except under authorized grazing permits issued by the Department. Recreational use of horses is permitted only on roads open to vehicles and within 25 feet of the exterior boundary fences.
Fish and Frogs	Fish and frogs may not be taken for commercial purposes.
Hunting and Trapping	Hunting and trapping shall be allowed during the regular open seasons, and such other area use regulations as specified by the regional manager.
Possession and Use of Alcohol or Drugs	No person shall possess or use alcohol or other controlled substances while in the field or engaged in other recreational activities.
Ejection	The Department may eject any person from a state wildlife area for violation of any area regulations, or for disorderly conduct, intoxication, or when a department employee determines that the general safety or welfare of the area or person thereon is in danger.

Special Regulations for Use at Hollenbeck Canyon Wildlife Area	
Method of Take	No rifles or pistols may be used or possessed. No shotgun with a live round in the chamber may be possessed outside of the designated hunting zone.
Hunt Days	Hunting is permitted daily from September 1 through January 31 in designated areas during open seasons for upland game birds, crow, coyote and resident small game.
Authorized Species	Upland game birds, crow, coyote and resident small game.
Camping and Trailers	Camping and overnight use is not allowed. Horse trailers are permitted within designated parking area, if space is available.
Fires	Not allowed year-round.
Hunting Dog Training	Allowed only in designated areas from September 1 through February. Only male ring-neck pheasants, male bobwhite quail, either sex feral pigeons, and male mallard ducks (with at least one wing clipped) may be used for hunting dog training purposes. Release or possession of any female bird species is prohibited. It is unlawful to release or possess a male mallard without at least one wing clipped.
Special Restrictions	Coyotes, Crows, Upland game and resident small game species may be taken only in designated areas. Horse and bicycle use is limited to designated trails and/or routes. Paint ball guns may not be used or possessed.

Source: California Code of Regulations, Title 14, Sections 550, 551 and 552 (as of 2008).

Title 14 of the CCR and other statutes regulate use within wildlife areas. Title 14 supersedes the authority of this LMP. If regulations pertaining to wildlife areas in Title 14 are changed in the future, those revised regulations would apply to HCWA, overriding this LMP. Proposed changes in uses identified in this LMP would need to be added to Title 14 during the next regulatory review cycle before those changes can become legal. Title 14 regulations are reviewed and changed, as needed, every three years. Area-specific LMPs are reviewed and updated, as needed, every five years. Therefore, every five years this LMP will be updated to reflect any future regulation changes that apply to wildlife areas in general or HCWA in particular.

In addition to the uses that are authorized through the Title 14 regulations, the Department's Regional Manager has the authority to issue permission to access Department lands for special uses, provided those uses do not violate any other laws. A special use permit may include habitat enhancement projects, public use projects, public events, volunteer events, specific research studies, educational field trips, or organized group activities. The Department has developed criteria to evaluate potential special uses to ensure that the proposed use does not violate any existing laws, e.g., CEQA, the federal Endangered Species Act (ESA), the California ESA, etc. The criteria for issuance of regional letters of permission for special use on Department lands include:

- The applicant will provide to DFG a description of the proposed activity that will have sufficient detail to evaluate the uses under CEQA, the federal ESA, and California ESA, including date, time, location, number of participants, activity planned, any vehicular

access needed, animals included in the activity (e.g., dogs, horses). The information has to be of sufficient detail for the Department to be able to conclude the following:

- The activity is safe for the participants;
 - The activity does not significantly impact sensitive habitat;
 - The activity does not significantly impact sensitive species;
 - The activity does not significantly impact cultural resources;
 - The activity does not conflict with approved public uses or affect other previously authorized special uses;
 - The activity does not cause significant damage (i.e., anything requiring repairs) to the property;
 - The activity results in a net benefit to species and/or habitats or achieves public use, monitoring/research or outreach objectives as outlined in the LMP for the property; and
 - The activity does not result in the Department incurring any costs (staff time or other), or is offset by in-kind improvements to the property of equal or greater value.
- The proponents must provide proof of insurance for the activity (two million dollars with the Department named as additional insured) once the activity is conceptually approved under other existing laws.
 - Following the special use, the applicant (or proponent) must provide a summary of the activity and provide participant numbers, project completion details, or study results to the Department.

2. **Current Public Uses**

Hunting

Hunting is permitted throughout the majority of HCWA with a valid license and the appropriate equipment and stamps. As described by the California Fish and Game Code, HCWA is a “Type C” wildlife area, which does not require an entry permit or pass for hunting during open seasons. A Type C area also depicts an unstaffed area that is not actively manipulated, but rather provides

a more natural setting. Hunting opportunities are provided such that sustainable yields of hunted populations are maintained.

Hunting within HCWA is focused on upland game species: mourning dove, California quail, and resident small game. Resident small game include pheasant, California or valley quail, jackrabbits, cottontail rabbits, dove, and wild turkeys. Presently, pheasant and turkeys do not occur on the property. The Department allows limited “put and take” pheasant hunts on the adjacent RJER; however, this type of hunting is not currently conducted on HCWA. Bird hunting at HCWA requires an upland game bird stamp. However, no permit or stamp is required for non-bird species such as rabbit. Non-game species will be considered for additions to the list of legal huntable wildlife at HCWA, including crows and non-game mammals, i.e., coyotes. Other species, e.g., deer, may also be added after further review of their populations within and surrounding the wildlife area. Hunting any of these species would not become legal until such species are formally added to the Title 14 regulations. The approximate seasons for the current legally huntable species are listed in Table 8.

Table 8
Upland Game and Resident Small Game Seasons Applicable
to the Hollenbeck Canyon Wildlife Area

Species	Season*	Total Days*
Dove	Early September (early season)	15
	Late November – early December (late season)	45
Quail	Mid-October – late January	105 (3.5 months)
	Late August – mid-September (archery only)	20
Rabbits	Early July – late January	180 days (6 months)

*Dates and number of days vary annually.

Department management does not currently issue hunting access permits to HCWA; however, if overcrowded hunting conditions or habitat impacts become an issue, a program to designate the number of hunters for each hunting season may be implemented. Currently, the daily range of hunters is from 2 to 5 hunters on weekdays, 5 to 10 on non-opener weekend days, and 20 to 30 on opening days.

Some areas are closed to hunting, including areas adjacent to the private Daley Ranch compound in the western portion of HCWA and state housing areas south of Honey Springs Road (Figure 11). Hunting by shotgun or archery is allowed; no rifles or pistols are allowed due to the proximity of residential areas. Shotguns and archery may only be used for hunting; no target

practice is allowed. Hunting rabbits by box traps is allowed at any time during open season. Falconry is allowed but is not generally used due to the high number of raptors present that could attack hunting falcons.

Wildlife Viewing, Environmental Education, and Nature Study

HCWA provides a wide variety of terrain and habitats that support diverse plant and wildlife communities. The quality and diversity of habitat and wildlife species provide extensive opportunities for nature study and wildlife viewing. Although a lack of water features somewhat limits the number of bird species present, the area hosts several species of raptors: red-tail hawks, golden eagles, northern harriers, kestrels, and barn owls. Many other types of birds are also present, including the federally threatened California gnatcatcher.

There are also several species of small and large mammals to be seen by visitors to HCWA. These include mule deer, and predators such as bobcats, coyotes, and gray foxes. Mountain lions are rarely seen but do occur in the area. A range of reptiles and amphibians live in the area including rattlesnakes and the coast horned lizard, and federal and state listed species of special concern.

Formal education uses are currently few. Some school field trips and other groups are hosted at the adjacent RJER, which is intended to have a greater focus on educational programs; these groups may also visit HCWA.

Trail Use

Wildlife-dependent trail usage would presume that wildlife area visitors are interested in viewing wildlife in their native habitats. Modes of wildlife viewing at HCWA include hiking, walking, trail running, horseback riding, mountain biking, and hunter access. There are approximately 19 miles of double-track trails and an additional 2.4 miles of single-track trails open to public uses. Much of the terrain is hilly and rocky with steep drop-offs along trails in some places. From the parking area at Honey Springs Road at an elevation of about 750 feet, the trails climb into the hills, reaching elevations of about 1,800 feet near the northeastern portion of HCWA. Visitors are cautioned by signs at the entry to proceed at their own risk. In addition to recreational use, the trails are used for management, research, and Department activities, and by fire agencies and Border Patrol staff.

The trail segment that climbs through Hollenbeck Canyon itself is particularly attractive to visitors as it provides shade and scenery beneath large oak and sycamore trees, and scenic views once the trail user has climbed some distance up the canyon. Some trail segments within HCWA form loops, helping distribute impact, allowing visitors to cover trail segments without having to double-back and potentially providing more opportunities to view wildlife. Some wildlife may be flushed on a first pass and therefore on linear trails less wildlife may be present while walking back.

The San Diego County Community Trails Master Plan has been adopted by the County to establish a system of interconnected regional and community trails and pathways. These trails and pathways are intended to address an identified public need for recreation and transportation, and to provide health and quality of life benefits associated with hiking, biking, and horseback riding throughout the County's biologically diverse environments. Many of the existing HCWA and RJER trails connect with the existing and proposed County trail system. The Department may choose to accept some of the County's proposed trails within HCWA but is not obligated to accept all of them.

The California Hiking and Riding Trail connects to and overlays a portion of the trail system in HCWA. That segment of trail was formerly a part of the state-designated trail. The California Department of Parks and Recreation had an easement before the land was under Department jurisdiction. Equestrians and others may access HCWA from adjacent lands to the east on the California Hiking and Riding Trail, although the former trail easements were dissolved.

Current equestrian use of the trails is about 5 to 10 riders per day during the week and 10 to 20 on weekend days. Some of these riders are adjacent residents who can access the land on horseback (however there are no access points from private land). To protect the trails, equestrian use is allowed only on compacted, dry roads with a 3-day wait after a significant rain event. Organized group rides are required to get permits from the Department.

Hiking and other pedestrian use of the trails are somewhat greater than equestrian use, with about 10 to 20 hikers per day on weekdays and 20 to 40 per day on weekends. Mountain biking activity on the trails is similar in amount to equestrian use, with 5 to 10 riders on weekdays (generally in the morning and early evening) and 10 to 20 riders on weekend days. Several internet sites for mountain biking enthusiasts publicize the riding opportunities at HCWA. Hikers are allowed off-trail, while equestrians and bike riders are required to remain on designated routes. As noted for equestrian use, to protect the trails, mountain bike use is allowed only on dry trails with a 3-day closure after a significant rain event.

Dog Use and Hunting Dog Training

Visitors may bring dogs onto HCWA. Dogs must be under control at all times, either leashed, under voice control, or whistle, and/or hand signal. Only visitors training hunting dogs using live birds and shotguns must have a hunting license. Hunting dog training is only allowed in designated areas from September through February. Three areas have been designated for hunting dog training; the largest is a 500-acre area at the northwest corner of HCWA along SR 94, a 400 acre area located 4 miles up Honey Springs Road and an 80-acre area adjacent to the main parking area north of the junction of SR 94 and Honey Springs Road, near the main parking area. About 5 to 10 people per week use these areas for hunting dog training. Hunting dog trainers may release pigeons and male game birds for training purposes (see Title 14, Sections 550-551, Regulation Table 7 in this document for more detail). Dog field trials are not currently authorized on this wildlife area.

Research

Ongoing biological research of various plant and animal species supplies important information to guide future management and stewardship of resources. Mountain lion, deer, Quino checkerspot butterfly, and California gnatcatcher are among the species being studied. Quail and dove are also surveyed on a regular basis.

Unauthorized Activity

Unauthorized activities that do occur include motorized vehicle use and trail creation, either by off-road vehicles, mountain bike users, or equestrians. Hikers or hunters may also contribute to the problem to a lesser degree if repeatedly treading on off-trail areas. Some websites targeted at mountain bikers advertise the availability of single-track trails, which may increase the likelihood that these illegal trails will be used. Unauthorized use of HCWA by motorcyclists has been observed directly and is otherwise evident from ruts and other off-trail damage that exists on the site. A portion of this illegal access is known to occur from the northeastern corner of the property where off-site trails lead directly to HCWA. Additional unauthorized entry by motorcyclists occurs from off-site trails that lead into the eastern side of the wildlife area, north of Honey Springs Road. Citations are issued and fines can be levied by County court systems.

3. Existing Facilities

Roads and Trails

HCWA facilities that support public access include parking areas and trails. One parking area, located on Honey Springs Road near the intersection with SR 94, is gravel with a capacity for approximately 4 horse trailers (with enough turn-around area) and parking room for about 10 cars (Figure 11). If no horse trailers are present, the parking lot capacity is approximately 25 cars. There are no specifically demarcated spaces. The Department has posted regulatory signs at the trail head. The northernmost hunting dog training area in the wildlife area is accessed via Rancho Jamul Drive where roadside parking can accommodate approximately 20 cars. A second parking lot off of Rancho Jamul Drive, near SR 94, is available for special events. Both parking lots have gates that can be locked if the area needs to be secured; however, only the gate at the smaller lot off of Rancho Jamul Drive is typically closed. There are no other developed parking facilities within the wildlife area.

The majority of the existing trails at HCWA were formerly roads and are now classified as double-track trails, allowing for safe multiple uses (Figure 11). Four designated single-track trails occur within the wildlife area. A few old roads from past ranching and unauthorized vehicle use occur within the wildlife area, as well as other single-track trails that have been illegally created. Some of these features have been blocked to public access by boulders or other barriers, and others may eventually be closed and restored if determined necessary. Horses and mountain bikers are only allowed on double-track trails. Hunters use the trails to gain access to the interior of the area but hunt away from the trails. All trails near the perimeter of HCWA that neighbor private lands terminate approximately 100 feet from the property boundary; these trail ends are also posted (i.e., “Leaving State Wildlife Area”).

Five of the roads within HCWA are for management access only; all are blocked by gates and are posted to alert the public of the restricted access (Figure 11). In addition, all of the double-track trails are also used for official purposes, including Department management and law enforcement, research access, fire agencies, and Border Patrol access. Although most movement of unauthorized travelers across Department land takes place within the adjacent RJER, HCWA is within the jurisdiction of the U.S. Border Patrol; therefore, patrols, as needed, are conducted within HCWA. A Border Patrol checkpoint is located on the north side of SR 94 along the southern end of the property.

Existing roads within the wildlife area are maintained to provide passable access routes to various areas within the properties. Methods used to maintain the roads include mowing, scraping, and herbicide spraying to keep a smooth, level, and weed-free surface. This prevents excessive wear on equipment, helps prevent wildfires from hot vehicle parts coming in contact with dry vegetation, and allows access for work and for public recreational activities.

Other Facilities

Other facilities within HCWA include vehicle gates, horse gates, wells, fencing, signage, fire hydrants, and buildings. All gates are depicted in Figure 11 and the wells and fire hydrants are depicted in Figure 8. Fencing currently exists along all public roads that neighbor or traverse HCWA (e.g., Honey Springs Road, Rancho Jamul Drive, and SR 94) and along accessible portions of the perimeter of the property (i.e., where trails cross the perimeter from private lands). Signs are posted (3 per mile) around the perimeter of the property, and at major access points (e.g., gates and trail heads). The buildings include the two old houses that remain from the old Honey Springs Ranch in the southeast portion of the property (see Subsection E.2 of this section). In addition, one state-owned house is located east of SR 94, just south of Honey Springs Road. The state-owned house is routinely occupied by Department personnel.

4. Closed Area/Periods

The section of HCWA between (south of) Honey Springs Road and SR 94, an area of approximately 468 acres, is currently closed to the public (Figure 11). No entry is allowed to this area except to Department or other authorized personnel for authorized reasons. There is one unit of state housing in this area near Honey Springs Road and SR 94. A second, smaller area of approximately 35 acres, immediately north of Honey Springs Road, is also closed to public access (Figure 11). This closed area includes a private inholding and a surrounding area that is closed to minimize unauthorized entry to the private inholding. Closed zones buffer private property on the north and southeast, the Daley inholding and other private inholdings.

Staff and/or volunteers responsible for gate openings and closures may be instructed by the HCWA manager to keep gates closed and post temporary closure signs during high fire danger, severe weather, and for up to 3 days following heavy rain events.

III. HABITAT AND SPECIES DESCRIPTIONS

Descriptions of existing biological conditions within HCWA are provided in this chapter. These descriptions are based on the results of multiple field surveys, including the following:

- General biological resources surveys conducted for the Conceptual Area Protection Plan and Grant Proposal for Hollenbeck Canyon (CDFG 1999); original acquisition area only.
- General wildlife surveys conducted by the South Coast Region of the Department during 2001-2002 (CDFG 2002d).
- Rare plant surveys conducted by the South Coast Region of the Department during 2004 (GIS data provided by CDFG).
- Baseline biological resources inventory for HCWA including ant, herptofauna, and small mammal pitfall trapping and bird point count surveys (USGS 2004a).
- Focused surveys for Quino checkerspot butterfly (*Euphydryas editha quino*) for Honey Springs Ranch (Mooney and Associates 2003).
- Focused surveys for Quino checkerspot butterfly and Hermes copper butterfly during 2005 by Marschalek (GIS data provided by CDFG).
- Bat surveys conducted by USGS during 2002-2004 as part of the bat inventory study for the San Diego County MSCP (USGS 2005a).
- Raptor monitoring surveys conducted during 2002 as part of the NCCP Raptor Monitoring Project associated with the MSCP (Wildlife Research Institute 2004).
- Detailed vegetation mapping (entire HCWA) and rare plant surveys (focus on Honey Springs Ranch) conducted by EDAW biologists during 2005 (EDAW 2005).
- General wildlife surveys (focus on Honey Springs Ranch) conducted by EDAW biologists during 2005.

Nomenclature for taxonomic and common species names for wildlife follows that Hickman (1993); Grenfell et al. (2003); Glassberg (2001); Sibley (2000); Stebbins (1985); and Whitaker (1998).

The following section summarizes the vegetation communities and the plant and animal species within HCWA and presents an overview of ecological conditions and requirements that are relevant to site management. This information is organized in the following manner: subsections A and B consist of a general description of the plant communities and wildlife in HCWA, including a discussion of representative non-sensitive species and their associated habitats; subsection C reviews the listed and other special status species known to occur or with the potential to occur within the property; subsection D discusses the non-native plant and animal species on the wildlife area; subsection E discusses wildlife-linked diseases and subsection F reviews regional habitat linkages and wildlife movement corridors.

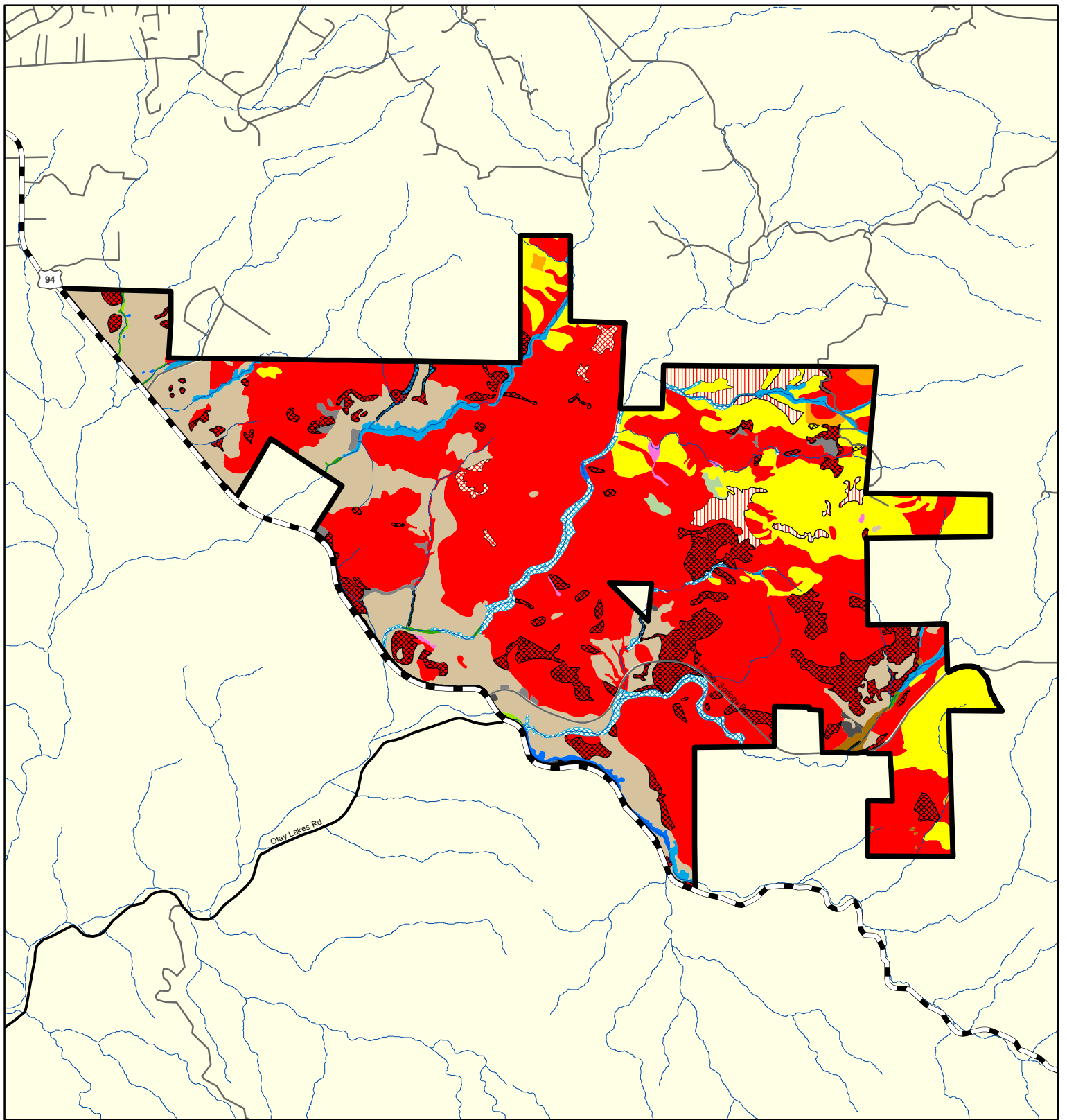
A. VEGETATION COMMUNITIES AND FLORA

1. Vegetation Communities

Vegetation types are assemblages of plants that coexist in space and time. Vegetation was mapped in the field by EDAW biologists on color aerial photographs with topography at a scale of 1"=400' (see Appendix B for survey dates and personnel). Vegetation classification was based on Dr. John O'Leary's *Mapping Rules for Vegetation and Land Cover Types for Marine Corps Air Station Miramar* (2001). These mapping rules were also employed by Dr. O'Leary and his graduate students for RJER (O'Leary 2002).

Twenty-three vegetation types and one land cover type (i.e., an area that does not support vegetation) were mapped for HCWA (Figure 12). Acreages for all vegetation and other land cover types are summarized in Table 9. As summarized in Table 9, HCWA is dominated by various types of scrublands and grasslands, which account for approximately 77 percent and 17 percent of the total cover within the wildlife area, respectively.

Below are descriptions of the vegetation types found on HCWA; the numerical code used by O'Leary is also noted. With several exceptions, the descriptions are based upon O'Leary's *Vegetation and Land Cover Mapping at Rancho Jamul Ecological Reserve, San Diego, California* (O'Leary 2002). Three vegetation types, southern mixed chaparral, coastal sage scrub-chaparral, and native grassland, occur on HCWA, but were not mapped by O'Leary on RJER. However, these three vegetation types have been described by O'Leary for other portions of the county (2001). O'Leary's *Mapping Rules for Vegetation and Land Cover Types on Marine Corps Air Station Miramar* (2001) was used to describe these additional three vegetation types. The vegetation type descriptions between these two O'Leary documents are identical. In addition, there are five vegetation types that occur on HCWA that could not be adequately described by either O'Leary's document for RJER or Marine Corps Air Station



Legend

- Diegan Coastal Sage Scrub
- Diegan Coastal Sage Scrub/Chamise Chaparral Ecotone
- Diegan Coastal Sage Scrub w/Clay Lenses
- Chamise Chaparral
- Southern Mixed Chaparral
- Native Grassland
- Non-Native Grassland
- Coast Live Oak Woodland
- Mulefat Scrub
- Southern Willow Scrub
- Riparian Woodland (Sycamore Woodland)
- Sycamore-Oak Riparian Forest
- Southern Coast Live Oak Riparian Forest
- Eucalyptus Woodland
- Disturbed Habitat
- Developed
- Disturbed Overlay

Basemap Legend

- HCWA Boundary
- State Highway
- Road
- Stream

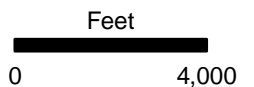


Table 9
Vegetation Types and Acreages within the Hollenbeck Canyon Wildlife Area

Vegetation Type (Numerical Code #)*	Acreage	Percent of Wildlife area
Diegan coastal sage scrub (30)	2,763.0	
Disturbed Diegan coastal sage scrub (31)	431.5	
Diegan coastal sage scrub-clay lens (not in O'Leary)	23.1	
Chamise chaparral (50)	635.3	
Disturbed chamise chaparral (not in O'Leary)	2.1	
Scrub oak chaparral (54)	1.1	
Southern mixed chaparral (56)	19.6	
Coastal sage scrub-chaparral (72)	127.6	
<i>Subtotal Scrublands =</i>	<i>4,003.3</i>	<i>77.1</i>
Non-native grassland (80)	872.9	
Native grassland (82)	11.5	
Non-native/native grassland (84)	0.9	
<i>Subtotal Grasslands =</i>	<i>885.3</i>	<i>17.0</i>
Southern coast live oak riparian forest (110)	88.1	
Disturbed southern coast live oak riparian forest (111)	6.1	
Southern arroyo-willow riparian forest (112)	1.4	
Riparian woodland (sycamore woodland) (120)	23.3	
Sycamore-oak riparian forest (not in O'Leary)	97.9	
Disturbed sycamore-oak riparian forest (not in O'Leary)	1.2	
Southern willow scrub (130)	6.2	
Mulefat scrub (132)	10.4	
Disturbed mulefat scrub (133)	1.6	
<i>Subtotal Riparian Habitats =</i>	<i>236.2</i>	<i>4.6</i>
Coast live oak woodland (150)	9.0	
Eucalyptus woodland (not in O'Leary)	15.1	
<i>Subtotal Upland Woodland Habitats =</i>	<i>24.1</i>	<i>0.5</i>
Disturbed habitat (240)	30.9	
<i>Subtotal Disturbed Habitat =</i>	<i>30.9</i>	<i>0.6</i>
Developed (250)	9.2	
<i>Subtotal Developed =</i>	<i>9.2</i>	<i>0.2</i>
Totals	5,189.0	100.00

* Numerical code used by O'Leary (2001, 2002)

Miramar: Diegan coastal sage scrub with clay lenses, disturbed chamise chaparral, sycamore-oak riparian forest, disturbed sycamore-oak riparian forest, and eucalyptus woodland. These vegetation types were described for HCWA based upon the dominant species and the type physiognomy.

Diegan Coastal Sage Scrub (30)

Areas mapped as Diegan coastal sage scrub have greater than 50 percent ground cover of low, drought-deciduous, malacophyllous subshrubs (which contribute greater than 60 percent of the relative cover). California sagebrush (*Artemisia californica*), flat-topped buckwheat (*Eriogonum fasciculatum*), and San Diego viguiera (*Viguiera lacinata*) are the primary co-dominants within this vegetation type on HCWA. Wishbone plant (*Mirabilis laevis*) is a common shrub component, while laurel sumac (*Malosma laurina*) and yellow bush penstemon (*Keckiella antirrhinoides* ssp. *antirrhinoides*) are relatively uncommon throughout the wildlife area overall, although locally common in some areas. Common early season native annuals and herbaceous perennials include goldfields (*Lasthenia californica*), miniature lupine (*Lupinus bicolor*), blue dicks (*Dichelostemma capitatum*), popcorn flower (*Plagiobothrys* sp.), and cryptantha (*Cryptantha* sp.). This vegetation type lacks significant cover of bare ground and/or non-native herbs. Diegan coastal sage scrub occurs on most of the hillsides and slopes of HCWA. This is the most common vegetation type within HCWA occurring on approximately 2,763.0 acres.

Disturbed Diegan Coastal Sage Scrub (31)

Areas mapped as disturbed Diegan coastal sage scrub have from 20 to 50 percent ground cover of low, drought-deciduous, malacophyllous subshrubs (which contribute greater than 60 percent of the relative cover). Similar to the undisturbed sage scrub, California sagebrush, flat-topped buckwheat, and San Diego viguiera are the primary co-dominants within this vegetation type on HCWA. Wishbone plant, laurel sumac, and yellow bush penstemon are relatively uncommon throughout the wildlife area, although these species can be locally common in some areas. Common early season native annuals and herbaceous perennials, e.g., goldfields, miniature lupine, blue dicks, popcorn flower, and cryptantha, are still all present, however in much lower numbers. Indication of disturbance is present in the form of significant percentage cover of bare ground and/or non-native and native herbs, such as wild oats (*Avena* spp.), foxtail chess (*Bromus madritensis* ssp. *rubens*), mustard (*Hirschfeldia incana*), goldentop (*Lamarkia aurea*), fascicled tarweed (*Deinandra fasciculata*), and filaree (*Erodium* spp.). This vegetation type is scattered throughout HCWA occurring in areas that may have previously been grazed and/or burned, and

as such have lower cover values. This is the fourth most common vegetation type within HCWA, occupying approximately 431.5 acres.

Diegan Coastal Sage Scrub with Clay Lenses

This vegetation type is not recognized by O'Leary (2001, 2002). This vegetation type occurs on clay soils or inclusions. Shrub cover is relatively low compared to adjacent non-clay soils as it is thought that the shrinking/swelling capacity of clay soils damages the root systems of perennial woody species, hence limiting their occurrence on these types of soils. However, where this vegetation community was mapped, the lower shrub cover generally allows for a much higher cover and diversity of native forbs and grasses. Because of the inherent lower shrub cover, these areas would be classified as disturbed Diegan coastal sage scrub under O'Leary's classifications, even in the absence of physical disturbance. Because the lower shrub cover is due to the clay lenses, and not a physical disturbance, these areas were classified separately from O'Leary's other sage scrub vegetation types. Shrub species present are identical to those mentioned previously for the Diegan coastal sage scrub and disturbed Diegan coastal sage scrub vegetation types. The native forbs and grasses that were observed in these clay lens areas include San Diego golden star (*Muilla clevelandii*), red skin onion (*Allium haematochiton*), mock parsley (*Apiastrum angustifolium*), and both purple and foothill needlegrass (*Nassella pulchra* and *N. lepida*). Approximately 23.1 acres of this vegetation type are scattered through the north-central portion of HCWA.

Chamise Chaparral (50)

Areas mapped as chamise chaparral have greater than 70 percent ground cover attributable to evergreen sclerophyllous shrubs and drought-deciduous malacophyllous subshrubs (evergreen sclerophyllous shrubs constitute greater than 60 percent of the relative cover) with chamise (*Adenostoma fasciculatum*) contributing greater than 50 percent of the cover. Other species within this vegetation type include laurel sumac, mission manzanita (*Xylococcus bicolor*), California sagebrush, and flat-topped buckwheat. This vegetation type lacks significant cover of disturbance-specialist species or bare ground. This vegetation type is scattered within the northern and eastern portions of HCWA, typically occurring at the higher elevations. This is the third most common vegetation type within HCWA occurring on approximately 635.3 acres.

Disturbed Chamise Chaparral

This vegetation type is not recognized by O’Leary (2001, 2002). However, areas supporting less than 70 percent ground cover attributable to evergreen sclerophyllous shrubs and drought-deciduous malacophyllous subshrubs, dominated by chamise, do not accurately fit into other categories of O’Leary. As such these areas were classified as disturbed chamise chaparral. Prior mechanical disturbance is evident and these areas are recovering but still have relatively lower cover values. Very small areas of this vegetation type, totaling approximately 2.1 acres, occur in the northeastern portion of HCWA.

Scrub Oak Chaparral (54)

Areas mapped as scrub oak chaparral have greater than 70 percent ground cover attributable to evergreen sclerophyllous shrub species and drought-deciduous malacophyllous subshrubs (evergreen sclerophyllous shrubs constitute greater than 60 percent of the relative cover) with scrub oak (*Quercus berberidifolia*) contributing greater than 50 percent of the cover. A small area of this vegetation type (approximately 1.1 acres) occurs in the southeast corner of HCWA.

Southern Mixed Chaparral (56)

Areas mapped as southern mixed chaparral have greater than 70 percent cover attributable to evergreen sclerophyllous shrubs and drought-deciduous malacophyllous subshrubs (evergreen sclerophyllous shrubs constitute greater than 60 percent relative cover) with no single species contributing greater than 50 percent cover. Chamise, flat-topped buckwheat, yellow bush penstemon, laurel sumac, California sagebrush, mission manzanita, monkeyflower (*Mimulus aurantiacus*), and scrub oak are all well represented in this vegetation type. Though this vegetation type was not recognized on RJER, the description for southern mixed chaparral was taken from O’Leary’s *Mapping Rules for Vegetation and Land Cover Types on Marine Corps Air Station Miramar* (2001). Approximately 19.9 acres of this vegetation type occur within the far northern portion of HCWA.

Coastal Sage Scrub-Chaparral (72)

Areas mapped as coastal sage scrub-chaparral ecotone have greater than 70 percent ground cover attributable to evergreen sclerophyllous chaparral species and drought-deciduous malacophyllous sage scrub species (40 percent relative cover \leq coastal sage scrub species or chaparral species \leq 60 percent relative cover; where both types are intermixed). Chamise, California sagebrush,

mission manzanita, flat-topped buckwheat, and San Diego viguiera are the dominant shrub species present. This vegetation type is restricted to the northeastern portion of HCWA and totals approximately 127.6 acres.

Non-Native Grassland (80)

Areas mapped as non-native grassland have greater than 40 percent cover of grasses and forbs, with greater than two-thirds cover attributable to non-native annual grasses. Foxtail chess, wild oats, and ripgut grass (*Bromus diandrus*) are the dominant non-native grass species although purple needlegrass is sometimes present in very low numbers. Native/non-native annual forbs such as filaree, California burclover (*Medicago sativa*), wild radish (*Raphanus sativus*), and mustard may be intermixed. Some of the non-native grasslands, particularly in the west-central portion of the wildlife area, were obviously former pastures and agricultural areas. One of these areas is periodically seeded with cereal wheat (*Triticum aestivum*) and safflower (*Carthamnus tinctorius*) by the Department to encourage use by mourning doves (*Zenaida macroura*) for hunting. Non-native grassland is the second most common vegetation type within HCWA occurring on approximately 872.9 acres within the property. This vegetation type occurs at the lowest elevations within HCWA, predominantly along the western boundary adjacent to SR 94.

Native Grassland (82)

Areas mapped as native grassland have greater than 40 percent cover of grasses and forbs of which greater than two-thirds cover is attributable to needlegrass species, including foothill stipa (*Nassella lepida*) and purple needlegrass. Native and introduced annual herbs may be intermixed including goldfields, California poppy (*Eschscholzia californica*), and purple owl's clover (*Castilleja exserta* ssp. *exserta*). Approximately 11.5 acres of this vegetation type occur within the northeastern portion (Honey Springs Ranch) of HCWA.

Non-Native/Native Grassland (84)

Areas mapped as non-native/native grassland have greater than 40 percent ground cover of grasses and forbs, with greater than two-thirds relative overall ground cover attributable to native and non-native grasses. These areas exhibit no evidence of recent mechanical disturbance. Wild oats, foxtail chess, and purple needlegrass are the common grasses, with filaree the most common non-native forb. This vegetation type is scarce within HCWA. Approximately 0.9 acre of this vegetation type occurs along the western boundary of HCWA.

Southern Coast Live Oak Riparian Forest (110)

Areas mapped as southern coast live oak riparian forest have greater than 40 percent cover by the coast live oak (*Quercus agrifolia*). Other minor tree species in the overstory include western sycamore (*Platanus racemosa*) and Engelmann oak (*Quercus engelmannii*). Understory species include poison oak (*Toxicodendron diversilobum*), mulefat (*Baccharis salicifolia*), California mugwort (*Artemisia douglasiana*), and bull thistle (*Cirsium vulgare*). This vegetation type occurs along several of the drainages within HCWA including Jamul and Dulzura creeks, and several unnamed creeks including a tributary to the streamchannel that flows within Hollenbeck Canyon. Approximately 88.1 acres of this vegetation type occur along the drainages within HCWA.

Disturbed Southern Coast Live Oak Riparian Forest (111)

Areas mapped as disturbed southern coast live oak riparian forest have from 20 to 40 percent cover of coast live oak with a discontinuous understory of sage scrub shrub species and non-native grass species. This vegetation type is characterized by widely spaced coast live oaks along drainages that flow through old pastures. Portions of these drainages have some evidence of past mechanical disturbance, associated with grazing activities, and portions of this vegetation type contain a high cover of non-native species in the understory. Approximately 6.1 acres of this vegetation type occur along two of the unnamed tributaries to Jamul Creek along the northern boundary of HCWA.

Southern Arroyo-Willow Riparian Forest (112)

Areas mapped as southern arroyo willow riparian forest have greater than 60 percent cover of arroyo willow that average greater than 20 feet in height. Approximately 1.4 acres of this vegetation type occur along the streamchannel in upper Hollenbeck Canyon within the wildlife area.

Riparian Woodland (Sycamore Woodland) (120)

Areas mapped as sycamore woodland are characterized by a tall, open, broadleaved, winter-deciduous streamside woodland dominated by western sycamore, with an overstory cover greater than 25 percent. Coast live oak, poison oak, and California mugwort are the most common associates. Approximately 23.3 acres of this vegetation type occur within HCWA.

Sycamore-Oak Riparian Forest

This vegetation type is a modification of O’Leary’s (2001, 2002) riparian woodland (i.e., sycamore woodland). Areas mapped as sycamore-oak riparian woodland consist of riparian areas where both western sycamore and coast live oak were equally co-dominant. Understory species are typical of those described above for the southern coast live oak riparian forest. This vegetation type is dominant along Hollenbeck Canyon and the unnamed tributary that parallels Honey Springs Road and is sporadic along an unnamed tributary north of Honey Springs Road. Approximately 97.9 acres of this vegetation type occur within HCWA.

Disturbed Sycamore-Oak Riparian Forest

This vegetation type is a modification of O’Leary’s (2001, 2002) disturbed riparian woodland (i.e., sycamore woodland), which does not occur on HCWA. Areas mapped as disturbed sycamore-oak riparian woodland consist of riparian areas where both western sycamore and coast live oak were equally co-dominant but, due to evidence of past mechanical disturbance, the overstory tree cover is low, ranging from 15 to 25 percent. This vegetation type is restricted to an unnamed tributary just south of the private inholding. Approximately 1.2 acres of this vegetation type occur within HCWA.

Southern Willow Scrub (130)

Areas mapped as southern willow scrub have greater than 60 percent cover of broadleaved, winter-deciduous riparian thickets dominated by arroyo willow (*Salix lasiolepis*) that average less than 20 feet in height. This vegetation type is restricted to small areas along Dulzura Creek and an unnamed tributary to Jamul Creek. Approximately 6.2 acres of this vegetation type occur within HCWA.

Mulefat Scrub (132)

Areas mapped as mulefat scrub have greater than 50 percent cover of riparian scrub habitat strongly dominated by mulefat. This early seral vegetation type is maintained by frequent flooding and occurs on intermittent stream channels with fairly coarse substrate and moderate depth to water table. This vegetation type is common along the intermittent streams on HCWA, usually in association with the riparian woodland or coast live oak riparian forest communities. Mulefat scrub occurs between the patches of woodlands and forests along these streams and as an understory component within these patches. This vegetation type is scattered along several

drainages within HCWA, including Jamul Creek and some of its unnamed tributaries, the streamchannel that flows through Hollenbeck Canyon and some of its unnamed tributaries, Dulzura Creek, and the unnamed tributary that parallels Honey Springs Road. Approximately 10.4 acres of this vegetation type occur within HCWA.

Disturbed Mulefat Scrub (133)

Areas mapped as disturbed mulefat scrub have between 20 to 50 percent cover of riparian scrub habitat strongly dominated by mulefat. Similar to undisturbed mulefat, this vegetation type is also an early seral vegetation type maintained by frequent flooding, occurring on intermittent stream channels with fairly coarse substrate and moderate depth to water table. Disturbed mulefat scrub occurs in areas of relatively frequent disturbance, such as the drainages through the old pastures where erosion from unstable banks is now the primary disturbance event. The most common understory species in this vegetation type is dwarf nettle (*Urtica urens*), with California mugwort and ripgut grass. California sagebrush and flat-topped buckwheat occur on some of the drier banks. This vegetation type occurs along an unnamed tributary (possibly man-made ditch) to Hollenbeck Canyon and along an unnamed tributary near Honey Springs Road. Approximately 1.6 acres of this vegetation type occur within HCWA.

Coast Live Oak Woodland (150)

Areas mapped as coast live oak woodland have greater than 25 percent overstory cover of coast live oak. This vegetation type is found on north-facing slopes and in moist ravines. Associated species include Engelmann oak, toyon (*Heteromeles arbutifolia*), and poison oak. Approximately 9.0 acres of this vegetation type occur within HCWA.

Eucalyptus Woodland

Although not recognized by O'Leary (2002) for RJER, this vegetation type was recognized by O'Leary (2001) for MCAS Miramar and that description is used herein. Areas mapped as eucalyptus woodland contain greater than 25 percent of eucalyptus species (*Eucalyptus* sp.) in the overstory canopy. Ripgut grass is the primary understory species. This vegetation type is most conspicuous in the eastern portion of HCWA along the unnamed tributary near the abandoned structures of Honey Springs Ranch. Several scattered patches of eucalyptus woodland occur in the southeastern corner of HCWA. Eucalyptus also occurs along Jamul Creek in the north-central portion of the property. Approximately 15.1 acres of this vegetation type occur within HCWA.

Disturbed Habitat (240)

Areas mapped as disturbed habitat exhibit past or present prevalent physical disturbances (e.g., brushing, tilling, vehicular disturbance, etc.). These areas are typically composed of a mixture of grasses and forbs with grasses contributing less than two-thirds of the relative cover with non-native forbs. On HCWA, these areas are dominated by filaree, mustard, wild radish, California burclover, and foxtail chess. Substantial amounts of bare ground may exist but these areas do have the potential for colonization and succession of native plant communities. This vegetation type on HCWA corresponds to areas that have been previously disturbed by operations of the former Daley Ranch (e.g., vegetation clearing, gravel pits, etc.) as well as unauthorized off-road vehicle activity that has resulted in habitat conversion. Approximately 30.9 acres of this land cover type occur within HCWA.

Developed (250)

Areas mapped as developed include permanent features that provide little or no short-term potential for the colonization and succession of native plant communities. Developed areas within HCWA consist of roads, old buildings, barns, and domestic animal structures (corrals, etc.). Developed areas include the abandoned residential structures of the old Honey Springs Ranch and the residential property at the southeastern corner of the intersection of SR 94 and Honey Springs Road. Approximately 9.2 acres of this land cover type occur within HCWA.

2. Flora

A total of 215 species were observed during the 2005 surveys of HCWA. A complete floral inventory of the species detected is presented in Appendix C. Of these 215 species, 168 (78 percent) are native species and the remaining 47 (22 percent) are non-native species. This diversity of species and relative proportion of native and non-native species within HCWA parallels regional (i.e., San Diego County) patterns as well. The 215 taxa (including subspecies and varieties) observed during the surveys represent 10 percent of the documented flora of the county (2,147 taxa reported by Simpson and Rebman 2001), though the number of documented taxa in the county is increasing as a result of the comprehensive Plant Atlas Program that was recently initiated by the San Diego Natural History Museum. In addition, Simpson and Rebman (2001) state that 78 percent of the total taxa of San Diego County are native to the county, while 22 percent are non-native and naturalized. For its size, HCWA supports a relatively large representative sample of the county's flora. The two largest plant families in the county are also

the families with the most species present on HCWA with 41 taxa observed in the Asteraceae and 20 taxa observed in the Poaceae.

The high number of native species reflects the large amount of contiguous natural habitat within HCWA that would promote plant species diversity. In addition, a number of areas of HCWA are underlain by clay, gabbro, and metasedimentary soils, which would also contribute to plant diversity by providing a mosaic of different substrates for plant establishment.

Similar to the patterns observed for the native taxa, the highest number of non-native taxa also belongs to the Asteraceae (9 observed) and Poaceae (12 observed).

A list of the plant species observed during the surveys is included as Appendix C.

B. WILDLIFE

The following habitat-based descriptions of species diversity on HCWA represent a sampling of those species observed in the multiple field surveys listed at the beginning of this chapter. For a complete list of species known to occur on HCWA, see Appendix D. A discussion of threatened, endangered, or special status wildlife species known to occur or with a potential to occur is presented in subsection C.

1. Invertebrates

The LMP area has an abundant diversity of invertebrate species that utilize a variety of habitats. Fifty-two insect species were observed during surveys. USGS pitfall surveys in 2003-2004 documented 28 native species of ants, including several species of harvester ant (*Pogonomyrmex rugosus*, *Messor andrei*, and *M. stoddardii*). No non-native species of ants were observed during these baseline surveys. During 2003 surveys by Mooney and Associates (2003) and 2005 surveys by EDAW (2005), 23 species of butterflies were recorded, including red admiral (*Vanessa atalanta*), perplexing hairstreak (*Callophrys dumetorum perplexa*), Felder's orangetip (*Anthocaris cethura*), and Quino checkerspot butterfly. Additionally, one wasp species, the tarantula wasp (*Pepsis formosa*), one aquatic macroinvertebrate species, the red swamp crayfish (*Procambarus clarkii*), and two arachnid species were also identified.

2. Fish

No permanent water bodies capable of supporting fish populations occur in the wildlife area. Two focused fish surveys were conducted by Department personnel within the wildlife area in

2002 (Hovey, personal communication 2006). These focused surveys were conducted over 2 days and covered all wetted portions of the spring-fed creek from its intersection with SR 94 upstream until dense vegetation prevented access. At the time of the survey, the creek reach between SR 94 and the first road/creek crossing upstream on the wildlife area was mostly dry. Department personnel shocked and seined upstream of both road/creek crossings in the wildlife area. One fish species was observed during these surveys: the western mosquitofish (*Gambusia affinis*).

3. Amphibians

Four amphibian species have been detected during surveys, including the garden slender salamander (*Batrachoseps major*), Pacific tree frog (*Pseudacris regilla*), California tree frog (*P. cadaverina*), and western toad (*Bufo boreas*). The garden slender salamander was the most commonly captured amphibian during 2003-2004 pitfall surveys conducted by USGS and CDFG and was captured primarily in grassland habitat. These salamanders are also found in coastal sage scrub, chaparral, oak woodlands, and wooded riparian canyons. The garden slender salamander has a relatively slightly wider habitat tolerance and can also be found in coniferous forest and occasionally in salt marshes. The two species of frogs that have been detected, the Pacific and California treefrogs, generally require the presence of water (shallow pools, flowing streams, or marshes) during some or all of their life cycle. Thus, they are more often associated with riparian vegetation but may also be found in adjacent upland habitats such as grasslands, coastal sage scrub, and chaparral. The western toad frequents a wide variety of habitats including streams and springs associated with grassland, woodland, scrub, and desert communities, and within relatively disturbed/urbanized areas.

4. Reptiles

The high diversity of reptiles within HCWA is supported by the presence of large, contiguous blocks of undeveloped native habitat. A total of 21 species are known to occur, including 10 lizard species and 11 snake species.

Reptile species that are found in a wide variety of habitats (i.e., generalists) include the western fence lizard (*Sceloporus occidentalis*), San Diego gopher snake (*Pituophis catenifer annectens*), common garter snake (*Thamnophis sirtalis*), and western rattlesnake (*Crotalus viridis*). Other lizard species detected that occur in grassland, coastal sage scrub, chaparral, and disturbed habitats within the LMP area include San Diego coast horned lizard (*Phrynosoma coronatum blainvilli*), granite spiny lizard (*Sceloporus orcutti*), common side-blotched lizard (*Uta*

stansburiana), western banded gecko (*Coleonyx variegatus*), Gilbert's skink (*Eumeces gilberti*), western skink (*Eumeces skiltonianus*), western whiptail (*Cnemidophorus tigris*), orange-throated whiptail (*Cnemidophorus hyperythrus*), and southern alligator lizard (*Elgaria multicarinata*). Snake species associated with dry terrestrial habitats include common kingsnake (*Lampropeltis getulus*), striped racer (*Masticophis lateralis*), California black-headed snake (*Tantilla planiceps*), western long-nosed snake (*Rhinocheilus lecontei lecontei*), red-diamond rattlesnake (*Crotalus ruber ruber*), and coastal rosy boa (*Charina trivirgata*). During dryer than average climatic conditions, these species may also be found within riparian corridors. Other snake species have slightly more specific habitat requirements such as the western blind snake (*Leptotyphlops humilis*), which requires loose, sandy soil for burrowing, and the ringneck snake (*Diadophis punctuatus*) which is associated with moist habitats.

5. **Birds**

Approximately 84 native bird species and 2 introduced bird species have been identified through diurnal surveys, point counts, and incidental observations throughout the LMP area. The following habitat-based descriptions of avian species diversity on-site represent a sampling of those species observed. For a complete list of avian species known to occur on HCWA, see Appendix D.

Generalist avian species widely distributed and common throughout HCWA include birds such as the turkey vulture (*Cathartes aura*), phainopepla (*Phainopepla nitens*), American crow (*Corvus brachyrhynchos*), Bewick's wren (*Thryomanes bewickii*), mourning dove (*Zenaidura macroura*), black phoebe (*Sayornis nigricans*), Anna's hummingbird (*Calypte anna*), house finch (*Carpodacus mexicanus*), western kingbird (*Tyrannis verticalis*), blue grosbeak (*Passerina caerulea*), and lesser goldfinch (*Carduelis psaltria*). Wintering species common throughout HCWA include the white-crowned sparrow (*Zonotrichia leucophrys*) and yellow-rumped warbler (*Dendroica coronata*).

Birds associated with coastal sage scrub and chaparral habitats on HCWA include the California towhee (*Polioptila crissalis*), California quail (*Callipepla californica*), greater roadrunner (*Geococcyx californianus*), wrentit (*Chamaea fasciata*), western scrub jay (*Aphelocoma californica*), southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*), Bell's sage sparrow (*Amphispiza belli belli*), and coastal California gnatcatcher (*Polioptila californica californica*). Summer visitors include Costa's hummingbird (*Calypte costae*). Mature chaparral on-site supports a variety of species, including birds such as the blue-gray gnatcatcher (*Polioptila caerulea*) and California thrasher (*Toxostoma redivivum*). Migratory species that have been detected within these habitats include Allen's hummingbird (*Selasphorus sasin*), Say's phoebe

(*Sayornis saya*), and hermit thrush (*Catharus guttatus*). Additionally, raptors such as the golden eagle (*Aquila chrysaetos*) may forage in scrub, chaparral, and grassland habitats on HCWA.

Riparian species found in marsh, riparian scrub, riparian woodland, and/or riparian forest on HCWA include three species of woodpeckers (*Colaptes auratus*, *Melanerpes formicivorus*, and *Picoides nuttallii*), oak titmouse (*Baeolophus inornatus*), bushtit (*Psaltriparus minimus*), common yellowthroat (*Geothlypis trichas*), and red-winged blackbird (*Agelaius phoeniceus*). Migratory species found within this habitat include Lawrence's goldfinch (*Carduelis lawrencei*), American goldfinch (*C. tristis*), ruby-crowned kinglet (*Regulus calendula*), northern rough-winged swallow (*Stelgidopteryx serripennis*), Lazuli bunting (*Passerina amoena*), black-headed grosbeak (*Pheucticus melanocephalus*), barn swallow (*Hirundo rustica*), black-chinned hummingbird (*Archilochus alexandri*), Pacific-slope flycatcher (*Empidonax difficilis*), ash-throated flycatcher (*Myiarchus cinerascens*), Hutton's vireo (*Vireo huttoni*), and yellow warbler (*Dendroica petechia*).

Areas dominated by mature oaks on HCWA support bird species such as the house wren (*Troglodytes aedon*), western bluebird (*Sialia mexicana*), and Cassin's kingbird (*Tyrannus vociferans*). Migratory species include Swainson's thrush (*Catharus ustulatus*), hooded oriole (*Icterus cucullatus*), Bullock's oriole (*I. bullocki*), western wood-peewee (*Contopus sordidulus*), western tanager (*Piranga ludoviciana*), and cedar waxwing (*Bombycilla cedrorum*). The relatively large size of HCWA and oak woodland on-site provides suitable habitat for nesting and perching raptors including the red-tailed hawk (*Buteo jamaicensis*) and American kestrel (*Falco sparverius*). Also present and potentially nesting within the oak woodland habitat on-site are the white-tailed kite (*Elanus leucurus*), red-shouldered hawk (*Buteo lineatus*), and Cooper's hawk (*Accipiter cooperii*). Owl species detected within the LMP area and potentially nesting in the oak woodland habitat on-site include the barn owl (*Tyto alba*).

Grassland specialists include the western meadowlark (*Sturnella neglecta*) and grasshopper sparrow (*Ammodramus savannarum*). Grassland is also used as foraging habitat by a variety of raptors, particularly the white-tailed kite, northern harrier (*Circus cyaneus*), and red-tailed hawk. The northern harrier is known to also nest within grassland habitats. Two harrier nests/territories were documented by the Wildlife Research Institute (2004).

6. Mammals

Approximately 41 mammal species have been detected throughout the LMP area, including insectivores, bats, rabbits, rodents, carnivores, and ungulate species. The following habitat-

based descriptions of avian species diversity on-site represent a sampling of those species observed. For a complete list of mammal species known to occur on HCWA, see Appendix D.

HCWA supports a high diversity of bat species including 13 of the 16 species commonly found in San Diego County (USGS 2005a). These bats roost and forage in a wide diversity of habitats, depending upon species-specific requirements. Habitat generalists that utilize many habitats include the Mexican free-tailed bat (*Tadarida brasiliensis*), pocketed free-tailed (*Nyctinomops femorosacca*), big brown bat (*Eptesicus fuscus*), California myotis (*Myotis californicus*), Big free-tailed bat (*Nyctinomops macrotis*), and western small-footed myotis (*M. ciliolabrum*). Bat species known to forage within riparian areas include the Yuma myotis (*Myotis yumanensis*) and western red bat (*Lasiurus blossevillii*). Foraging activities of other species, such as the western mastiff (*Eumops perotis*), pallid bat (*Antrozous pallidus*), western pipistrelle (*Pipistrellus hesperus*), and long-eared myotis (*Myotis evotis*), occur within dryer terrestrial habitats, such as desert, chaparral, oak woodland, scrub, and grassland habitats. Bats commonly associated with roosting and foraging primarily within forested habitats and that may roost within oak woodlands on-site include the long-eared myotis and hoary bat (*Lasiurus cinereus*).

Other mammal species within HCWA are common residents of chaparral, coastal sage scrub, and/or grassland habitat. Species found within these habitats include the black-tailed jackrabbit (*Lepus californicus*), desert cottontail (*Sylvilagus audubonii*), California ground squirrel (*Spermophilus beecheyi*), Botta's pocket gopher (*Thomomys bottae*), San Diego pocket mouse (*Chaetodipus fallax fallax*), California pocket mouse (*C. californicus*), and San Diego kangaroo rat (*Dipodomys simulans*). Other small mammals identified on-site include 10 species of mice and voles, including desert woodrat (*Neotoma lepida*) and dusky-footed woodrat (*N. fuscipes*), and two species of shrew, *Notiosorex crawfordi* and *Sorex ornatus*. Only one non-native small mammal species was identified on-site, the house mouse (*Mus musculus*), which does not pose a threat to native fauna.

The small mammal assemblage and mule deer (*Odocoileus hemionus*) that are present on HCWA provide a solid prey base for the medium to large carnivores. The most common predators found in the LMP area are the coyote (*Canis latrans*), gray fox (*Urocyon cinereoargenteus*), bobcat (*Lynx rufus*), and mountain lion (*Felis concolor*). Although the long-tailed weasel (*Mustela frenata*), raccoon (*Procyon lotor*), and striped skunk (*Mephitis mephitis*) also eat small mammals, they have a more diverse diet preference and will scavenge for invertebrates, frogs, lizards, birds, eggs, acorns, and fruit. The ringtail (*Bassariscus astutus*) is another opportunistic species known to occur in the LMP area.

C. ENDANGERED, THREATENED, MSCP COVERED, AND OTHER SPECIAL STATUS SPECIES

Special status plant and wildlife species are species that are either legally protected under the federal ESA, California ESA, or other regulations, or species considered by the scientific community to be sufficiently rare to qualify for such listing. Special status species include species listed or proposed for listing as endangered or threatened under the federal ESA (USFWS 1999a), the California ESA (CDFG 2005b, c), or the California Native Plant Protection Act. Also included below are species that are of special concern to the Department (CDFG 2005d), are species of special concern to the USFWS (USFWS 2005), are considered “covered species” within the MSCP, are fully protected in California, are covered under the Migratory Bird Treaty Act, or are covered under the Bald Eagle Protection Act. Furthermore, it is mandatory that California Native Plant Society (CNPS) lists 1A, 1B, and 2 species be fully considered within this LMP as they meet the definitions of Section 1901, Chapter 10 (Native Plant Protection Act) or Sections 2062 and 2067 (California ESA) during the preparation of environmental documents relating to CEQA (CNPS 2001). All species identified through California Natural Diversity Database (CNDDDB) searches known to occur or to have occurred within the project vicinity are considered below. Finally, species listed on the National Audubon Society bluelist or on the Western Bat Working Group sensitivity ranking are considered below as well.

Sensitive plant and animal species that have been recorded as occurring within HCWA are summarized below. Also discussed is the potential for numerous other sensitive species to occur on HCWA that have not been recorded for the property, but are known to occur in the region surrounding the HCWA. The potential for these additional species to occur on the site, i.e., a high, moderate, or low potential, is based on various factors. These factors are summarized below.

High: Species with known recent (i.e., last 25 years) recorded occurrences/populations nearby (i.e., within the same USGS quadrangle map or an adjacent quadrangle map) and for which highly suitable habitat occurs within the survey area. Suitable habitat includes all necessary habitat elements to support the species (habitat type, soils, cover, food resources, etc.).

Moderate: Species with known recent (i.e., last 25 years) recorded occurrences/populations nearby (i.e., within the same USGS quadrangle map or an adjacent quadrangle map); however, suitable habitat within the survey area is moderately

disturbed. Suitable habitat for the species could be fragmented or small/limited in size. Additionally, a “moderate” assessment would be made for species for which suitable habitat occurs within the survey area, but the survey area is near the edge of the species’ range or there are no reported occurrences/populations from surveys of nearby areas.

Low: Species with few known recent (i.e., last 25 years) recorded occurrences/populations nearby (i.e., within the same USGS quadrangle map or an adjacent quadrangle map), but suitable habitat within the survey area is highly disturbed or extremely limited in area. Also, species with known historic (i.e., more than 25 years) recorded occurrences/populations from the site or nearby; however, the suitable habitat on-site has been severely reduced or disturbed since past documentation. Additionally, species for which potentially suitable habitat is present within the survey area, but the reported extant range is far outside the survey area. For plant species only, a low potential would be assigned to annual or perennial species that would have been detectable during a focused survey during the appropriate blooming period but were not found; however, small populations or scattered individuals are still considered to have a low potential to occur.

1. Sensitive Plants

Sensitive plant species known to occur or expected to occur are listed below in Table 10. A discussion of the federal and state listed species, and non-listed sensitive species detected on-site or with the potential to occur is also provided below.

Table 10
Sensitive Plant Species Known to Occur or
with a Potential to Occur within the Hollenbeck Canyon Wildlife Area

Scientific Name	Common Name	Sensitivity Status			Potential to Occur within HCWA ⁴
		USFWS/ CDFG Listing ¹	MSCP ²	CNPS ³	
<i>Acanthomintha ilcifolia</i>	San Diego thornmint	FT, SE	C, NE	List 1B	D
<i>Achnatherum diegoense</i>	San Diego County needlegrass			List 4	D
<i>Arctostaphylos otayensis</i>	Otay manzanita		C	List 1B	L
<i>Artemisia palmeri</i>	Palmer’s sagewort			List 4	D
<i>Astragalus deani</i>	Dean’s milkvetch			List 1B	L
<i>Astragalus oocarpus</i>	San Diego locoweed			List 1B	M
<i>Brodiaea orcuttii</i>	Orcutt’s brodiaea		C	List 1B	L-M
<i>Ceanothus cyaneus</i>	Lakeside ceanothus		C, NE	List 1B	L
<i>Chorizanthe leptotheca</i>	Ramona spineflower			List 4	D
<i>Clarkia delicate</i>	Delicate clarkia			List 1B	D

Scientific Name	Common Name	Sensitivity Status			Potential to Occur within HCWA ⁴
		USFWS/ CDFG Listing ¹	MSCP ²	CNPS ³	
<i>Comarostaphylos diversifolia</i> ssp. <i>diversifolia</i>	Summer holly			List 1B	L
<i>Convolvulus simulans</i>	Small-flowered morning-glory			List 4	D
<i>Cylindropuntia californica</i> var. <i>californica</i>	Snake cholla		C, NE	List 1B	D
<i>Deinandra conjugens</i>	Otay tarplant	FT, SE	C, NE	List 1B	L
<i>Deinandra floribunda</i>	Tecate tarweed			List 1B	L
<i>Dichondra occidentalis</i>	Western dichondra			List 4	H
<i>Dudleya variegata</i>	Variegated dudleya		C, NE	List 1B	L
<i>Ericameria palmeri</i> ssp. <i>palmeri</i>	Palmer's ericameria		C, NE	List 1B	L-M
<i>Fremontodendron mexicanum</i>	Mexican flannelbush			List 1B	L
<i>Harpagonella palmeri</i>	Palmer's grappling-hook			List 4	D
<i>Horkelia truncate</i>	Ramona horkelia			List 1B	L
<i>Isocoma menziesii</i> var. <i>decumbens</i>	Decumbent goldenbush			List 1B	L
<i>Iva hayesiana</i>	San Diego marsh elder			List 2	M-H
<i>Juncus acutus</i> ssp. <i>leopoldii</i>	Southwestern spiny rush			List 4	D
<i>Lepechinia ganderi</i>	Gander's pitcher sage		NE	List 1B	L
<i>Lepidium virginicum</i> var. <i>robinsonii</i>	Robinson pepper-grass			List 1B	M
<i>Machaeranthera juncea</i>	Rush-like bristle bush			List 4	D
<i>Monardella hypoleuca</i> ssp. <i>lanata</i>	Felt-leaved rock mint		C	List 1B	H
<i>Muilla cleavelandii</i>	Cleveland's goldenstar		C	List 1B	L
<i>Myosurus minimus</i> ssp. <i>apus</i>	Little mousetail			List 3	L
<i>Quercus engelmannii</i>	Engelmann oak			List 4	D
<i>Ribes canthariforme</i>	Morena currant			List 1B	L
<i>Romneya coulteri</i>	Coulter's matilija poppy			List 4	M
<i>Saltugilia caruifolia</i>	Caraway-leaved gilia			List 4	L
<i>Satureja chandleri</i>	San Miguel savory		C	List 1B	M
<i>Senecio ganderi</i>	San Diego butterweed	SR	C	List 1B	L
<i>Stemodia durantifolia</i>	Blue streamwort			List 2	L
<i>Tetracoccus diocus</i>	Parry's tetracoccus		C	List 1B	L
<i>Viguiera lacinata</i>	San Diego viguiera			List 4	D

¹ U.S. Fish and Wildlife Service (USFWS) listings: **FT** - Federally Threatened

California Department of Fish and Game (CDFG) rankings: **SE** - State Endangered; **SR** - State Rare

² Multiple Species Conservation Program (MSCP): **C** - Covered under the MSCP; **NE** - Narrow Endemic

³ California Native Plant Society (CNPS) listing:

List 1B - Plants rare, threatened, or endangered in California or elsewhere

List 2 - Plants rare, threatened, or endangered in California but more common elsewhere

List 3 - Plants we need more information for

List 4 - Plants of limited distribution, a watch list

⁴ Potential to occur within the wildlife area: **D** - Detected; **H** - High potential to occur based on presence of highly suitable habitat and known occurrences within the vicinity of the wildlife area; **M** - Moderate potential to occur based on presence of moderately suitable habitat and/or known occurrences within the vicinity of the wildlife area; **L** - Low potential to occur, based on lack of, or minimal amount of suitable habitat and few known occurrences within the vicinity of the wildlife area.

Threatened and Endangered Plant Species

Only one federally threatened and state endangered plant species, San Diego thornmint (*Acanthomintha ilicifolia*), has been detected on-site. This species was observed in the same

location during surveys conducted in 2004 by the Department, and again during 2005 surveys conducted by EDAW (2005). Two additional listed species, Otay tarplant (*Deinandra conjugens*) and San Diego butterweed (*Senecio ganderi*), have a low potential to occur. These three species are described further below.

Species Detected On-site

San Diego thornmint, a federally threatened, state endangered, MSCP covered species, is the only listed plant species that was observed on HCWA during surveys. Several patches, totaling approximately 2,020 individuals, occur on the grassland/clay lens in the north-central portion of HCWA (Figure 13). This population occurs on a mesa between Jamul Creek (to the west) and Hollenbeck Canyon (on the east) on soils mapped as Bonsako stony clay. This small outcrop of this soil series measures approximately 5 to 10 acres in area and is the only locality for this soil type mapped for this USGS quadrangle (Bowman 1973). As such, this small area represents a very unusual and rare edaphic, ecological island. Additional information about the Bonsako stony clay soil is presented in Section II, Subsection C.

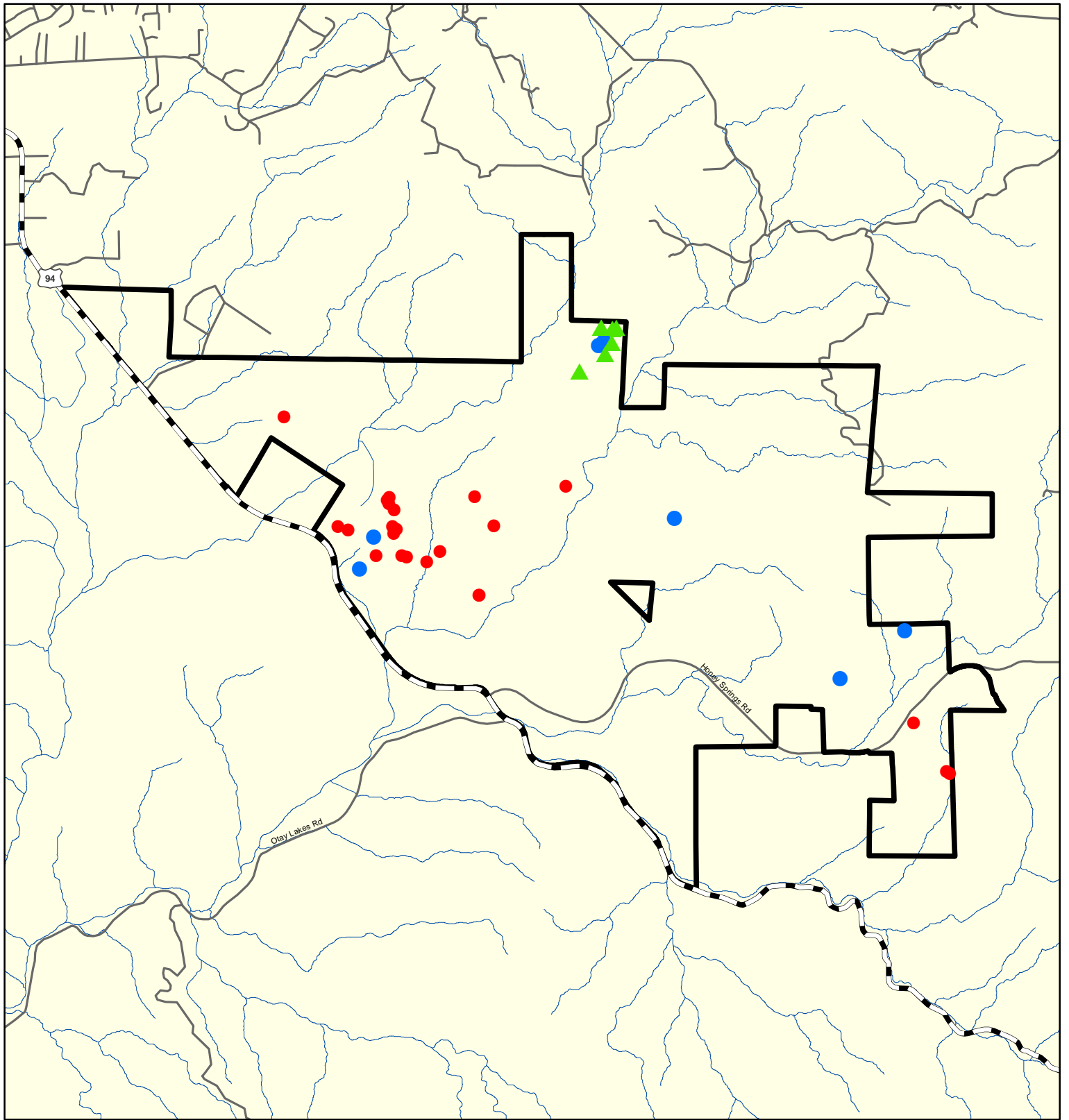
Species with Potential to Occur On-site

One federally threatened, state endangered plant species, Otay tarplant, is known to occur in the vicinity of HCWA. Otay tarplant is also an MSCP covered species that is documented from RJER. This species has not been documented from HCWA, though it has the potential to occur in the grasslands and the open sage scrub areas underlain by clay soils. The adjacent RJER population represents a bit of a range extension for this species, and there are no known populations east of RJER.

One state listed, MSCP covered species known within the vicinity of HCWA is San Diego butterweed, designated as a state rare species. San Diego butterweed is a gabbro endemic and is known from McGinty Mountain just north of HCWA. This species has not been documented from HCWA but could occur in areas of gabbro soil.

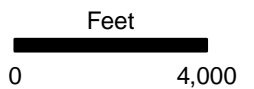
Non-listed, Sensitive Plant Species

In addition to the threatened and endangered species discussed above, an additional 36 plant species are known to occur or have a potential to occur within the LMP area.



- Legend**
- California Gnatcatcher
 - Quino Checkerspot
 - ▲ San Diego Thornmint

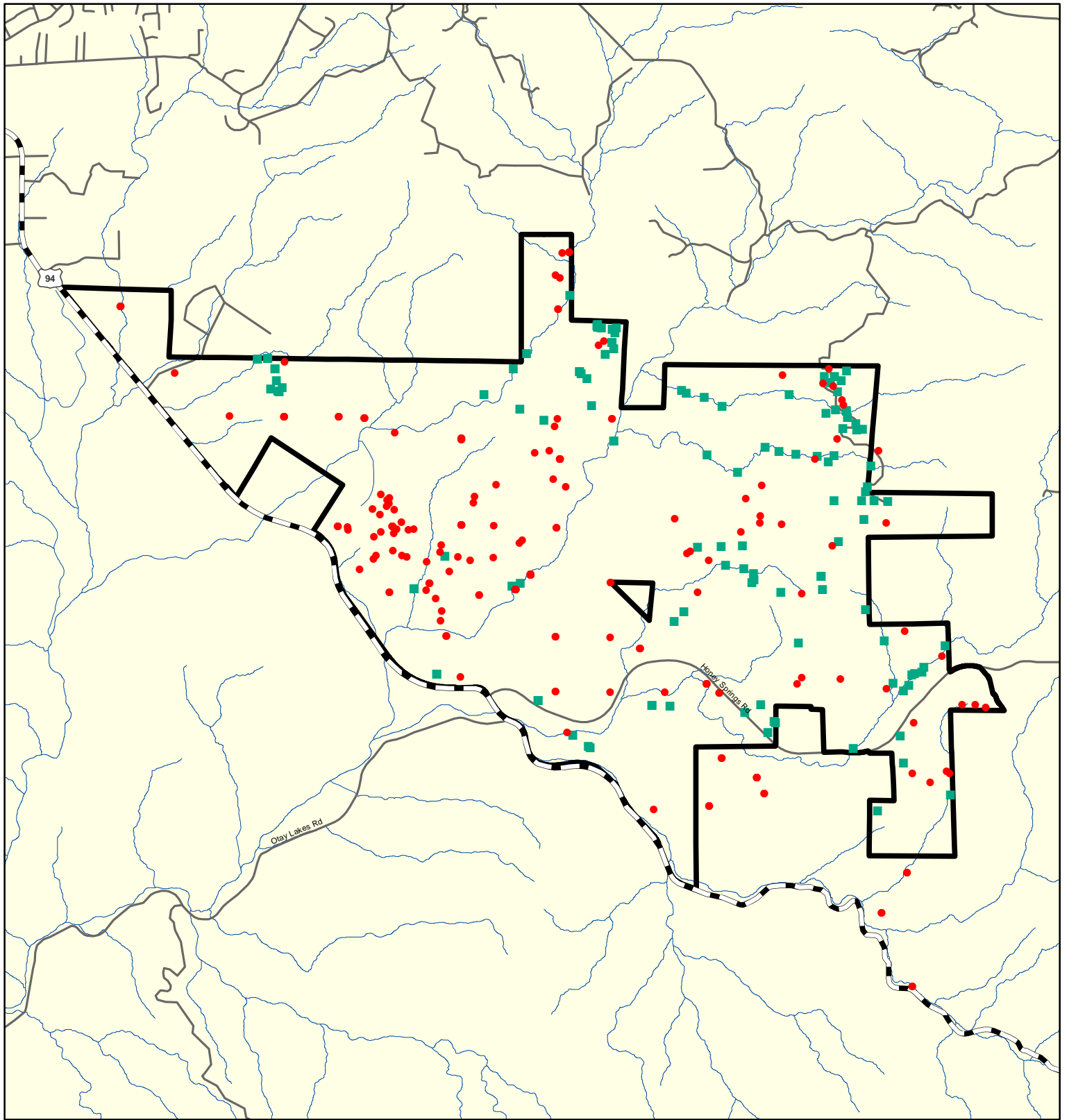
- Basemap Legend**
- HCWA Boundary
 - State Highway
 - Road
 - Stream



Species Detected On-site

A total of 11 non-listed sensitive plant species have been reported from HCWA. These consist of two CNPS List 1B species: delicate clarkia and snake cholla; and nine CNPS List 4 species: San Diego County needlegrass (*Achnatherum diegoense*), Palmer's sagewort, Ramona spineflower, small-flowered morning-glory, Palmer's grappling-hook, southwestern spiny rush, rush-like bristle bush, Engelmann oak, and San Diego viguiera (*Viguiera lacinata*). A brief description of the occurrence of these species within HCWA, including notes about their habitat affinities, is provided below. Additional information about the soil affinities associated with many of the sensitive plants is presented in Section II, Subsection C. Species-specific mapping for non-listed sensitive species is not provided in this LMP; however, the location of non-listed sensitive plants is generally shown in Figure 14.

- Delicate clarkia occurs in the understory of oak woodlands. Seven occurrences, totaling approximately 200 individuals, are known within the Honey Springs parcel area. Additional occurrences of this species are expected in HCWA.
- Snake cholla was observed in disturbed sage scrub on HCWA. Three individuals were observed and specimens were submitted to Dr. Jon Rebman at the San Diego Natural History Museum for positive identification.
- San Diego County needlegrass is documented from Jamul Butte. Additional occurrences of this species are expected in other portions of HCWA underlain by gabbro soils.
- Palmer's sagewort occurs in the understory of riparian habitats. Three small populations of this species occur along several drainages on the Honey Springs parcel. Additional occurrences of this species are expected along other drainages in HCWA.
- Ramona spineflower occurs in openings of sage scrub and chaparral communities. Eight occurrences, totaling approximately 6,475 individuals, are known within the Honey Springs parcel. Additional occurrences of this species are expected in HCWA.
- Small-flowered morning-glory occurs on heavy clay soils. This species is documented from near the historic homestead on the north side of Hollenbeck Canyon.
- Palmer's grappling-hook also occurs on heavy clay soils. Six occurrences, totaling approximately 4,200 plants, are known on HCWA. Some of these occurrences are sympatric with the San Diego thornmint occurrences.



Legend
 ● Amphibians, Reptiles, Birds, Mammals
 ■ Plants

Basemap Legend
 — HCWA Boundary
 — State Highway
 — Road
 — Stream

North Arrow
 Feet
 0 4,000

-
- Southwestern spiny rush occurs along perennial streams. A small occurrence of three individuals is known from Hollenbeck Canyon.
 - Rush-like bristle bush occurs in open shrub habitats. Six occurrences, totaling approximately 37 individuals, are known on the Honey Springs parcel. Additional occurrences of this species are expected elsewhere on HCWA.
 - Engelmann oaks occur in oak woodlands and chaparral habitats. Approximately 300 to 350 individuals are scattered throughout HCWA.
 - San Diego viguiera is a co-dominant of the sage scrub habitats on HCWA. This is one of the most common shrub species on HCWA as it is estimated there are several hundred thousand individuals present. Because of the ubiquitous distribution, San Diego viguiera was not mapped.

One other plant species was observed that has the potential to be sensitive, but will require verification, i.e., Coulter's matilija poppy (*Romneya coulteri*).

- Approximately 26 individuals of matilija poppy (*Romneya* sp.) were observed within HCWA. Coulter's matilija poppy is a CNPS List 4 species that occurs in disturbed and/or burned areas. Positive identification could not be determined, as these individuals were not in bloom. However, subsequent encounters with any matilija poppy individuals when blooming stages were more optimal were determined to be the non-sensitive hairy matilija poppy (*Romneya trichocalyx*).

Species with Potential to Occur On-site

Besides the sensitive plant species documented from HCWA, an additional 26 non-listed sensitive species are known from the vicinity of HCWA but were not detected during the rare plant surveys. Table 10 addresses these species and summarizes their potential for occurrence on HCWA.

2. Sensitive Wildlife

Sensitive wildlife species known to occur or expected to occur are listed below in Table 11. A discussion of those federally and state listed species, and non-listed sensitive species detected on-site or with the potential to occur, is also provided below.

Table 11
Sensitive Wildlife Species Known to Occur or
with a Potential to Occur within the Hollenbeck Canyon Wildlife Area

Scientific Name	Common Name	Sensitivity Status			Potential to Occur within HCWA ⁴
		USFWS/ CDFG Listing ¹	MSCP ²	Other ³	
Invertebrates					
<i>Euphydryas editha quino</i>	Quino checkerspot butterfly	FE	NE	-	D
<i>Euphyes vestries harbisoni</i>	Harbison's dun skipper	-	NE	-	M
<i>Lycaena hermes</i>	Hermes copper	-	-	-	M
Amphibians					
<i>Bufo californicus</i>	arroyo toad	FE	C, NE	CSC	M
<i>Rana aurora draytonii</i>	California red-legged frog	FT	C, NE	CSC	L
<i>Scaphiopus hammondii</i>	western spade-foot toad	-	-	CSC	H
<i>Traicha torosa torosa</i>	California coast range newt	-	-	CSC	L
Reptiles					
<i>Anniella pulchra pulchra</i>	California legless lizard	-	-	CSC	M
<i>Charina trivirgata</i>	coastal rosy boa	-	C	CSC	D
<i>Clemmys marmorata pallida</i>	southwestern pond turtle	-	C, NE	CSC	L
<i>Cnemidophorus hyperythrus</i>	orange-throated whiptail	-	-	CSC	D
<i>Coleonyx variegatus</i>	western banded gecko	-	-	CSC	D
<i>Crotalus ruber ruber</i>	red diamond rattlesnake	-	-	CSC	D
<i>Eumeces skiltonianus</i>	western skink	-	-	CSC	D
<i>Phrynosoma coronatum blainvilli</i>	San Diego coast horned lizard	-	C	CSC	D
Birds					
<i>Accipiter striatus</i>	sharp shinned hawk	-	-	CSC	H
<i>Accipiter cooperi</i>	Cooper's hawk	-	C	CSC	D
<i>Agelaius tricolor</i>	tricolored blackbird	-	C	CSC	M
<i>Aimophila ruficeps canescens</i>	southern California rufous-crowned sparrow	-	C	CSC	D
<i>Amphispiza belli</i>	Bell's sage sparrow	-	-	CSC	D
<i>Aquila chrysaetos</i>	golden eagle	-	C, NE	BEPA/FP	D
<i>Asio flammeus</i>	short-eared owl	-	-	CSC	H
<i>Asio otus</i>	long-eared owl	-	-	CSC	M
<i>Athene cunicularia hypugaea</i>	burrowing owl	-	C, NE	CSC	H
<i>Buteo regalis</i>	feruginous hawk	-	C	CSC	M
<i>Buteo swainsoni</i>	Swainson's hawk	ST	C	-	M
<i>Campylorhynchus brunneicapillus</i>	coastal cactus wren	-	C, NE	CSC	M
<i>Circus cyaneus</i>	northern harrier	-	C	CSC	D
<i>Dendroica petechia</i>	yellow warbler	-	-	CSC	D
<i>Elanus leucurus</i>	white-tailed kite	-	-	FP	D
<i>Empidonax traillii eximus</i>	southwestern willow flycatcher	FE, SE	C, NE	-	L
<i>Eremophila alpestris actia</i>	California horned lark	-	-	CSC	H
<i>Falco columbarius</i>	merlin	-	-	CSC	H
<i>Falco mexicanus</i>	prairie falcon	-	-	CSC	M
<i>Falco peregrinus</i>	peregrine falcon	SE	C, NE	FP	M
<i>Haliaeetus leucocephalus</i>	bald eagle	FT, SE	-	BEPA	D
<i>Icteria virens</i>	yellow-breasted chat	-	-	CSC	M
<i>Lanius ludovicianus</i>	loggerhead shrike	-	-	CSC	H
<i>Otus flammeolus</i>	flamulated owl	-	-	Audubon Watchlist	M
<i>Pandion haliaetus</i>	osprey	-	-	CSC	L
<i>Polioptila californica californica</i>	coastal California gnatcatcher	FT	C	CSC	D

Scientific Name	Common Name	Sensitivity Status			Potential to Occur within HCWA ⁴
		USFWS/ CDFG Listing ¹	MSCP ²	Other ³	
<i>Progne subis</i>	purple martin	-	-	CSC	H
<i>Sialia mexicana</i>	western bluebird	-	C	-	D
<i>Vireo bellii pusillus</i>	least Bell's vireo	FE, SE	C, NE	-	H
<i>Vireo vicinior</i>	gray vireo	-	-	CSC	M
Mammals					
<i>Antrozous pallidus</i>	pallid bat	-	-	CSC, WBWG	D
<i>Chaetodipus californicus</i>	California pocket mouse	-	-	CSC	D
<i>Chaetodipus fallax fallax</i>	San Diego pocket mouse	-	-	CSC	D
<i>Corynorhinus townsendii</i>	Townsend's big-eared bat	-	-	CSC, WBWG	H
<i>Eumops perotis</i>	western mastiff bat	-	-	CSC, WBWG	D
<i>Felis concolor</i>	mountain lion	-	C	-	D
<i>Lasiurus blossevilli</i>	western red bat	-	-	WBWG	D
<i>Lasiurus cinereus</i>	hoary bat	-	-	WBWG	D
<i>Lepus californicus bennetti</i>	San Diego black-tailed jackrabbit	-	-	CSC	D
<i>Myotis ciliolabrum</i>	western small-footed myotis	-	-	WBWG	D
<i>Myotis evotis</i>	long-eared myotis	-	-	WBWG	D
<i>Myotis yumanensis</i>	Yuma myotis	-	-	WBWG	D
<i>Neotoma lepida</i>	desert woodrat	-	-	CSC	D
<i>Nyctinomops femorosacca</i>	pocketed free-tailed bat	-	-	CSC, WBWG	D
<i>Nyctinomops macrotis</i>	big free-tailed bat	-	-	CSC, WBWG	D
<i>Odocoileus hemionus</i>	mule deer	-	C	-	D
<i>Onychomys torridus</i>	southern grasshopper mouse	-	-	CSC	M
<i>Taxidea taxus</i>	American badger	-	C	CSC	M

¹ U.S. Fish and Wildlife Service (USFWS) listings: **BEPA** - Protected under the Bald Eagle Protection Act;

FE - Federally Endangered; **FT** - Federally Threatened

California Department of Fish and Game (CDFG) rankings: **FP** - Fully Protected; **SE** - State Endangered;

ST - State Threatened

² Multiple Species Conservation Program (MSCP): **C** - Covered under the MSCP, **NE**- Narrow Endemic

³ National Audubon Society (**Audubon**) **watchlist** – species facing population declines and/or threats, or with limited geographic ranges.

Western Bat Working Group (**WBWG**) Sensitivity ranking

CDFG: **CSC** - State of California Species of Concern

⁴ **D** - Detected on-site, **L** - Low potential to occur, **M** - Moderate potential to occur, **H** - High potential to occur

Threatened and Endangered Animal Species

Two federally listed species, the federally endangered Quino checkerspot butterfly and the federally threatened coastal California gnatcatcher, are known to occur on-site. One federally threatened, state endangered species, the bald eagle (*Haliaeetus leucocephalus*) was detected on-site by the USGS (2004a) as an incidental observation and by the Wildlife Research Institute (2004) during the winter. Five additional threatened or endangered wildlife species have a potential to occur within the LMP area. These include the federally endangered arroyo toad (*Bufo californicus*); the federally and state endangered southwestern willow flycatcher (*Empidonax traillii extimus*); the federally endangered, state threatened least Bell's vireo (*Vireo*

belli pusillus); the state endangered peregrine falcon (*Falco peregrinus*); and the state threatened Swainson's hawk (*Buteo swainsonii*). These species are described further below.

Species Detected On-site

The federally endangered Quino checkerspot butterfly has been detected in at least five different areas throughout HCWA (Figure 13). Although it is not covered by the MSCP, it is proposed to be covered through an amendment (County of San Diego 2005). Within the original acquisition area, at least 20 individuals were observed by EDAW biologists near Department-monitored San Diego thornmint populations at the northern end of the wildlife area, during vegetation mapping surveys. Sightings elsewhere within the wildlife area were made by Marschalek during focused surveys in 2005. Outside of the LMP area, five individuals were incidentally observed north of SR 94, south of Honey Springs Road. During focused protocol-level surveys conducted by Mooney and Associates in 2003 for the Honey Springs parcel, numerous sightings of individuals and pairs of Quino checkerspot butterfly occurred near the western, southern, and southeastern boundaries of the acquisition area (Mooney and Associates 2003). Additionally, the primary larval host plant for Quino checkerspot butterfly, dot-seed plantain, along with various nectar sources occurs throughout the wildlife area. Thus this species is expected to occur in all suitable habitat within HCWA. Additionally, the wildlife area is an important component of the conservation efforts for this species because it lies within USFWS Designated Critical Habitat, within the San Diego Otay Unit (USFWS 2002), and within the Southwest San Diego Recovery Unit designated in the USFWS recovery plan (USFWS 2003).

Several known Quino checkerspot butterfly occurrence complexes identified by the USFWS occur adjacent to the LMP area (USFWS 2003). The closest known occurrence complexes are present to the west of HCWA, within Otay Lakes, and to the south, within Dulzura. The wildlife area functions as part of a regionally important area with regard to landscape connectivity for Quino checkerspot butterfly, and the various occurrence complexes that are present within this region.

The coastal California gnatcatcher, a federally threatened and MSCP covered species, is also known to occur within the wildlife area (Figure 13). Approximately eight pairs and two individuals were detected during 2002 monitoring surveys by the Department, near the southwestern portion of the property, just north of SR 94 (CDFG 2002d). This species was also detected during 2003-2004 avian point count surveys conducted by USGS. Additionally, this species was detected by EDAW biologists in 2005, during vegetation mapping surveys and general wildlife surveys (EDAW 2005). One individual was noted in the middle-western portion

of the wildlife area, west of the excluded Sweeney parcel and north of Honey Springs Road, and another individual was detected within a riparian drainage at the southeastern portion of the Honey Springs parcel.

Outside of the wildlife area, coastal California gnatcatcher is known to occur to the west, within the RJER (USGS 2004a). Breeding populations of this species have also been recorded for the Jamul Mountains, Otay Lakes, and Otay Mesa (Unitt 2004).

The federally threatened, state endangered, and MSCP covered bald eagle was detected during USGS baseline surveys (USGS 2004a) and during a winter survey conducted by the Wildlife Research Institute (2004). However, these observations occurred incidentally. Suitable foraging and breeding habitat does not occur on HCWA. The closest known nest site occurs within Lake Henshaw in Santa Ysabel, San Diego County.

Species with Potential to Occur On-site

The federally endangered and MSCP covered arroyo toad has not been located on the property to date. Focused surveys were completed in 2003 by CDFG and found no arroyo toads on-site. However, the species has a moderate potential to occur along Jamul and Dulzura creeks where suitable habitat exists. The arroyo toad is considered to have the most specialized habitat requirements of any amphibian species in California (Jennings and Hayes 1994). Because the arroyo toad requires very specific breeding habitat conditions, its distribution is very limited. The species breeds in slow-moving, low-gradient (usually less than 2 percent), shallow streams with a substrate of sand or gravel, a minimum silt load, and adjacent sand bars (Jennings and Hayes 1994; USFWS 1994; Lannoo 2005). Outside of the breeding season, during their terrestrial phase, arroyo toads require stable sandy terraces, consisting mainly of deep, fine sand with sporadic gravel or cobble features (e.g., Jennings and Hayes 1994). This soil type commonly occurs along the riparian corridors where breeding occurs. This species is known to historically occur within Dulzura Creek (USFWS 1999b). The closest known location for the arroyo toad is within Sweetwater National Wildlife Refuge approximately 8 miles to the west.

The federally endangered southwestern willow flycatcher is also an MSCP covered species that has a low potential to occur on-site within willow riparian habitat. Due to the very limited distribution of this species and limited suitable habitat on-site, there is a low potential for this species to occur. The closest known occurrence of this species is the Sweetwater Reservoir to the northwest of HCWA. Subsequent surveys would be required to confirm the presence or absence of this species on-site.

The federally and state endangered least Bell's vireo is also an MSCP covered species with a moderate potential to occur within suitable riparian willow habitat within HCWA. It is known from Jamul and Dulzura creeks on RJER and may be found within the LMP area. Subsequent surveys would be required to confirm the presence or absence of this species on-site.

In addition to the four federally and state listed species mentioned above, the state endangered peregrine falcon and the state threatened Swainson's hawk have the potential to occur on-site. The peregrine falcon is also state protected and is covered under the MSCP. The Swainson's hawk is also a federal species of concern. Both avian species have a moderate potential to occur on-site during periods of migration.

Non-listed, Sensitive Wildlife Species

In addition to the federally and state listed species discussed above, 54 sensitive wildlife species are known to occur or have the potential to occur within HCWA based on biological surveys and CNDDDB searches. Of these, 42 species are classified by the Department as California state species of special concern, 15 species are covered under the MSCP, 5 species are considered narrow endemics under the MSCP, and 16 species are covered under another sensitivity category (Table 11).

Species Detected On-site

Twenty-nine, non-listed, sensitive wildlife species have been detected on HCWA. Of these, 19 species are classified by the Department as California state species of special concern, 10 species are covered under the MSCP, 1 species is considered a narrow endemic under the MSCP, and 12 are covered under another sensitivity category (Table 11). Species-specific mapping for non-listed sensitive species is not provided in this LMP; however, the location of non-listed sensitive animals is generally shown in Figure 13.

Six state reptile species of special concern including two that are also covered by the MSCP have been recorded during pitfall trapping surveys conducted by the USGS and CDFG in 2003-2004. These include the coastal rosy boa, orange-throated whiptail, western banded gecko, red-diamond rattlesnake, western skink, and coast horned lizard. These species are associated with coastal sage scrub, chaparral, and oak woodland habitats.

The southern California rufous-crowned sparrow, a state species of special concern and also an MSCP covered species, was detected throughout sage scrub habitats during 2005 surveys of the

Honey Springs parcel. Another state species of special concern associated with these habitats and detected on-site is the Bell's sage sparrow.

The yellow warbler, a state species of special concern, has been observed in riparian and oak woodland habitats within HCWA. Also, the western bluebird, an MSCP covered species, was detected within eucalyptus woodland habitat during 2005 surveys conducted by EDAW biologists.

An additional sensitive avian species recorded within HCWA is the grasshopper sparrow, which is typically associated with grasslands or open scrub. This species lacks official sensitivity recognition but is recognized as being in decline on a local level and/or throughout their range.

Sensitive raptor species covered under the MSCP, the Cooper's hawk and northern harrier, are known to nest on-site. Oak woodland habitat on the wildlife area is highly suited to Cooper's hawks, and grassland habitats on-site are suitable to support the northern harrier. In addition, the state fully protected species, the white-tailed kite, was observed within oak woodland and foraging over chaparral during 2005 surveys.

A number of MSCP covered mammal species and state species of special concern are found within HCWA due to their association with sage scrub and sometimes chaparral vegetation. These species include the San Diego black-tailed jackrabbit, San Diego pocket mouse, California pocket mouse, and Diego desert woodrat. Several bats designated as state species of special concern and sensitive by the Western Bat Working Group (WBWG) detected during USGS surveys include the pallid bat, western mastiff bat, pocketed free-tailed bat, and big free-tailed bat. Other bats detected designated as sensitive under the WBWG include the western red bat, hoary bat, long-eared myotis, and Yuma myotis.

Sign of two large MSCP covered mammal species, the mule deer and mountain lion, are common throughout HCWA.

An additional sensitive species recorded within HCWA is the grasshopper sparrow, which is typically associated with grasslands or open scrub. This species lacks official sensitivity recognition but is recognized as being in decline on a local level and/or throughout its range.

Species with Potential to Occur On-site

In addition to the 29 non-listed sensitive wildlife species detected on-site, 25 non-listed sensitive species have a potential to occur on-site. Of these species, all 25 are considered state species of special concern, 6 are covered by the MSCP, 4 are considered narrow endemics under the MSCP, and 2 species are covered under another sensitivity category (Table 11).

D. NON-NATIVE SPECIES

1. Non-native, Invasive Plant Species

Non-native plant species that have the ability to outcompete native plants, and ultimately change the character of a native habitat, are of great concern to the HCWA managers. The California Invasive Plant Council (Cal-IPC) has identified the exotic plant species that are considered most invasive in its 2006 *Cal-IPC Invasive Plant Inventory*. The 2006 Inventory has been used to assess the potential non-native plant species threats to HCWA. The Inventory rates plants as High, Moderate, or Limited, based on scoring for three criteria: ecological impact, invasive potential, and ecological amplitude and distribution. It is important to note that even those species rated as Limited are invasive and should be of concern to land managers. Although the impact of each plant varies regionally, its rating represents cumulative impacts statewide. Therefore, a plant whose statewide impacts are categorized as Limited may have more severe impacts in a particular region. Conversely, a plant categorized as having a High cumulative impact across California may have very little impact in some regions. Table 12 identifies the level of infestation of each non-native invasive plant based on site surveys, and the Cal-IPC rating. The Cal-IPC ratings used in Table 12 are described below.

- **High** – These species have severe ecological impacts on ecosystems, plant and animal communities, and vegetational structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal and establishment. Most are widely distributed ecologically, both among and within ecosystems.
- **Moderate** – These species have substantial and apparent—but generally not severe—ecological impacts on ecosystems, plant and animal communities, and vegetational structure. Their reproductive biology is conducive to moderate to high rates of dispersal, though establishment is generally dependent upon ecological disturbance. Ecological amplitude and distribution may range from limited to widespread.

- **Limited** – These species are invasive but their ecological impacts are minor on a statewide level or there was not enough information to justify a higher score. Their reproductive biology and other attributes result in low to moderate rates of invasiveness. Ecological amplitude and distribution are generally limited, but these species may be locally persistent and problematic.

Currently, HCWA has a relatively moderate invasive exotic species problem. As mentioned previously, a total of 47 non-native species (22 percent of the flora) are reported from HCWA. As noted above, this local pattern (i.e., HCWA) parallels regional (i.e., San Diego County) patterns as well. Simpson and Rebman (2001) state that approximately 22 percent of the flora of the county is non-native and naturalized. The highest number of non-native taxa belongs to the Asteraceae (9 observed) and Poaceae (12 observed).

Table 12
Invasive Weeds Present within the Hollenbeck Canyon Wildlife Area

Species	Level of Infestation	Cal-IPC Rating
Giant reed (<i>Arundo donax</i>)	Fairly common	High
Australian saltbush (<i>Atriplex semibaccata</i>)	Uncommon	Moderate
Wild oat (<i>Avena barbata</i>)	Fairly common	Moderate
Wild oat (<i>Avena fatua</i>)	Uncommon	Moderate
Black mustard (<i>Brassica nigra</i>)	Fairly common	Moderate
Ripgut grass (<i>Bromus diandrus</i>)	Common	Moderate
Foxtail chess (<i>Bromus madritensis</i> ssp. <i>rubens</i>)	Uncommon	High
Tocalote (<i>Centaurea melitensis</i>)	Uncommon	Moderate
Bull thistle (<i>Cirsium vulgare</i>)	Scarce	Moderate
Blue gum (<i>Eucalyptus</i> sp.)	Scarce (locally common)	Moderate
Slender mustard (<i>Hirschfeldia incana</i>)	Fairly common	Moderate
California burclover (<i>Medicago polymorpha</i>)	Common	Limited
Tree tobacco (<i>Nicotiana glauca</i>)	Uncommon	Moderate
Bermuda buttercup (<i>Oxalis pes-caprae</i>)	Uncommon	Moderate
Castor bean (<i>Ricinus communis</i>)	Scarce	Limited
Russian thistle (<i>Salsola tragus</i>)	Uncommon	Limited
Peruvian pepper tree (<i>Schinus molle</i>)	Scarce	Limited
Mediterranean schismus (<i>Schismus barbatus</i>)	Common	Limited
Milk thistle (<i>Silybum marianum</i>)	Scarce	Limited
Tamarisk (<i>Tamarix parviflora</i>)	Scarce	High

Non-native species have their highest relative concentration in areas previously heavily grazed such as the pastures on the flatter terrain in the western portion of the site. In these areas extensive stands of non-native grasses and forbs such as wild radish, black mustard (*Brassica nigra*), mustard, ripgut grass, foxtail chess, California burclover, and filaree are dominant. The

dominance of these particular species in these areas along with their presence (to a lesser extent) in adjacent native communities would restrict the ability for their eradication or control.

Many of the large areas of grasslands and open habitats that were previously intensively grazed occur along the flatter portions of HCWA, immediately adjacent to SR 94 and Honey Springs Road. These areas are dominated by introduced grasses and forbs. Much of these habitats is being actively managed for dove hunting. Part of this management has involved seeding these areas with cereal wheat and safflower to attract doves. Minor habitat conversion, i.e., replacing the highly invasive species with less invasive species such as wheat and other species through this continued seeding, would reduce the extent of some of the source populations of the more aggressive invasives on HCWA.

Conversely, many of the hillsides that burned in the Honey Fire of 1996 are characterized by open shrubs with a dense understory of non-native grasses. It is anticipated that over time these hillsides will recover to a denser native shrub cover.

Within HCWA, the three invasive species of greatest concern, based on the Cal-IPC rating (i.e., High) are tamarisk (*Tamarix* sp.), giant reed (*Arundo donax*), and foxtail chess (*Bromus madritensis*). All of these species have the potential to expand the limits of their current populations and/or establish new satellite populations within HCWA.

Foxtail chess is most prevalent within the grasslands and open habitats on HCWA. Foxtail chess alters patterns of wildfire, microhabitat characteristics, nutrient cycling and light, negatively affecting annual native plant populations. Additionally, foxtail chess is especially well adapted to fire, recovering to pre-burn densities rapidly after a fire. Fire can actually contribute to its spread, raising fuel loads, which increases the intensity and spread of fires resulting in damage to native species (Bossard et al. 2000).

Tamarisk occurs infrequently along the perennial drainages within HCWA. Tamarisk is associated with dramatic changes in geomorphology, groundwater availability, soil chemistry, fire frequency, and plant community composition. High evapotranspiration rates by this species can result in the lowering of groundwater tables. Soil salinities increase as a result of inputs of salt from glands on this species' leaves. Increased salinity inhibits the growth and germination of native riparian plant species. High amounts of leaf litter can increase the frequency of fire where tamarisk is dominant in cover; moreover, this species resprouts vigorously following fires. These effects on the ecosystem from the presence of tamarisk can result in this species dominating riparian communities (Bossard et al. 2000).

Giant reed occurs within Dulzura Creek and a neighboring unnamed tributary on HCWA. It is a robust perennial that may grow 9 to 30 feet tall, spreading from horizontal rootstocks below the soil, and often forms large colonies (Bossard et al. 2000). This invasive species displaces native plants and associated wildlife due to the immense stands it forms, competing with native plant species by monopolizing soils moisture and shading. The result is a reduction in habitat and food supply to wildlife, particularly insect populations, which adversely affect special status aquatic and riparian species. Giant reed is also suspected of altering hydrological regimes, reducing groundwater availability, altering channel morphology, and potentially presenting fire hazards, especially near urbanized areas (Bossard et al. 2000).

Many of the species in Table 12, such as some of the annual grasses, are common or fairly common throughout HCWA. Because they are ubiquitous, their threat of expansion is considered low (i.e., there is no unoccupied habitat for them to expand into in the absence of large-scale natural or human-induced disturbances).

Disturbance events, natural or human-induced, can have a markedly significant effect on the expansion of non-native species. Many of the species identified in Table 12 would have a very high expansion threat post-disturbance (e.g., fire, floods, extensive grazing, etc.). However, though natural disturbances such as flooding and fires are a certainty over the long term, in an attempt to prioritize the threat for purposes of this LMP, the expansion threat assessment is based upon a species' perceived threat in the absence of a large-scale disturbance.

2. Non-native Wildlife Species

Eight non-native wildlife species have been recorded from HCWA, and many of these are considered invasive pests (Table 13). Non-native wildlife species are considered invasive when they threaten native biodiversity by disrupting or altering native ecological communities and have negative consequences for native species and habitats. Invasive animal species outcompete, prey upon, or disturb the habitat of native wildlife and may spread diseases. This section describes non-native wildlife in HCWA and how these species may impact the native fauna in the wildlife area.

Table 13
Non-native Wildlife Known to Occur in the Hollenbeck Canyon Wildlife Area

Common Name	Scientific Name
Invertebrates	
Red swamp crayfish	<i>Procambarus clarkii</i>
Fishes	
Mosquito fish	<i>Gambusia affinis</i>
Birds	
Brown-headed cowbird	<i>Molothrus ater</i>
European starling	<i>Sturnus vulgaris</i>
Mammals	
Domestic dog	<i>Canis familiaris</i>
House cat	<i>Felis cattus</i>
House mouse	<i>Mus musculus</i>
Virginia opossum	<i>Didelphis virginiana</i>

Non-native Invertebrates

The red swamp crayfish is a non-native species that often has an adverse impact on native populations of invertebrates, fishes, and frogs due to its highly predatory nature. In addition, burrowing activities of the swamp crayfish can cause damage to water control structures such as earthen dams and levees (NECIS 2004; USGS 2005b). The red swamp crayfish has been documented within creeks on HCWA by the Department. No invasive insects were observed during the 2004 USGS surveys (USGS 2004a), including the Argentine ant (*Linepithema humile*), a common pest that often occurs near urban fringes. This non-native ant can outcompete native ant species but is unpalatable to the coast horned lizard, resulting in a decline in food availability for this sensitive species.

Non-native Fish

One non-native fish species, the mosquito fish (*Gambusia affinis*), was observed in the streamchannel within Hollenbeck Canyon during focused fish surveys in 2002 and arroyo toad surveys in 2003 conducted by the Department and is also known to occur in many of the non-connected wildlife drinkers that occur within HCWA (Dillingham personal communication 2006). The mosquito fish has been nominated among 100 of the world's worst invasive species by IUCN's Invasive Species Specialist Group (Lowe et al. 2000). Although the mosquito fish may negatively impact native species, it is also commonly used as a non-chemical method of mosquito control. The potential impact to native species must be weighed against the need to control mosquitoes, which are the vector for West Nile and other viruses. The mosquito fish

population within HCWA is expected to thrive given the perennial condition of this streamchannel unless efforts to control or eradicate this species are taken. Mosquito fish that occur in non-connected waterways/ponds within HCWA are less of a concern; however, mosquito fish populations in connected natural streams should be eradicated. Mosquito fish are currently kept as brood stock in the main pond at the adjacent RJER to be used throughout the ecological reserve area for mosquito control.

Non-native Amphibians and Reptiles

No non-native amphibians or reptiles have been documented within HCWA.

Non-native Birds

Two non-native avian species, the European starling (*Sternus vulgaris*) and the brown-headed cowbird (*Molothrus ater*), have been reported from HCWA. Both species are tied to the urban landscape. The European starling was purposefully introduced by Europeans over 100 years ago. However, the European starling is known to venture a field into natural habitat and compete with native birds for nest cavities. This has had a devastating effect on populations of the purple martin (*Progne subis*), a sensitive species with the potential to occur in HCWA, as well as woodpeckers and bluebirds throughout the United States. The brown-headed cowbird is a brood parasite that has migrated to the west coast from its original distribution in the Great Plains. It is attracted to seeds, larvae, and insects that are associated with manure of horses and livestock. This species does not build its own nests but rather lays its eggs in the nests of native birds who then feed and care for the young. Eggs and young of the native species that are already in the nest are usually pushed out. The cowbird is a contributor to the decline of several sensitive species, including the least Bell's vireo, California gnatcatcher, yellow warbler, and southwestern willow flycatcher.

Non-native Mammals

Domestic dogs (*Canis familiaris*) and domestic cats (*Felis catus*) are present on HCWA. Dogs have been detected throughout portions of the wildlife area, and house cat sign (tracks) were detected within the eastern portion of the wildlife area. These animals can have a devastating effect on the native populations of birds, mammals, lizards, and amphibians. For example, recent studies have shown that free ranging cats can kill hundreds of wild animals every year, and it is believed that the decline in native song sparrow population is partially due to predation

by the house cat (Coleman et al. 1997). The two other non-native species, the house mouse, and Virginia opossum (*Didelphis virginianus*), do not pose a major threat to native wildlife.

E. WILDLIFE-LINKED DISEASES

Wildlife-linked diseases are caused by harmful viruses or bacteria that can negatively impact wildlife, either directly or indirectly. These diseases present a threefold problem. First, they can weaken, sicken, or kill native wildlife thereby negatively impacting populations. This is especially worrisome in populations of rare or isolated species. Second, the infected wildlife can sometimes serve as vectors, passing the disease microorganisms on to humans, who may not have the appropriate immune response to fight off the infection. And third, vector control measures to protect humans can inadvertently harm native wildlife. The wildlife-linked diseases of greatest concern in the vicinity of HCWA are West Nile virus and Avian Influenza. Although neither has a high potential to occur on HCWA, these wildlife-linked diseases are discussed briefly below.

1. West Nile Virus

Originating in Uganda, the West Nile virus was first detected in the United States in 1999 (CDC 2005). It generally causes mild to moderate flu-like symptoms in humans but can also cause encephalitis (inflammation of the brain) or meningitis (inflammation of the lining of the brain and spinal cord). The virus is maintained through a complex life cycle involving wild birds and mosquitoes. Mosquitoes become infected with the virus by feeding on the blood of an infected bird. Humans, or other warm blooded animals, may become infected after being bitten by an infected mosquito, and there are records of infected reptiles as well (Boyce et al. 2004). The relevance of West Nile virus to the management of HCWA is that, in addition to impacting the health of people living nearby, this disease can potentially impact native wildlife directly through infected mosquito bites, or indirectly through vector control methods (Boyce et al. 2004). Rare or endangered birds may be especially at risk due to their limited population sizes and distribution. The Department routinely inspects HCWA for mosquito larvae in standing water and treats it as necessary. For more information on West Nile virus, go to the County of San Diego Vector Control website (<http://www.co.san-diego.ca.us/deh/chd/wnv/index.html>).

2. Avian Influenza

Avian Influenza (bird flu) is a viral infection in wild and domestic birds known as type A influenza. The Highly Pathogenic Avian Influenza (HPAI) H5N1 strain of the virus has not been found in North America as of June 2006. Wild waterfowl are the natural reservoirs of avian

viruses though most birds remain healthy and do not infect other birds or people. It is only when the virus mutates into the highly contagious strains that infected birds pose a health risk. Wild aquatic birds, especially of the orders *Anseriformes* (ducks, swans, and geese) and *Charadriiformes* (gulls, terns, and shorebirds) are carriers of the full variety of influenza A viruses (Harder and Werner 2006).

Avian influenza presents a threat to wild bird conservation in several ways. First, although most strains of avian influenza are relatively benign, HPAI H5N1 appears to be able to cause illness and death in many species of wild birds. Second, there may be speculation regarding wild birds spreading HPAI H5N1, resulting in calls for culling of wild birds to try to control or limit the spread of HPAI H5N1. Culling can be effective in controlling domestic animal diseases but there are no examples where culling of native wildlife has completely eradicated a wildlife disease (WCS 2005). Strategies that could help prevent the transmission of avian influenza, if detected in HCWA include monitoring, minimizing contact between domestic and wild bird populations, and educating people who regularly come in contact with bird populations. The Department is currently working with a multi-agency group to develop responses to various scenarios involving avian influenza (see the Department's website <http://www.dfg.ca.gov/avianflu/index.html> and associated fact sheets for more information).

F. HABITAT LINKAGES AND WILDLIFE MOVEMENT CORRIDORS

1. Habitat Linkages

Habitat linkages are patches of native habitat that serve as connections between other habitat patches and help reduce the adverse effects of habitat fragmentation. Although individual animals may not move through a habitat linkage, the linkage is a potential route for gene flow and long-term dispersal. Habitat linkages may serve both as habitat and avenues of gene flow for small animals such as reptiles, amphibians, and rodents. Habitat linkages may be represented by continuous patches of habitat or by nearby habitat "islands" that function as stepping stones for dispersal and movement (especially for birds and flying insects).

Several coordinated efforts have been made to identify critical wildlife movement corridors and habitat linkages throughout the state of California (CWC 2000), within San Diego County (Ogden 1996), and in the U.S./Mexican border region (CBI 2003a, 2004). Within the region of HCWA, the Otay Mountain-Cleveland National Forest linkage was identified by CWC (2000) as having a high priority for conservation. This linkage connects Otay Mountain and other federal and state protected lands near the Mexican border to the Cleveland National Forest, a large,

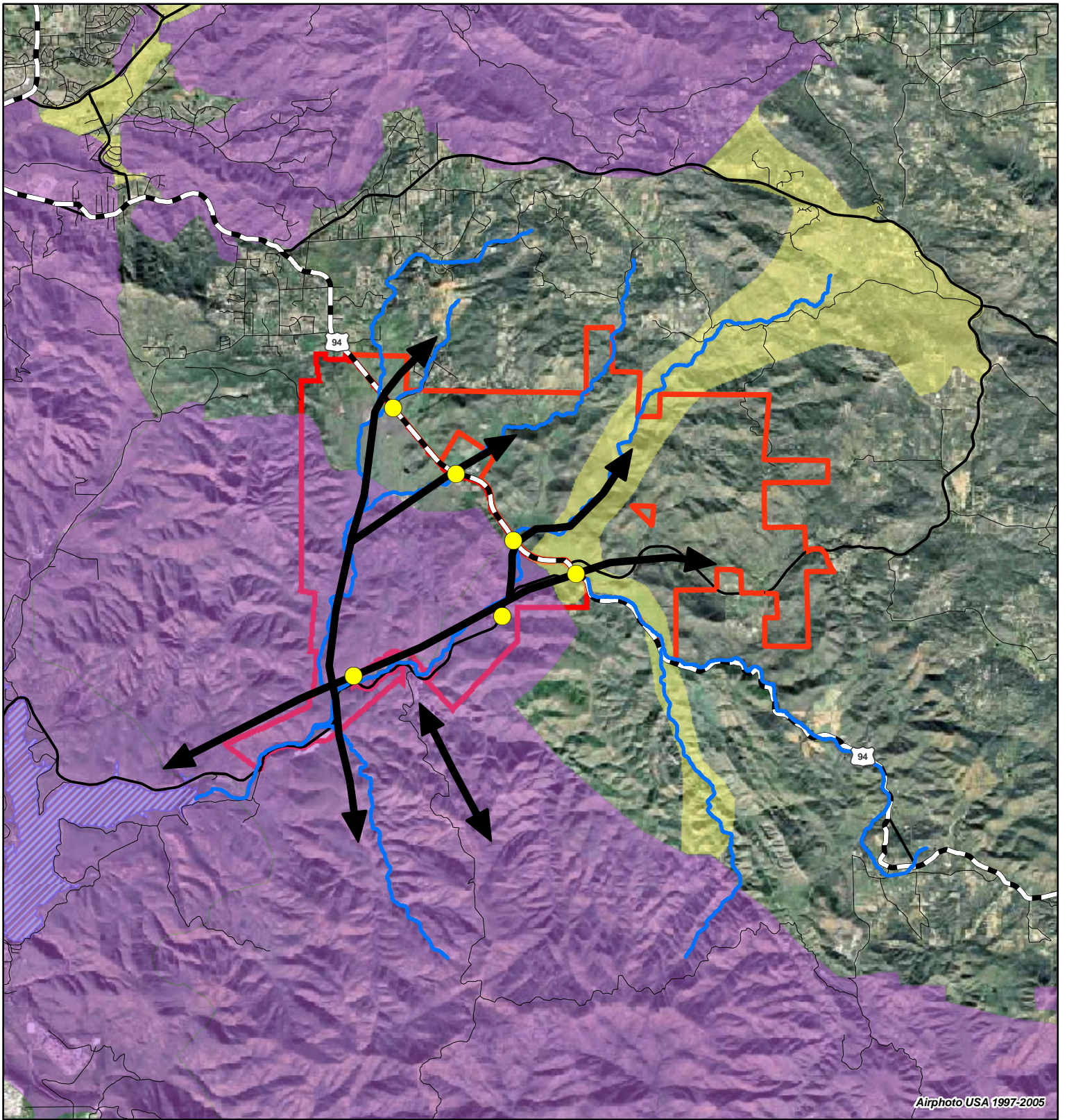
mostly contiguous area of federally protected land to the north. Taking a broader, bi-national perspective, this linkage fits within the Coastal Baja-Otay Mountain-Laguna Mountains critical linkage identified by CBI (2003a). The protected open space lands of HCWA and adjacent RJER are an important component of this regional linkage.

MSCP biological core and habitat linkage areas for the region surrounding HCWA are shown in Figure 15. A biological core area is land that is considered of great ecological importance to the MSCP. For example, it may contain biological resources that contribute to the survival of sensitive species, consist of a portion of a regional linkage/corridor, or contain large blocks of unfragmented habitat. Habitat linkages connect blocks of core areas to one another. Biological core and linkage areas were identified to assist local jurisdictions and special districts as one element to be considered in identifying their portion of the MSCP preserve system.

2. Wildlife Corridors

A wildlife corridor is a linear feature that allows animal movement between two patches of habitat. Corridors reduce the isolation of habitat fragments by providing a means for dispersal and genetic flow between habitats (CBI 2003b). Larger animals, such as the mountain lion and mule deer, tend to be more susceptible to habitat fragmentation due to their larger home ranges and, therefore, greater need for movement over a larger area of land. Smaller animals, such as the bobcat, although slightly less sensitive to habitat fragmentation, still require adequate movement corridors between habitat patches. However, some species, such as the coyote or raccoon, are fairly well adapted to disturbed habitat and are less vulnerable to changes in their environment. A chokepoint is a constricted segment of a corridor that restricts movement to some degree. A good example of this is a culvert underneath a highway that limits the functionality of wildlife movement by constricting the space through which wildlife can travel. As development continues to encroach upon rural southern California, maintaining wildlife corridors and habitat linkages will remain critical.

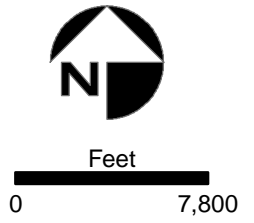
Wildlife movement corridors leading to and from HCWA are illustrated in Figure 15. Camera and track station surveys have shown that Dulzura Creek, including the tributary along Hollenbeck Canyon, and Jamul Creek are important movement corridors for a variety of medium- and large-sized mammals (USGS 2002; CBI 2003b). The wildlife moves in and out of the wildlife area through four culverts that cross underneath SR 94. SR 94 has been identified as a barrier to wildlife movement (CBI 2004), and the culverts act as a chokepoint in this area. Only one of these (at the southern branch of Jamul Creek) is large enough to accommodate the movement of mule deer (USGS 2002). Other species moving through the culverts include



Airphoto USA 1997-2005

- Legend**
- MSCP Biological Core Areas
 - MSCP Habitat Linkage Areas
 - Highway Undercrossings
 - Wildlife Movement Corridor

- Basemap Legend**
- HCWA and RJER Boundaries
 - State Highway
 - Major Road
 - Local Road
 - Stream
 - Lake/Reservoir



mountain lions, bobcats, coyotes, grey foxes, skunks, raccoons, and opossums. In addition to Dulzura and Jamul creeks, Little Cedar Creek to the south is considered a valuable movement corridor as well, facilitating north-south movement between the San Ysidro Mountains and the Jamul Mountains, Proctor Valley, and San Miguel Mountains via Jamul Creek (LMA 1994). An increase in development in the area will necessitate the enhancement of existing crossing structures, and the addition of new underpasses as traffic in the area increases. Wildlife fencing along SR 94 can also be used to reduce road kills.

IV. MANAGEMENT GOALS AND ENVIRONMENTAL IMPACTS

This chapter of the management plan identifies the goals and specific actions intended to protect biological and cultural resources within HCWA while providing for wildlife-dependent public use. The goals in this chapter provide broad guidance for management and are accompanied by practical tasks directed towards implementation. While providing for wildlife-dependent public uses, the goals are based on an ecosystem-based approach to management, which is consistent with the goals of the South County MSCP. Further, South County MSCP guidelines have been incorporated into this LMP. It is important to note that implementation of many of the tasks identified depends on availability of the necessary staff and an adequate operations and management budget. Thus, additional resources may be required to accomplish the task identified in this chapter. Additional discussion on this constraint is provided below for each management topic addressed in this chapter.

This chapter is organized by the following elements, as defined below: biological, public use, cultural resources, facility maintenance, scientific research and biological monitoring, fire management, and management coordination. Each element includes an introduction and a discussion of related opportunities and constraints. Each goal for a particular element and related tasks are numbered for cross-referencing within this chapter and Chapter V. Finally, the management described in this chapter was evaluated for its potential impact on the environment pursuant to CEQA. An Initial Study was prepared in accordance with CEQA Guidelines and submitted to the State Clearinghouse. The Department's Notice of Determination has also been filed with the State Clearinghouse. For each element in this chapter a general discussion of potential impacts is included after the discussion of element-specific goals and tasks.

A. DEFINITIONS OF TERMS USED IN THIS PLAN

This LMP has been developed in accordance with the Department's *A Guide and Annotated Outline for Writing Land Management Plans*, dated February 2003 (CDFG 2003). The Guide organizes management information into elements, goals, and tasks, establishing a hierarchy of management, that together express the policy direction for management of the subject property. The Guide provides the following definitions of the terms used in LMPs.

Element: An element refers to any biological unit, public use activity, or facility maintenance program as defined below for which goals have been prepared and presented within this plan.

Biological Element: These elements consist of species, habitats, or communities for which specific management goals have been developed within the plan.

Public Use Element: Public use elements are any recreational, scientific, or other public use activity appropriate to and compatible with the purposes for which the property was acquired.

Cultural Resources Element: Cultural resource elements refer to preservation of cultural resources.

Facility Maintenance Element: This is a general-purpose element describing the maintenance and administrative program, which helps maintain orderly and beneficial management of the area.

Scientific Research and Monitoring Element: This element consists of scientific research and monitoring activities that support the goals of the biological elements with respect to habitat management, habitat restoration, sensitive species protection, and public use.

Fire Management Element: These elements consist of any pre, during, and post fire activities that support the attainment of the management goals of this plan.

Management Coordination Element: This element consists of activities related to the coordination of management activities occurring in adjacent and regional open space lands.

Goal: A goal is the statement of the overall condition or result that this LMP is intended to achieve through management efforts.

Biological Goal: A biological goal is the statement of intended long-range results of management based upon the feasibility of maintaining, enhancing, or restoring species populations and/or habitat.

Public Use Goal: A public use goal is the statement of the desired type and level of public use compatible with the biological element goals previously specified within the plan.

Cultural Resources Goal: A cultural resources goal is a statement describing management and its intended results for cultural resources.

Facility Maintenance Goal: A facility maintenance goal is a statement describing management and the resulting type and level of facility maintenance (which is intended to support attainment of the goals for the biological and public use elements).

Scientific Research and Monitoring Goal: A scientific research and monitoring goal is a statement describing the type of scientific research and biological monitoring that is desired to support the biological goals.

Fire Management Goal: A fire management goal is a statement describing a desired component of fire management planning and coordination of activities occurring before, during, and after fires.

Management Coordination Goal: A management coordination goal is a statement describing the desired types of management coordination activities in support of biological elements and associated goals.

Tasks: Tasks are the individual projects or work elements that implement the goal and are useful in planning operation and maintenance budgets.

Several of the tasks presented in this LMP refer to adaptive management. The adaptive approach to management is defined below:

Adaptive Management: Adaptive management is a dynamic strategy in which management efforts are monitored regularly to assess their status and effectiveness. Monitoring results are then evaluated and used to update management goals and implementation strategies. The adaptive management and monitoring component is designed to provide sufficient data on the status of resources, identify trends, provide recommendations and a process for implementing remedial management actions, and provide a means to evaluate the efficacy of those actions. Where actions are shown to be insufficient, alternative management tools are developed and implemented.

Evaluating monitoring results and systematically adjusting actions, where needed, allows managers to respond to the actions they employ. Active adaptive management employs management programs that are designed to experimentally compare selected policies or practices by evaluating alternative hypotheses about the system being managed (BCFS 2003). The active adaptive management approach creates and tests hypotheses for likely remedial management actions, and then evaluates their efficacy to determine if further or alternative management actions are required. An active adaptive management program treats each management action as an experiment, and each monitoring strategy as a means to test a hypothesis, allowing a

management program to proceed even though knowledge may be incomplete about alternative approaches (CNLM 2001). Adaptive management (responsive and active) has been applied to all elements within this LMP.

Finally, many of the tasks described for the goals under each of the elements presented in this plan are interrelated. Therefore, where relevant, tasks are cross-referenced to minimize redundancy throughout this section.

B. BIOLOGICAL ELEMENTS

Four biological elements are discussed in this section: Habitat (wetlands/riparian and uplands), Special Status Species (threatened/endangered and non-listed), Managed Species (non-native or nuisance species), and Game Species (i.e., species that may be hunted). Within each element, several goals are identified along with tasks that will help implement each goal. Because this LMP uses an ecosystem level approach to management, consistent with the goals and policies of the Department and the MSCP Subarea Plan, management objectives will typically be discussed in terms of habitats rather than individual species. However, several federal and state listed species are addressed individually in the Sensitive Species Element. Finally, potential impacts due to management activities associated with the tasks described are discussed at the end of this section.

Within the biological elements, reference is made to both qualitative and quantitative surveys. These types of surveys are generally described below.

Qualitative Surveys: Qualitative biological surveys are conducted to generally assess and describe a habitat, species population, or other biological feature. The descriptions can consist of observations or other kinds of information that convey the quality of what is being evaluated. Qualitative surveys are conducted to determine the suitability of a feature (e.g., a vegetation community type) to support a resource (e.g., a species). Qualitative surveys are also conducted to evaluate the overall health of a feature to determine whether it is sustaining, degrading, or absent. Qualitative surveys do not involve measuring or counting specific attributes about a feature and typically do not involve a protocol; rather, qualitative surveys utilize a more general, random methodology.

Quantitative Surveys: Quantitative surveys are conducted to obtain measurable details about a habitat, species population, or other biological feature, e.g., a population size, acreage, frequency of a species occurrence or its density within an area, or other ratings.

Quantitative surveys are often performed during specific seasons when the resource is most obvious. In addition, quantitative surveys are often conducted at specific intervals (e.g., seasonally, or annually) to maximize the accuracy of the information collected. Results from repeat surveys may also be used to evaluate change over time. Numbers derived from quantitative surveys at one location may be compared with numbers derived from evaluations at another location to determine whether a resource is doing better or worse than a particular area. Quantitative surveys typically involve a resource-specific protocol or standard methodology to quantify the resource size.

Management opportunities and constraints that are associated with the goals and tasks presented for all biological elements are summarized below.

Opportunities

- Ecological diversity. HCWA significantly contributes to the conservation of ecological diversity and ecosystem integrity within the regional context of southern California and northern Mexico.
- Ecosystem-based management. Ecosystem level management has many advantages: it allows for the conservation and protection of numerous species at once; it protects the integrity of ecological processes; and it is much more cost-effective than a species-by-species approach. Managing and protecting the natural physical and biotic resources will help sustain the natural biodiversity within the wildlife area and protect sensitive species that utilize these habitats.
- Sensitive natural resources. By managing the property as a wildlife area, the Department plays an active role in the conservation of sensitive natural resources through the protection, conservation, enhancement, and restoration of natural habitat, all of which benefits the multiple sensitive species that depend on the diverse habitats within HCWA, as described in Section III.
- Wildlife movement corridors and habitat linkages. By managing the property as a wildlife area, the Department provides for the ongoing use of vital wildlife movement corridors and maintains valuable habitat linkages, features that provide for gene flow and species dispersal into new areas. Because wildlife movement corridors and habitat linkages are essential to the health and viability of plant and animal populations, it is essential to maintain these features within HCWA.

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- Value added. While HCWA currently supports and conserves high-quality biological resources and provides educational opportunities regarding those resources, there are numerous opportunities for enhancing and restoring areas where past or current uses have adversely affected biological resources, and for providing additional educational benefit to the public.
 - Compatible uses. As a wildlife area, the allowable wildlife-dependent public uses will be managed to ensure the goals for protecting and providing for no net loss of the current function of the native habitats are met, and the protection of the species that depend upon those habitats is constant.

Constraints

- Staffing. The primary constraint to habitat and species management, whether through maintenance or active restoration efforts, is funding for the staff that will be necessary to implement the tasks outlined below and also develop site-specific plans, as needed.
- Adjacent development. Increasing development to the north, including residential expansion and a large casino that is planned on the Jamul Indian Reservation, is expected to place additional pressure on the wildlife area and adjacent protected lands in a variety of ways:
 - Increased traffic in the area could result in more road kill of animals;
 - An increasing population may bring an increasing desire for additional public recreation, which may be at odds with habitat and species conservation and current wildlife-dependent uses;
 - Development can result in greater edge effects, including habitat fragmentation, invasion by non-native plant and animal species, and an increase in water flow or contaminants (such as pesticides, herbicides, and fertilizer) from the runoff of adjacent privately owned properties. Indirect impacts from surrounding development such as noise and lighting may also alter the natural state of the wildlife area.
- Past practices or events. The following past practices or events have had a negative impact on much of the habitat:
 - Grazing and agricultural practices of the previous landowner resulted in severe degradation of some of the riparian corridors and grasslands, which serve as

habitat, movement corridors, and nesting and feeding areas for a number of species. The extent of disturbance may make it difficult to eradicate nuisance or rapidly spreading non-native species.

- Unabated erosion along segments of some of the stream channels has resulted in the formation of steep gullies.
- Wildlife-linked diseases. Wildlife-linked diseases could potentially affect native wildlife species on the wildlife area directly through infection, or indirectly through vector control methods. For example, methods used to control mosquitoes, such as the use of pesticides or mosquito fish, may do more harm to the native populations than good. Great care should be taken before using these types of controls.
- Illegal activities. Illegal use of the property includes off-road vehicles, trash dumping, poaching, general access in unauthorized areas, and illegal immigration. These activities can cause harm to the environment by damaging habitat, increasing habitat fragmentation, and direct harm to wildlife. In particular, past unauthorized use of motorbikes within the HCWA has resulted in degradation of some of the highly sensitive coastal sage scrub/clay lens habitat, which supports two of the three known federally listed species that occur within HCWA.

1. **Bio 1 Element: Habitat**

The goals and tasks included in this section will help provide for no net loss of habitat value from the present conditions within the wildlife area, thereby maximizing the multi-species function of HCWA.

The Habitat Management goals and tasks are organized below according to those pertaining to wetland and riparian habitats, and those pertaining to upland habitats. For both of these categories (wetlands and uplands), the tasks pertain to management and enhancement of existing habitats, or restoration of habitats. For the purposes of this LMP, habitat enhancement and habitat restoration are defined as follows:

Enhancement: Activities conducted in existing habitats that increase, or provide for the increase, of one or more of the ecosystem functions (e.g., natural increase in native species cover, numbers, and diversity through the elimination of non-native species).

Restoration: Reestablishment of habitat characteristics and function(s) at a site where they have ceased to exist, or exist in a substantially degraded state (e.g., restored native habitat through the elimination of non-native species, physical remediation of degraded areas, and addition of native species characteristic of the area prior to disturbance).

Wetlands and Riparian Habitats

Bio 1.1 Goal – Wetlands and Riparian Habitat Management and Enhancement

Conserve, manage, and enhance wetlands and riparian habitat to promote native species diversity, genetic flow, and ecological and hydrological function.

Tasks:

Bio 1.1.1 **Survey and Ongoing Monitoring.** Conduct periodic surveys to maintain accurate records of the extent and condition of the wetland and riparian habitats within HCWA, and the functioning of the riverine systems.

- a) Qualitative surveys should be conducted annually to detect immediate threats to the habitats.
- b) Quantitative surveys should be conducted every 3 to 5 years to document changes and trends, and allow for timely remediation efforts, as needed. Characteristics to assess at representative locations include overall habitat structure and condition (i.e., under-story, mid-story, and upper-story), species diversity, and interconnection with neighboring habitats.

Bio 1.1.2 **Assess Threats and Set Priorities.**

- a) During general habitat condition surveys, map areas that are becoming damaged or degraded due to human-caused activities, or natural causes, such as weather or fire events. Issues of concern include adverse edge effects, fragmentation, or general habitat degradation. Signs of degradation include new introduction or expansion of non-native species, unnatural soil compaction, vegetation removal, erosion, increased sediment loads, and trash.

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- b) Prioritize remediation efforts based on relative sensitivity of the wetland or riparian type affected, whether a habitat connection is at risk, and potential for expansion of the threat.
 - c) Identify remediation measures (e.g., signage, installation of split-rail fencing, boulders, or other barriers).
 - d) Specific threats to the riparian corridors within HCWA are the trails that parallel Hollenbeck Canyon, Jamul Creek, and other stream channels. These features and the effect of their use must be evaluated to determine whether special improvements, e.g., stream crossings, closure after substantial rain events, or realignment away from the riparian corridor, are warranted (refer to Public Use element).

Bio 1.1.3 Management. Manage all wetlands and riparian habitats to maintain and enhance existing species and structural diversity.

- a) Prepare annual work plan by December for management to be conducted the following year. This plan should identify the management and restoration tasks that are to be completed, staffing requirements, a funding analysis, and schedule for completion.
- b) Manage wetland and riparian habitats for a variety of structure to provide breeding and foraging habitat for the species that occur or have the potential to occur on HCWA, and to accommodate a high diversity of native wildlife.
- c) Manage and enhance, as needed, the permanent water sources (e.g., Hollenbeck Canyon, upper reach of Jamul Creek, and Dulzura Creek near Border Patrol check station) to maintain the habitat diversity they provide within the wildlife area.
- d) Where feasible, implement a riparian and wetlands buffer (set-back) of 100 feet or more from the edge of riparian habitat to protect the riparian zone from public use, and to allow riparian drainages to meander. Realign segments of trails and management roads, if feasible, where these facilities are closer than 100 feet from the edge of riparian habitat (see also Bio 1.2.1 and Pub 5.2).

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- e) Implement erosion and sediment control best management practices (BMPs) as necessary to protect habitat (e.g., prevent gully formation and undercutting along riparian corridors).
 - Bio-engineered erosion control methods (e.g., straw wattles, logs, and boulders) should be chosen over hardscape methods.
 - Remove any sediment buildup that may threaten critical riparian habitat; otherwise, only remove sediment where loads threaten road crossings. Allow for natural sediment deposits and shifting.
 - f) Remove individuals of invasive, non-native plant species to reduce the threat of future expansion and enhance habitat for native species. Coordinate any herbicide applications with the Department's Pesticide Investigations Unit.
 - g) The mature pepper tree associated with the homestead site in Hollenbeck Canyon will be retained because of its historical connection; however, all progeny of the pepper tree should be removed.
 - h) Maintain and enhance wildlife corridors.
 - Remove impediments to wildlife movement as needed.
 - Monitor wildlife movement through culverts and assess the need to construct new or enhance existing structures.
 - Determine whether barriers (e.g., split rail fencing, boulders, etc.) are needed to limit public access into areas potentially critical for wildlife movement (e.g., narrow segments of drainages).
 - Continue to coordinate with other agencies, such as BLM, USFWS, and USFS to prioritize land acquisition such that large blocks of contiguous, protected lands will be created adjacent to HCWA and RJER.
 - i) Evaluate all future management programs for potential impacts to sensitive biological resources and take appropriate steps to mitigate potential significant impacts.

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- j) Implement adaptive management strategies by monitoring data. Re-evaluate priorities and management activities based on periodic assessments. Specific adaptive management approaches include:
- For each management goal, evaluate the potential to implement pilot studies or experimental design in which multiple management strategies are tested and compared to a control. For example, invasive species control could include three management areas – one with no treatment, and two with different treatments such as herbicide application and mechanical removal.
 - Establish success criteria (clear and concise objectives) that must be met to consider the management task(s) successful.
 - Use monitoring data to assess overall habitat integrity, detect changes in species distribution and abundance, and detect positive and adverse effects of management activities, human use, and non-native species.
 - Compile information relevant to monitoring program design, by regularly reviewing documents such as framework management plans, MSCP monitoring protocols, or reports about experimental design.
 - Reevaluate priorities and management activities based on this assessment.

Bio 1.2 Goal – Wetlands and Riparian Habitat Restoration

Restore and enhance wetlands and riparian habitat to foster desired ecological and hydrological function.

Tasks:

- Bio 1.2.1 Survey and Ongoing Monitoring. Identify areas where expansion or restoration of existing wetlands or riparian habitat could be conducted and would support the goals of this LMP. Coordinate efforts with those being conducted on the adjacent RJER. Specific restoration areas include those noted below; others may be identified after further site review.

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- a) Remove eucalyptus trees and giant reed where these non-native species dominates the riparian corridor, and subsequently restore the area via planting, seeding, monitoring, and additional remediation where needed. Target areas for eucalyptus removal and site restoration include the western segment of Jamul Creek within HCWA and Dulzura Creek near the old Honey Springs Ranch. Target areas for giant reed removal and site restoration are Dulzura Creek and an unnamed tributary in the Honey Springs Ranch parcel.
 - b) Restore riparian corridors that have become severely degraded by unabated erosion by localized ground recontouring, followed by planting, seeding, monitoring, and additional remediation of the area where needed. Target area for riparian restoration includes the unnamed tributary that flows into Hollenbeck Canyon in the west-central portion of the property where ongoing erosion has created a deep gully.
 - c) Unnecessary trails near wetland and riparian habitats should be decommissioned and restored. Segments of open trails may need to be realigned to provide a buffer of 100 feet or more from the edge of riparian habitat. Once realignment is complete, the previously open segments should be restored.
 - d) Restore one or more of the former stock ponds in the eastern portion of the wildlife area, near the old Honey Springs Ranch, for use by dog trainers (refer to Public Use and Facility Maintenance elements). Provide appropriate wetland vegetative cover useful for training exercises that will also provide localized habitat diversity for wildlife.
 - e) Create additional water sources for wildlife by developing springs or installing wildlife drinkers (i.e., artificial guzzlers) in upland areas.

Bio 1.2.2

Assess Threats and Set Priorities. Evaluate the potential benefits associated with the restoration projects identified then prioritize the projects for implementation.

- a) Prioritize areas to be restored by designating them as “high” (areas that should be restored immediately to avoid imminent damage to habitat or sensitive species), “medium” (areas that should be restored within

the next 3 years), and “low” (areas that should be monitored to ensure the degradation does not worsen, with area restoration conducted when time, budget, and staffing allow).

- b) Consider benefits to downstream riparian systems within HCWA and the adjacent RJER.
- c) Pursue projects that work with nature, rather than against it, by allowing creeks to meander naturally, rather than trying to force flow against its natural path. This method requires less ongoing maintenance.

Bio 1.2.3 Management. Design for and manage all wetlands and riparian habitat restoration to increase existing species and structural diversity.

- a) Develop area-specific restoration plans, including planting design and specifications, goals, and costs. Plans for areas that are heavily infested with non-native species should contain an intensive exotic species removal component, including herbicide treatment and replanting.
- b) Pursue appropriate permits for restoration projects within state and federal waters (i.e., wetlands and waters regulated under Section 404 of the Clean Water Act and Fish and Game Code Sections 1600-1616).
- c) Limit access, as appropriate, by fencing off restored areas to protect them from impacts due to unauthorized public use.
- d) Pursue funding for identified restoration projects.
- e) Conduct post-restoration monitoring.
- f) Adaptive management. Use monitoring data to assess progress of the restored area [refer to Bio 1.1.3 (j) for details].

Upland Habitats

Bio 1.3 Goal – Upland Habitat Management and Enhancement

Conserve and maintain upland habitats in a manner that conserves native regional biological diversity.

Tasks:

Bio 1.3.1 Survey and Ongoing Monitoring. Conduct periodic surveys to maintain accurate records of the extent and condition of the upland habitats within HCWA, and document changes.

- a) Qualitative surveys should be conducted annually to detect immediate threats to the habitats.
- b) Quantitative surveys should be conducted every 3 to 5 years to document changes and trends, and allow for timely remediation efforts, as needed. Characteristics to assess at representative locations include overall habitat structure and condition, species diversity, incidence of non-native species, and interconnection with neighboring habitats.
- c) Survey areas of oak woodland habitat to assess overall habitat integrity; detect changes from edge effects and potential fragmentation or degradation from unauthorized access, and signs of disease; and identify areas where site improvement is warranted.

Bio 1.3.2 Assess Threats and Set Priorities.

- a) During general habitat condition surveys, map areas that are becoming damaged or degraded due to human-caused activities, or natural causes, such as weather or fire events. Issues of concern include adverse edge effects, general habitat degradation, fragmentation (particularly native grasslands, coastal sage scrub/clay lens habitat, and oak woodlands), high fuel loads (particularly chaparral), and monotypic age classes. Signs of degradation include new introductions or expansions of non-native species, unnatural soil compaction, vegetation removal, erosion, trash, dense cover with high amounts of dead biomass.
- b) Prioritize remediation efforts based on relative sensitivity of the upland habitat affected, whether a habitat conversion is at risk, and potential for expansion of the threat.

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- c) Identify remediation measures, e.g., signage, installation of split-rail fencing, boulders, or other barriers to direct public use away from areas where adverse effects are occurring, and fuel reduction programs (refer to Fire 1.0).
 - d) Specific threats to upland habitats within HCWA are the trails that are located near the coastal sage scrub/clay lens habitat in the north-central portion of the wildlife area. These trails and the effect of their use must be evaluated to determine whether protective measures, e.g., installation of split-rail fencing, closure after substantial rain events, or realignment, are warranted [refer to Bio 2.1.3(b) and (c)].

Bio 1.3.3 Management. Manage all upland habitats to maintain and enhance existing species and structural diversity, or desired condition.

- a) Prepare annual work plan by December of the previous year (see Bio 1.1.3).
- b) Protect and maintain upland habitats to provide breeding and foraging habitat for the sensitive species that occur or have the potential to occur on HCWA.
- c) Manage upland habitats (particularly native grasslands, coastal sage scrub/clay lens habitat, and oak woodlands) to maintain habitat diversity, accommodate a high diversity of native wildlife species, and avoid conversion to another habitat type.
- d) Manage non-native grasslands in designated hunting areas by planting food crops (e.g., cereal wheat and safflower) to attract dove and quail.
- e) Provide erosion control where necessary to prevent gully or rill formation within uplands, and adverse sedimentation into adjacent riparian areas.
- f) Remove individuals of invasive, non-native plant species to reduce the threat of future expansion and enhance habitat for native species.
- g) Manage the non-native grassland habitat in the northern and west-central portions of the wildlife area for continued use by dog trainers, and to prevent severe degradation.

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- h) Determine whether barriers (e.g., split rail fencing, boulders, etc.) are needed to limit public access into areas potentially critical for wildlife movement (e.g., narrow segments of oak woodlands).
 - i) Evaluate all upland habitat management programs for potential impacts to sensitive biological resources and take appropriate steps to avoid or mitigate potential significant impacts.
 - j) Adaptive management. Refer to Bio 1.1.3 (j) for details.

Bio 1.4 Goal – Upland Habitat Restoration

Restore and enhance upland habitats in a manner that restores habitat functions and provides opportunities for the expansion or reintroduction of native upland species.

Tasks:

- Bio 1.4.1 Survey and Ongoing Monitoring. Identify areas where expansion or restoration of existing upland habitats could be conducted and would support the goals of this LMP. Coordinate efforts with those being conducted on the adjacent RJER. Specific upland habitat types and areas for restoration include those noted below; others may be identified after further site review.
- a) Grasslands. Exclusive of the hunting field where cereal wheat and safflower are sown to benefit dove and quail populations, the disturbed non-native grasslands in the west-central portion of HCWA between Jamul Creek and Hollenbeck Canyon is a candidate area for restoration and enhancement.
 - b) Coastal sage scrub/clay lens. Restore portions of this sensitive habitat have become degraded from invasion by non-native plant species and associated thatch buildup, and physical disturbance from motorbikes.
 - c) Unnecessary trails and roads should be decommissioned and restored. Segments of open trails may need to be realigned to provide a greater buffer near highly sensitive upland habitats, or to provide an appropriate buffer near riparian habitat (refer to Bio 1.1.3). Once realignment is complete, the previously open segments should be restored.

Bio 1.4.2 Assess Threats and Set Priorities. Evaluate the potential benefits associated with the upland restoration projects identified, then prioritize the projects for implementation.

- a) Prioritize areas to be restored by designating them as “high” (areas that should be restored immediately to avoid imminent damage to habitat and sensitive species), “medium” (areas that should be restored within the next 3 years), and “low” (areas that should be monitored to ensure the degradation does not worsen, with area restoration conducted when time, budget, and staffing allow).
- b) Consider benefits to sensitive species known to occur within HCWA and the adjacent RJER.
- c) Restore degraded upland areas to provide increased nesting, breeding, and foraging habitat for special status species and other wildlife.
- d) Restore degraded areas to provide increased habitat for game species.

Bio 1.4.3 Management. Design for and manage all upland habitat restoration to increase existing species and structural diversity.

- a) Develop area-specific restoration plans (refer to Bio 1.2.3)
- b) Pursue appropriate permits for restoration projects for habitats that are occupied by state and federally listed species (e.g., Quino checkerspot butterfly and San Diego ambrosia protected under Section 7 of the Endangered Species Act and Fish and Game Code Section 2081).
- c) Incorporate experimental design. An experimental approach for restoring highly disturbed non-native grasslands could evaluate the most effective method for restoring the larger area (i.e., test the most effective method for removal of thatch and new non-native vegetative growth through a combination of mowing, raking, grazing, limited herbicide application, and/or prescribed burns, followed by seeding, monitoring, and additional remedial efforts as needed). If managed grazing is used, exclusionary fencing (such as temporary T-post) should be placed around all riparian or newly restored habitats to avoid access by grazers, but maintain wildlife access.

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- d) Remove invasive plant species from the coastal sage scrub/clay lens habitat and restore the treated areas with appropriate native species via planting and seeding using stock collected from within HCWA.
 - e) Limit access, as appropriate, by fencing off restored areas to protect them from impacts due to unauthorized public use.
 - f) Pursue funding for identified restoration projects.
 - g) Conduct post-restoration monitoring and additional remediation, where needed.
 - h) Adaptive management. Use monitoring data to assess progress of the restored area [refer to Bio 1.1.3 (j) for details].

2. Bio 2 Element: Special Status Species

The high quality habitats within HCWA, the adjacent RJER, and neighboring conserved lands provide for regionally important high species diversity. The ecosystem approach to management presented in this LMP will provide protection for the many sensitive species that are known to occur within HCWA and other potentially occurring sensitive species (see Section III). The following goals and tasks summarize the most important management components to help provide for the long-term viability of populations of the more vulnerable species.

The management guidelines within this element are organized below according to those pertaining to Listed Rare, Threatened, and Endangered Species (Bio 2.1), and those pertaining to Non-listed Sensitive Species (Bio 2.2), including those covered by MSCP. Management of listed species should include all tasks in Bio 2.2, as well as the species-specific tasks outlined in Bio 2.1. The goals and tasks included in this section will help provide for the long-term viability of populations of the species of concern in this region.

Listed Rare, Threatened, and Endangered Species

A combination of general population management, enhancement, and restoration will be necessary to maintain and preserve the most sensitive species found on HCWA. These approaches are generally described below.

General Population Management: General population management pertains to those activities that will help contribute to the health and stability of the sensitive species

populations found on HCWA. These tasks should be conducted even if the populations appear stable in population area and/or density.

Population Enhancement: Population enhancement pertains to those activities that are intended to stop the decline of a sensitive species population as well as to stabilize the population. These tasks should be conducted if the population appears to be declining in area and/or density or if there is concern that it might decline in the near future.

Population Restoration: Population restoration tasks are activities that are intended to not only stop the decline and stabilize a sensitive species population, but also to improve the population's health. These tasks should be conducted if the population appears to be declining in area and/or density with a threat of extirpation, or if population enhancement techniques have not been sufficient to stabilize the population.

Bio 2.1 Goal – Protect and Enhance Populations of Federal and State Listed Species

Protect, monitor, and enhance populations and preferred habitat of federal and state listed species.

Tasks:

Bio 2.1.1 Surveys and Ongoing Monitoring. Conduct focused species surveys for all occurring or potentially occurring federal and state listed species. Target species include San Diego thornmint, Quino checkerspot butterfly, and coastal California gnatcatcher. Only qualified biologists may conduct surveys or behavioral studies on any federal and state listed species within HCWA.

- a) Qualitative surveys should be conducted annually to detect immediate threats to known populations of listed species within HCWA, and to generally assess the condition of the population.
- b) Protocol-level or other appropriate type of focused surveys should be conducted every 3 to 5 years to document species population health, count, and extent, and to allow for timely remediation efforts, as needed.
- c) Areas of suitable habitat, not currently known to support listed species, should be surveyed to detect new populations of listed species within the property.

Bio 2.1.2 Assess Threats and Set Priorities. Refer to Bio 2.2.2.

Bio 2.1.3 Management. In addition to the management tasks outlined in Bio 2.2, conduct the following general and species-specific management activities as needed:

- a) Restore and enhance native habitat preferred by rare, threatened, or endangered species known from or with the potential to occur at HCWA. Refer to Bio 1.2 and 1.4.
- b) Implement management measures for San Diego thornmint. Surveys in 2005 noted that a portion of the population had been recently impacted by illegal off-road activity that reached the site from the neighboring trail (coincident with this population is Quino checkerspot butterfly [see below], Palmer’s grappling hook, and small-flowered morning-glory).
 - Manage the invasive plant species within this area to minimize the decline of San Diego thornmint. The cover of weed species in and around the thornmint population is too high to expect the population to remain stable. Thornmint is known to be highly sensitive to weed invasion compared to other clay soil endemics (Bauder et al. 1994).
 - Install split-rail fencing along the access road to restrict illegal encroachment into the thornmint population. Extend the fencing from the access gate, down past the southerly clay lens area to protect the thornmint as well as the Quino checkerspot butterfly.
 - Install signage along the fencing, as appropriate.
 - Install permanent markers to document the outer boundary of the thornmint population. These markers will facilitate surveys by biologists and enhancement and restoration activities. The location of the markers should be recorded with Global Positioning System equipment.
 - Enhance the population. A program of dethatching around the thornmint will help stabilize the population. Dethatching (raking, hand clearing, and weed eating the dead remains of weed species

from the previous season) helps to reduce the organic thatch buildup and the non-native seed bank that restricts the germination and development of native species. Native seed should be collected prior to dethatching and then redistributed following dethatching. Dethatching should be conducted every 3 to 5 years until the desired condition is met.

- San Diego thornmint seed can be collected for distribution within the existing populations to fill in the gaps within the populations. Redispersal should only be done in appropriate areas adjacent to existing populations. Seed should be collected, stored at an appropriate facility, and then redistributed in the fall, prior to the next wet season.
 - As needed, restore the population. If thornmint populations continue to decline despite dethatching, additional weed control measures (herbicide use or mowing conducted by a qualified crew) should be considered. Coordinate all potential permit activities with the Department's Habitat Conservation Planning Branch (HCPB).
 - Conduct seed collection and greenhouse propagation if the populations of thornmint continue to decline despite population enhancement and restoration activities.
- c) Implement management measures for Quino checkerspot butterfly.
- Restore and expand Quino checkerspot habitat by planting appropriate areas with larval host species. Target areas for expansion should occur near existing habitat or along a flyway, and should consist of relatively flat topography and suitable soils, vegetation composition, and structure. Candidate locations include portions of the coastal sage scrub/clay lens habitat where host plants are lacking or uncommon, or appropriate openings within neighboring upland scrublands and native grasslands.
 - Control the fire frequency through an effective fire management program. The Quino checkerspot butterfly can survive a fire cycle of 20 years or more, but may be susceptible to more frequent cycles (Marschalek 2001). Refer to Fire 1.0.

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- An experimental restoration program is currently being implemented (Caltrans and California Transportation Ventures) in the Johnson Canyon area east of SR 125. Evaluate the success of this project and incorporate successful management strategies into the Quino checkerspot butterfly enhancement and restoration effort for HCWA.
- d) Implement management measures for coastal California gnatcatcher.
- Restore areas of disturbed and/or type-converted coastal sage scrub to regain appropriate habitat structure.
 - Control the fire frequency through an effective fire management program (see Fire Management Element). The California gnatcatcher prefers open scrub habitat. Too frequent of a fire interval can prevent scrub habitats from reaching a maturity level capable of supporting the California gnatcatcher.
 - Conduct regular cowbird trapping as necessary to protect gnatcatcher nestlings from this brood parasite. Refer to Bio 3.2.3.
 - Control for the indirect effects of noise within gnatcatcher habitat by keeping noise levels at or below 60 dBA during the breeding season. Avoid the use of noise-generating equipment, and limit noise-generating public activities as necessary.
 - Control for the indirect effects of night lighting within gnatcatcher habitat by shielding lighting from neighboring properties as feasible, using low-wattage sodium outdoor lighting near occupied habitat, and educating/encouraging the public to do the same.
 - Avoid flushing young or adults from their nest by restricting public recreational and educational activities during the breeding season as necessary.
- e) Wherever new populations of listed species, or additional listed species previously undocumented for HCWA, are detected, the type and level of active management for the area should be determined within 6 months of the detection.

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- f) Adaptive management: use monitoring results to reevaluate priorities and management activities. Refer to Bio 1.1.3 (j) for details.

Non-listed Sensitive Species

Bio 2.2 Goal - Protect and Enhance Populations of Non-listed Sensitive Species.

Protect, monitor, and enhance populations of non-listed sensitive species.

Tasks:

- Bio 2.2.1 Surveys and Ongoing Monitoring. Conduct sensitive plant and animal species surveys every 3 to 5 years. Generally assess the condition of the known populations and document population count and area occupied.
- a) Surveys should be conducted at the appropriate time of year (e.g., the appropriate blooming period for each species of plant, and breeding season for migratory birds).
 - b) Priority should be given to California Species of Concern and MSCP covered species.
 - c) Monitor wildlife movement, as feasible, within and beyond HCWA using tracking and camera stations as described in USGS (2002). Coordinate these surveys with those conducted for the adjacent RJER, and other neighboring conserved lands.
- Bio 2.2.2 Assess Threats and Set Priorities. Identify threats to sensitive species. Focus on habitat-specific assemblages, i.e., grassland species. Prioritize areas for species management by designating them as “high” (species or assemblage in imminent danger where action must be taken as soon as possible), “medium” (action should be taken within the next 3 years), and “low” (species that should be monitored to ensure the threat does not worsen, with management action conducted when time, budget, and staffing allow). Incorporate these priorities into annual work plan for wetland and upland habitats, as outlined in Bio 1.1.3 and 1.3.3.

Bio 2.2.3 Management. Implement the following management activities to protect sensitive biological resources:

- a) Follow MSCP guidelines for Area Specific Management Directives (ASMDs) for MSCP covered species (see Table 3-5 in MSCP Subregional Plan; Appendix H). ASMDs are guidelines for managing and monitoring each covered species and its habitat. For example, each narrow endemic species should be closely monitored and protected from direct (such as trampling) and indirect (such as edge effects) impacts.
- b) Remove non-native predators that may threaten sensitive wildlife species.
- c) Add structures such as bluebird nest boxes or bat houses as necessary to provide nesting or roosting opportunities for sensitive species.
- d) Evaluate all future management programs for potential impacts to sensitive species and take appropriate steps to mitigate these impacts (e.g., the effect of dog training at any of the former stock ponds that may be restored on MSCP covered species in the vicinity).
- e) Adaptive management. Use monitoring results to reevaluate priorities and management activities. Refer to Bio 1.1.3 (j).

3. Bio 3 Element: Managed Species

Managed species are non-native or nuisance plants and animals that require continuous, active management to control their populations so that they do not harm native species or natural habitats.

Bio 3.1 Goal – Control and Minimize Invasive, Non-native Plants

Control for invasive, non-native plant species that may negatively impact native species and habitats within the wildlife area.

Tasks:

- Bio 3.1.1 Surveys and Ongoing Monitoring. As-needed, conduct surveys for invasive, non-native plant species and monitor the populations. The focus should be on the invasive, non-native plant species that occur among

sensitive plant species, or within 500 feet of sensitive plant populations, particularly listed plant species.

- a) Qualitative surveys should be conducted annually to detect immediate threats from invasive species to known populations of listed species within HCWA.
- b) Quantitative surveys (e.g., species density and mapping) should be conducted every 3 to 5 years to document the condition of the invasive species population within and surrounding (500 feet) the target sensitive species.

Bio 3.1.2 Assess Threats and Set Priorities. Identify threat for invasive plant species population expansion and associated degradation to native habitat or sensitive species population. Prioritize areas for invasive plant species management by designating risk as “high” (action must be taken as soon as possible), “medium” (action should be taken within the next 3 years), and “low” (action to be taken when time, budget, and staffing allow). Incorporate these priorities into annual work plan for wetland and upland habitats, as outlined in Bio 1.1.3 and 1.3.3. Management priorities for HCWA include:

- a) Occurrences of invasive, non-native plants among or near (within 500 feet of) highly sensitive plant species.
- b) New occurrences (i.e., previously unknown and/or currently small populations) of highly invasive plant species anywhere within HCWA are also a high priority as these occurrences should be eliminated while the population is most manageable.
- c) Species designated as “high” by Cal-IPC should be prioritized for control or elimination.

Bio 3.1.3 Management. Control and eliminate, as feasible, populations of invasive, non-native plant species.

- a) Eliminate the populations of eucalyptus that dominate the central segment of Jamul Creek and near the old Honey Springs Ranch.
- b) Eliminate the giant reed that occurs within Dulzura Creek and an unnamed tributary in the Honey Springs Ranch parcel.

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- c) Eliminate the non-native grasses (including foxtail chess) that are threatening the San Diego thornmint and Quino checkerspot butterfly populations (among and within a 500-foot buffer) in the north-central portion of the property.
 - d) Management activities should be consistent with those currently being conducted by the Department within reserved lands.
 - e) Coordinate efforts and/or compare results with invasive plant species control programs being done elsewhere in the county (e.g., regional “weed teams” and the Department’s Pesticide Investigations Unit).
 - f) Adaptive management. Use monitoring results to determine the effectiveness of non-native species control methods and protection of sensitive species; adapt management strategies as necessary. Refer to Bio 1.1.3 (j) for additional details.

Bio 3.2 Goal – Control and Minimize Non-native Wildlife Species

Control for non-native, predatory animal species that may negatively impact native species within the wildlife area.

Tasks:

- Bio 3.2.1 Surveys and Ongoing Monitoring. As needed, conduct surveys for non-native wildlife species, and monitor the population. The focus should be on non-native wildlife species that may adversely affect sensitive wildlife species within HCWA.

- Bio 3.2.2 Assess Threats and Set Priorities. Identify threat for non-native wildlife species population expansion and associated degradation to native habitat or sensitive species population. Prioritize goals and tasks for non-native wildlife species management by designating risk as “high” (action must be taken as soon as possible), “medium” (action should be taken within the next three years), and “low” (action to be taken when time, budget, and staffing allows). Incorporate these priorities into annual work plan, as outlined in Bio 1.1.3. The major threats from non-native species at HCWA include:
 - a) Aquatic predators (e.g., crayfish and mosquito fish).

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- b) Domestic pets.
 - c) Non-native or native predatory birds such as starlings, house sparrows, and cowbirds.

Bio 3.2.3 Management. Control and eliminate, as feasible, populations of non-native wildlife species, or native predatory species that cause harm.

- a) Monitor cowbird populations in the wildlife area and establish trapping stations where cowbirds are found to be a problem.
- b) Monitor populations of the European starling and house sparrow in the wildlife area and install nest boxes for bluebirds, woodpeckers, and other cavity nesters as needed.
- c) Educate the surrounding communities about the threats to native wildlife caused by release of non-native species into the wild.
- d) Adaptive management. Use monitoring results to determine the effectiveness of non-native species control methods and protection of native fauna. Adapt management strategy as necessary. Refer to Bio 1.1.3 (j) for additional details.

4. Bio 4 Element: Game Species

Bio 4.0 Goal – Manage Game Populations

Manage game populations and associated habitat to provide hunting opportunities for the public, while protecting sensitive biological resources.

Tasks:

Bio 4.1 Surveys and Ongoing Monitoring.

- a) Conduct annual dove and quail counts to assess population condition and obtain trend data.
- b) Conduct surveys every 3 to 5 years on resident and small game species throughout HCWA.
- c) Conduct harvest surveys to track numbers, species, and locations of take.

Bio 4.2 Management. Conduct the following tasks to manage for game species:

- a) Manage the wildlife area to maintain conditions suitable for game species.
 - The planted field in the west-central portion of the wildlife area where cereal wheat and safflower are sown to attract doves. This area should be monitored to determine if sown crops are invading adjacent native habitats.
 - Rotate hunting areas or periodically close areas if heavy use is adversely affecting the habitat that game species prefer.
 - Consider providing closed zones as refugia if needed.
- b) Manage for all aspects of game species' needs; food, water, cover and breeding habitat.

Bio 4.3 Enhancement.

- a) Assess current food plots for success. Evaluate other potential areas for manipulation or native/passive feeding centers. Continue planting as resources allow and benefit is derived.
- b) Assess current water sources. Evaluate other potential areas where water sources can be developed or artificially enhanced.
- c) Incorporate brush piles or vegetation design that will provide cover for quail and small game.
- d) Construct and install dove cones where appropriate.
- e) Evaluate success of habitat improvement projects and modify as necessary to achieve desired results.

Potential Environmental Impacts Associated with the Biology Element

Although the primary goal of HCWA is to protect sensitive biological resources while providing for wildlife-dependent public uses, potential impacts could result from certain management actions, such as surveys and monitoring, erosion and sediment control, restoration activities, invasive non-native plant eradication, non-native wildlife control, and game management.

However, implementation of the following actions is expected to reduce potential impacts to a less than significant level.

- Surveys and monitoring will be performed by qualified Department staff, researchers, or volunteers under the direction of Department staff, following established protocols.
- Preventative measures will be used for erosion and sediment control whenever possible. If heavy equipment is necessary, any impacts to habitat will be actively restored.
- New facilities will be placed in disturbed habitat whenever possible. Temporary staging areas will be actively revegetated. Permanent impacts to habitat will be avoided, minimized, and/or mitigated.
- Management activities will include appropriate mitigation measures (i.e., temporary fencing to protect riparian areas from grazers, prescribed burn protocols, appropriate use of herbicides and pesticides, etc.). All future management actions will be evaluated for potential impacts.
- The following projects identified in this LMP will result in a net benefit to sensitive natural resources in the wildlife area: active and passive restoration, habitat enhancement, species reintroduction, and sensitive species conservation.

C. PUBLIC USE ELEMENT

It is the policy of the California Fish and Game Commission that lands under its administration be available to the public for wildlife-dependent recreational use whenever such uses will not unduly interfere with the primary purpose for which such lands were acquired. HCWA was acquired to provide public hunting opportunity and for the protection of multiple species within the MSCP/NCCP area. The purpose of the MSCP is to create core land areas that are connected by corridors to allow wildlife movement. HCWA and the adjacent RJER provide a unique opportunity as core areas pursuant to the MSCP due to their location on either side of SR 94 and the fact that they provide a continuous biological linkage between additional open space east and west of these department-owned lands. USFS, BLM, and USFWS lands are also core areas. The agencies have a priority of acquiring land within the NCCP area.

Management opportunities and constraints that are common to all public use elements are discussed as follows. Additional opportunities or constraints specific to a particular goal are noted below.

Opportunities

- Public Uses. Opportunities for public uses at HCWA include hunting, walking, hiking, wildlife observation, and nature study. Nature study opportunities available include permitted species collection, photography, drawing, and painting.
- Capacity. Currently HCWA observes low levels of public use. This is consistent with its “Type C” wildlife area designation and allows for a higher-quality outdoor experience.
- Public Access. HCWA is open to the public on a daily basis for compatible uses listed above.
- Regulation Review. Specific regulations within Title 14 are updated every 3 years to support the overall mission of wildlife areas. This periodic update provides an opportunity to review and revise the regulations pertaining to HCWA.

Constraints

- Habitat and Species Preservation. While public access is an important component in the Department’s mission, protection of habitat and wildlife is prioritized. The public’s effect on HCWA lands must be balanced with habitat and wildlife protection. Capacity monitoring can assist in helping to identify that balance.
- Circulation. Road/trail closures, where needed, will be based on wildlife and habitat needs. Compatible uses will be continued or moved to an area that does not harm habitat or wildlife. Circulation elements necessary for the Border Patrol and fire agencies will be retained; these areas may only be accessible to the public where appropriate.
- Staffing. Limited availability of staff and funding for operations such as opening and closing of gates, garbage collection, visitor use coordination, and law enforcement. Also staff and funding are limited for maintenance of roads, trails, parking lots, fencing, and signs.
- Human Disturbance. Potential effects of human disturbance on riparian areas, grasslands and uplands; to wildlife including frightening wildlife, flushing of wildlife from habitat, disturbance while roosting, and noise disturbance; and potential effects of human disturbance to wildlife during breeding and nesting season.
- Wildlife Refugia. Protection of wildlife by closing some areas to public use.

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- Protection of Cultural Resources. Cultural resources have the potential to be affected by uses.
 - Potential Human Conflicts. Potential conflicts or incompatibilities among various public uses (for example, hunting and wildlife viewing cannot easily be accommodated in the same area at the same time); and potential, occasional encounters with Border Patrol officers.
 - High Use Levels. During hunting seasons high use levels can be a constraint to safety at wildlife areas in general. However, at HCWA, overcrowding has not posed a problem. Communication with hunters and hunter surveys at check-in can assist with identifying whether safety concerns are arising among hunters. Surveys will be utilized as an additional tool to identify if high use levels become an issue (see monitoring plan).
 - Environmental Education. Environmental education is not planned to be formally provided at HCWA. The adjacent RJER will provide ample resources for environmental education.
 - Closed Areas. “Closed areas” within HCWA are only available to Department staff (or other authorized personnel). There are currently two closed areas, one in the central portion and one in the south portion of HCWA (Figure 11). In addition, hunting is not allowed in the northern portion. These closed and use-restricted areas constrain public use in HCWA. Additional closures could occur as safety or biological needs arise and would be implemented using fencing and/or signage. Fencing types could be wire or split-rail such as along trails to prevent visitors from leaving the trail. Particular areas to be evaluated for closure to the public include riparian zones and habitat occupied by select sensitive species, e.g., San Diego thornmint and Quino checkerspot butterfly.

A total of nine goals pertaining to public access, public safety, hunting, wildlife observation, trail use, dog training, signage, community partnership, and regulations have been identified for this element. Within each goal, numerous tasks are identified.

Pub 1.0 Goal – Public Access

Provide compatible wildlife-dependent opportunities for public access.

Tasks:

Pub 1.1 Continue to maintain access routes to existing parking lots.

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- Pub 1.2 Assess the eastern end for a potential additional parking lot near the Honey Springs Ranch.
- Pub 1.3 Improve official trail system by regular maintenance and improved signage.
- Pub 1.4 Clearly mark closed trails and provide barriers to preclude access by the public.
- Pub 1.5 Evaluate use levels and visitor satisfaction periodically by using visitor surveys.
- Pub 1.6 Close HCWA for bicycles and horses for up to 3 days after rain events to prevent damage to trails.
- Pub 1.7 Evaluate and improve trails for American with Disabilities Act (ADA) access.
- Pub 1.8 Close HCWA to the public during and following fire and severe weather events.
- Pub 1.9 Maintain a clear line of sight at the vehicle entrance to HCWA by trimming and maintaining vegetation.
- Pub 1.10 Document condition of habitat in relationship to public use capacity. Conduct quantitative user surveys every 3 to 5 years or more frequently and estimate user capacity. If resource damage is occurring then public use elements may be removed, reduced, or limited to certain locations.
- Pub 1.11 Prohibit unauthorized activity. Increase enforcement and create additional educational materials when unauthorized activities are taking place. Department staff may use revegetation to control erosion and eventually will repair damaged areas.
- Pub 1.12 Remediate damage from unauthorized activities.

Pub 2.0 Goal – Public Safety

Minimize competition and conflicts among users and facilitate compatibility between public uses.

Tasks:

- Pub 2.1 Encourage user safety through monitoring and enforcement of regulations.

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- Pub 2.2 Inform the public of HCWA use designations and use restrictions through outreach, signage, physical barriers, and the Department’s website, especially times and locations where hunting is allowed.
- Pub 2.3 Identify potential conflicts between recreational uses and resolve such conflicts.
- Pub 2.4 Pursue special funding and/or volunteers to have personnel available on-site during high use times to monitor visitor activities and provide information as needed to visitors.
- Pub 2.5 Include a Department contact person’s name, phone number, and e-mail address on signage for questions, comments, and suggestions regarding compatible uses of HCWA.
- Pub 2.6 Conduct periodic reviews of public uses of HCWA; evaluate rules, regulations, guidelines, and materials to ensure they are wildlife-dependent and compatible with the goals for the area.

Pub 3.0 Goal – Hunting

Provide safe, compatible hunting opportunities to the public.

Tasks:

- Pub 3.1 Continue current hunting program in specified areas.
- Pub 3.2 As habitat and access are improved, evaluate whether current hunting program may be expanded.
- Pub 3.3 Maintain physical separation of closed zones through signage and landmarks that blend into the landscape, such as boulders along access roads.
- Pub 3.4 Provide hunter safety instruction on a regular basis at HCWA and throughout the region.
- Pub 3.5 Continue encouragement of young hunters through participation in junior hunt programs. Establish youth hunts at HCWA.
- Pub 3.6 Conduct late summer volunteer “clean up day” to ready HCWA for the upcoming hunting season.

Pub 3.7 Maintain good relationship between Department staff, hunters, and volunteer organizations.

Pub 4.0 Goal – Wildlife Observation

Provide compatible wildlife observation opportunities to the public.

Tasks:

Pub 4.1 Designate specific wildlife viewing areas in a variety of habitats and locations that provide for undisturbed wildlife viewing, protect sensitive species, and do not cause a visual impact.

Pub 4.2 Develop interpretive signage for wildlife viewing trails.

Pub 5.0 Goal – Trail Use

Provide access to compatible trail use opportunities to the public for the purpose of wildlife-dependent activities.

Tasks:

Pub 5.1 Post designated trails and maintain trail system (see Figure 11).

Pub 5.2 Document condition of trails and habitat. If damage to biological resources is taking place, then those trail elements will be considered for removal or relocation.

Pub 5.3 Use barriers such as logs, boulders, and native vegetation (prickly or sticker plants) to control access to areas (e.g., areas closed to hunting or for research), prevent trail spreading or close user-defined trails.

Pub 5.4 Educate adjacent land owners that access is not permitted off of private lots. All access is through the parking area on Honey Springs Road.

Pub 6.0 Goal – Dog Training

Provide compatible hunting dog training opportunities to the public. Hunting dog training is a conservation tool in that hunters who use dogs to find and retrieve game result in less waste of game.

Tasks:

- Pub 6.1 Continue to allow dog training.
- Pub 6.2 Maintain areas for a variety of hunting dogs.
- Pub 6.3 Restore one or more of the former stock ponds to provide aquatic dog training areas for retrievers. Work with the local hunting dog trainers to provide appropriately designed training areas to the extent practical.
- Pub 6.4 Design and restore fields adjacent to ponds that are restored to be used as a field component for dog training.

Pub 7.0 Goal – Signage

Provide signage that clearly communicates regulations, safety warnings, expected code of conduct and interpretive messages to the public.

Tasks:

- Pub 7.1 Prepare a plan for all signage used at HCWA that addresses sign maintenance, placement, and content.
- Pub 7.2 Maintain signs at parking lots with wildlife area maps and regulations, and safety information, including:
- a) General rules; no rifles or pistols; and wildlife and other hazard signs (mountain lions, rattlesnakes, poison oak, border patrol, etc.).
 - b) Entrance signs at HCWA should inform visitors that they are proceeding at their own risk.
- Pub 7.3 Work with Caltrans to install signage on SR 94 to direct visitors to the entrance of HCWA.
- Pub 7.4 Provide a large sign marking the HCWA entrance on Honey Springs Road.
- Pub 7.5 Inspect and maintain signs annually.
- Pub 7.6 Inventory existing boundary signage and fencing, and install new signs and fencing where necessary. Boundary signage should face both

directions to notify users of adjacent private property, and to notify neighbors of the wildlife area boundary.

- Pub 7.7 Provide a sign board in the public parking lots that communicates a comprehensive display of public use opportunities at HCWA. This will include a map showing currently available public use areas.
- Pub 7.8 Provide signs marking trails and dog training areas.
- Pub 7.9 Provide signs marking areas that are closed for nesting, area maintenance, habitat restoration, emergency repairs, flood damage, safety, or other reasons.
- Pub 7.10 Provide signs on trails indicating that hikers and mountain bikers are to yield to horseback riders, and hikers are to yield to mountain bikers.

Pub 8.0 Goal – Community Partnership

Continue to foster community partnership.

Tasks:

- Pub 8.1 The Department will continue to communicate and coordinate with various community groups including hunters, equestrians, dog training groups and others for special events as well as volunteer opportunities;
- Pub 8.2 Collaborate with outside groups in developing new program areas;
- Pub 8.3 Coordinate with volunteers to protect wildlife resources and habitat during large work parties; and
- Pub 8.4 All groups must coordinate through Department management before engaging in volunteer activities, and receive training and briefings by the Department.
- Pub 8.5 Communicate with the Home Owners Association of Rancho Jamul Estates and other neighbors regarding adjacency issues.

Pub 9.0 Goal – Regulations

Support compatible wildlife-dependent public use through consistent regulations and coordination with other agencies.

Tasks:

- Pub 9.1 Evaluate the hunting, angling, and wildlife viewing programs.
- Pub 9.2 Evaluate HCWA regulations periodically to identify changes that are warranted to maintain consistency with the goals of this LMP and that reflect Department and Fish and Game Commission Policy.
- Pub 9.3 Periodically review activities within HCWA for compatibility with the MSCP, specifically as updated monitoring and management requirements and information become available for MSCP participants.

Potential Environmental Impacts Associated with the Public Use Element

Compatible, wildlife-dependent public uses support the Department's mission in providing public access to HCWA. Potential impacts to public access are considered as well as impacts that can be caused by public uses. Potential direct and indirect impacts that could result from the public's use of HCWA include:

- Overuse of trails, open areas, or parking lots.
- Unauthorized use of closed areas.
- Conflicts among users.
- Accidents involving wildlife (e.g., snake bites), or visitor accidents.

These potential impacts will be avoided and/or minimized by:

- Managing visitation levels.
- Preventing unauthorized activities through regular observation of visitor activities.
- Promptly repairing damaged areas.
- Installing signs and/or display cases to educate and inform the public regarding rules and regulations governing the use of HCWA and access restrictions. Signs informing the public that they are entering HCWA at their own risk will be posted at all entrances.
- Regularly monitoring public use effects on ecosystems.

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- Closing trails or modifying uses where use is determined to have, or potentially have, an adverse effect on sensitive biological or cultural resources.

D. CULTURAL RESOURCES ELEMENT

HCWA includes at least 13 cultural resources that may be significant under the CEQA for the California Register of Historical Resources (California Register) and 11 that remain unevaluated. The California Register is an authoritative guide to California's significant historical and archeological resources to be used by state and local agencies, private groups, and citizens in identifying the existing historical resources of the state, and to indicate which resources deserve to be protected, to the extent prudent and feasible, from substantial adverse change. Resources included on the California Register are those that are:

- Associated with events that have made a significant contribution to the broad patterns of local or regional history or the cultural heritage of California or the United States.
- Associated with the lives of persons important to local, California or national history.
- Embodied with the distinctive characteristics of a type, period, region or method of construction or represent the work of a master or possesses high artistic values.
- Have yielded, or have the potential to yield, information important to the prehistory or history of the local area, California or the nation.

Typically, resources included on the California Register are 50 years old or greater. A resource less than 50 years old may be considered for listing in the California Register if it can be demonstrated that sufficient time has passed to understand its historical importance. California's statutes, regulations, and administrative policies regarding historic preservation and protection of cultural resources can be reviewed at <http://www.ohp.parks.ca.gov/pages>.

As noted earlier, Susan M. Hector authored an Archaeology Management Plan for HCWA in June 2002. Hector's specific recommendations are incorporated into the following goals and are summarized in Appendix A.

Opportunities

- Value. Preservation and protection of cultural resources are an opportunity that provides cultural, social, and environmental benefits.

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- Informed Decisions. The Department's knowledge of the complete inventory of cultural resources within HCWA and their significance provides for informed planning and better decision making.
 - Stewardship. Management of cultural resources is consistent with the CEQA and meets the Department's intent to provide long-term stewardship of cultural resources at HCWA. A stewardship program to monitor cultural resources can provide volunteer labor to the Department and build ownership in the community. A site stewardship program will engage the community in protecting the cultural resources of HCWA. The Department could contact the San Diego County Archaeological Society for their monitoring protocol or the California Native American Heritage Commission regarding training volunteers through their California Archaeological Site Stewardship Program.
 - Volunteer Labor. Student investigations can provide volunteer labor to the Department. Research opportunities can be provided to college-level students through formal field school classes or independent studies conducted at HCWA in the fields of anthropology, archaeology, ethnohistory, ethnobotany, cultural geography, or cultural resources management.
 - Education. HCWA has a diverse set of cultural resources. The prehistoric archaeological resources and historic homestead sites provide an ideal laboratory for the study of changing prehistoric subsistence and historic settlement patterns in southern California.
 - Community Involvement. Involving the community in the cultural resources activities of HCWA provides an opportunity for public participation, stewardship, and education. Public outreach efforts provide an opportunity to gain information on the history and importance of cultural resources at HCWA. This can include oral history interviews or town hall meetings, in which information is both shared and elicited. The Native American community may be able to provide information on the cultural uses of the area and significant resources. This information provides an opportunity to interpret the Native American importance of the region and protect resources they deem significant.
 - Native American Input. A Native American contact program was conducted in 2005 (Appendix E). Those persons identified by the Native American Heritage Commission could assist the Department in identifying significant resources that may have not been previously identified.
 - Interpretation. Public education and interpretation of the cultural history of HCWA could include signs, displays, walking maps, or interpretive trails.

Constraints

- Staff and Funding. Constraints of managing cultural resources include limited availability of staff and funding to maintain data, oversee documentation generated by others, track resource conditions, implement treatment, maintain contact with interested parties, create interpretive materials, and conduct public outreach programs.
- Vandalism. Identifying cultural resources to the public makes them more vulnerable to vandalism.

Cul 1.0 Goal – Identify Cultural Resources

Identify all cultural resources that are significant or potentially significant to understanding the prehistory or history of HCWA and that meet the criteria for listing in the California Register.

Tasks:

- Cul 1.1 Gather Data. Compile all of the inventories and investigations of cultural resources for HCWA that are on file with the Department. Create a working bibliography.
- Cul 1.2 Conduct Search. Have a qualified cultural resources specialist conduct a records search at the South Coastal Information Center (SCIC). The SCIC is the regional cultural resources data repository for the California Historical Resources Information System, which includes the statewide Historical Resources Inventory database maintained by the California Office of Historic Preservation. This will provide the Department with the following:
- a) A datasheet (National Archaeological Database record [or NADb]) for each investigation within HCWA that is on file with the SCIC.
 - b) A hard copy map (digital files may be requested) of the investigation boundaries within HCWA that are on file with the SCIC.
 - c) A record for each resource within HCWA that is on file with the SCIC.
 - d) A hard copy map (digital files may be requested) of the resource boundaries within HCWA that are on file with the SCIC.
 - e) A copy of each historic map that includes HCWA.

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- Cul 1.3 Maintain Data. Maintain and continue to update the data collected from the Department files and the records search.
- Cul 1.4 Evaluate Resources. Have a qualified cultural resources specialist formally evaluate known cultural resources for the California Register.
- Cul 1.5 Contact Native Americans. Contact the Native Americans identified in the 2005 contact program (Appendix E), and solicit information on resources that may not be previously identified or that they deem important.
- a) Contact James Robertson about the sacred lands identified by the California Native American Heritage Commission.
- Cul 1.6 Define Areas to Be Surveyed. Using the data acquired from the SCIC, define the areas that have not been surveyed. In addition, review the adequacy and age of prior surveys to determine if certain areas need to be resurveyed.
- Cul 1.7 Inventory and Evaluate. Have a qualified cultural resources specialist conduct cultural resources inventories in areas to be surveyed and evaluate identified resources.
- a) Begin by identifying programs and planned development within HCWA and conduct focused field surveys in those areas.
- b) Avoid areas where resources are found.
- c) Encourage non-destructive research by professional archaeologists.
- d) Require publication and distribution of results.
- e) Ensure proper curation of any materials collected, including notes and photographs.
- Cul 1.8 Add New Data. Add new data to existing dataset.

Cul 2.0 Goal – Protect Cultural Resources

Protect all cultural resources that are significant or potentially significant to understanding the prehistory or history of HCWA and that meet the criteria for listing in the California Register.

Tasks:

Cul 2.1 Conduct Review. Conduct a cultural resources review before conducting any ground-disturbing activities. If the area has not been previously surveyed, have a professional cultural resources person conduct a survey.

Cul 2.2 Implement Treatments. Implement treatments using the Treatment Categories provided by Hector (2002). See Appendix A for those resources previously categorized.

a) Category 1 Treatment – Preserve in place. Do not introduce incompatible elements. Restoration and replacement of architectural features should be based on detailed and accurate representations of the original features, as substantiated by historical, physical, pictorial, or archaeological evidence. Do not introduce plant materials into the site areas that will undermine, damage, or modify the cultural resource (e.g., invasive vining plants, surface roots of certain trees). Active management for preservation will be needed, to include:

- Fencing
- Re-routing trails
- Stabilization and repair of historic structures and features, including providing covers for buildings or ruins
- Capping with non-cultural soils
- Annual monitoring

b) Category 2 Treatment – Preserve in place. Trails, staging areas, or other uses may be nearby if no direct access is provided to the resources. Treatments to avoid impacts to these resources may include:

- Avoidance through rerouting trails and activity areas
- Revegetation to hide and protect the resource
- Limited stabilization of historic features such as dump sites and small architectural sites
- Biennial monitoring

-
- c) Category 3 Treatment – Preserve in place. Trails and other modern amenities may be nearby. This category includes resources used in interpretive programs and for research and study. Treatment may include:
- Avoidance of direct impacts
 - Revegetation to hide or protect the resource
 - Restoration or reconstruction of a historic building for interpretive use
- d) Category 4 Treatment – These resources should be treated as follows:
- Ensure that proper documentation in terms of a site report or site record has been completed and submitted to the proper agencies and organizations (e.g., SCIC)
 - If artifacts were collected, provide funds for curation at an appropriate facility

Cul 2.3 Retain Professional Assistance. Have a professional cultural resources person assist in assigning treatments to those not identified by Hector (2002).

Cul 2.4 Prioritize Activities. Prioritize the following activities identified by Hector (2002).

- a) Control access to CA-SDI-7441.
- b) Eliminate access to CA-SDI-9273, -9689, -14,439, and -14,443. Make no plans to develop or improve access to these locations.
- c) Consider the effects to CA-SDI-16,270, -16,271, -16,272, and -16,273 when proposing revegetation programs. Any ground-disturbing activity at the site locations will cause adverse impacts to these sites.
- d) Do not remove existing historic ranching materials that may remain from prior ranching activities, including wood corrals, loading pens, troughs, wire, and other historic materials. They represent a past lifestyle that formed the basis for settlement in this area. If there is a safety issue, removal of historic ranching materials should be done

under the supervision of a professional cultural resources person so that the materials can be documented.

Cul 2.5 Consult California Law. When activities may affect cultural resources, consult California's statutes, regulations, and administrative policies regarding historic preservation and protection of cultural resources (<http://www.ohp.parks.ca.gov/pages/1069/files/10%20law%20and%20preservation.pdf>).

Cul 2.6 Mitigate Impacts. Mitigate any potential adverse impacts to cultural resources through active management.

Cul 2.7 Protect during Planning. Protect cultural resources using the following methods identified by Hector (2002) during planning.

a) Avoidance

b) Fencing

- The placement of fence posts should be monitored by an archaeologist; in general, a split rail or lodge-pole fence keeps most people out of a sensitive area.

c) Capping with non-cultural soils

- Capping a site or a portion of a site where there is a trail or dirt road should be undertaken with the participation of an archaeologist. Considerations should include depth of the cap and trail safety issues; potential erosion of the soil or gravel cap; disturbance of the site during the capping process; and maintenance of the trail or road.

d) Revegetation of site area

- Revegetation to protect a site should not include any disturbance of the surface of the ground, even if the site has been an agricultural field.

e) Additional monitoring

- Testing and data recovery if the resource cannot be avoided.

Cul 2.8 Monitor Resources. Monitor cultural resources at the recommended intervals (Appendix A). A trained Department staff person or volunteer can accomplish this, with professional consultation as needed. If damage or impacts are noted, the measures noted in the next Treatment Category should be implemented.

Cul 2.9 Comply with Agreements. Comply with binding agreements made during the acquisition of property.

a) Archaeological Conservation Easement of 1983 – the Department is required to address sites CA-SDI-189, -7447, -7448, and -7449 in a management plan. In addition, the Department has to ensure that these sites are not disturbed and that no cattle grazing will occur in these areas. These sites should be protected under Category 1 Treatment.

b) Purchase agreement for Expansion Area 2 – the Department agreed to contact the Western Division of Archaeological Conservancy when the management plan is being developed.

The Archaeological Conservancy
5301 Central Avenue NE, Suite 1218
Albuquerque, NM, 87108-1517
505-266-1540

Cul 2.10 Implement Stewardship. Implement a stewardship program that trains users of HCWA to monitor the conditions of cultural resources. Site stewards will require mandatory training and ongoing monitoring. Youth service projects can be developed through this program.

Cul 3.0 Goal – Involve the Community

Involve the community in cultural resource activities at the Hollenbeck Canyon Wildlife Area.

Tasks:

Cul 3.1 Consult with Native Americans. Consultation refers to establishing a relationship (through periodical phone calls and letters) with the Native American community. This could include a presentation to Native American communities and an invitation for input and concerns. Contact information for those with potential interest in the activities of HCWA was provided by the Native American Heritage Commission (Appendix E).

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- Cul 3.2 Create Public Contact List. Create an interested parties or stakeholders list.
- Cul 3.3 Implement Interpretive Plan. Create and implement an interpretive plan.
- a) Without threatening the integrity of the cultural resource, prepare written material describing what is present.
- b) Develop graphic materials and interpretive displays for the public.
- c) Replicas of collected artifacts from CA-SDI-16,270 including a sandstone discoidal and a Cottonwood Triangular projectile point base could be displayed and explained.
- d) Other interpretive displays could feature the history of ranching in San Diego.
- Cul 3.4 Develop Outreach Programs. Develop public outreach programs for users and visitors.
- a) Give presentations and tours.
- Cul 3.5 Develop Education Materials. Develop educational materials that can be used in County of San Diego school curriculums.

Potential Environmental Impacts Associated with the Cultural Resources Element

Any ground-disturbing activities at HCWA may potentially affect historic or archaeological resources. Potential impacts would be avoided or reduced to less than significant by implementation of site-specific measures previously identified (Appendix A, confidential), and the following management actions.

- All cultural resource investigations at HCWA shall be conducted under the guidance of a qualified professional cultural resources person, as defined by the Secretary of Interior's Professional Qualifications Standards.
- All cultural resources investigations shall conclude with a written report, with one copy filed with the Department and one copy submitted to the South Coastal Information Center, who manages the Historical Resources Inventory database for San Diego County, under the direction of the California Office of Historic Preservation.

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- Avoidance of archaeological sites or treatments to standing buildings and structures as defined in the Secretary of the Interior's Standards for the Treatment of Historic Properties shall be conducted to reduce impacts. Treatments include preservation, restoration, rehabilitation, or reconstruction.
 - Cultural resources investigations and treatments shall be conducted in accordance with federal and State of California Regulations and Standards concerning cultural resources.

E. FACILITY MAINTENANCE ELEMENT

Facilities on HCWA include roads and trails; parking lots; access control structures such as fences, gates and barriers; signage; structures; and water features, such as wells, fire hydrants, wildlife drinkers, and a proposed artificial pond. Managing these facilities will require ongoing monitoring, prioritization based on budget and staffing, preventative maintenance, and as-needed repair. Primary goals of facility maintenance are to ensure site security and safety for staff and the public, and ensure resource protection.

Opportunities

- Conducting regular assessments and preventative maintenance will keep facilities in good condition thereby avoiding costly repairs in the future.
- Educating and engaging the community might result in volunteer-based stewardship, which can help deflect the costs and staffing constraints faced by the Department.

Constraints

- Limited funding for staffing, inspections, enforcement, operations, and maintenance is a constraint for long-term operations of HCWA. Funding for routine assessment and repair or replacement of trails, culverts, gates, fencing, and signs will be required. Routine inspections of HCWA are also required to ensure that no unsafe hazards or new conditions have occurred, including illegal dumping. An overview of the property's personnel and equipment requirements to implement management goals and objectives is necessary to establish the foundation for future application of management funding.

Fac 1.0 Goal – Facility Management

Manage structures and facilities to provide wildlife-dependent public use, while protecting sensitive resources (see also Public Use Element).

Tasks:

- Fac 1.1: Roads and Trails. Manage the trails system by taking the following actions:
- a) Restore closed trails. Identify trails to be closed and implement active restoration through decompaction, invasives removal, and when necessary, seeding or planting. Invasive species eradication efforts should continue for no less than 5 years.
 - b) Prevent erosion damage to trails by implementing BMPs as necessary.
 - c) Prohibit off-road illegal activities. Ensure that no illegal trails are formed by off-road activities by posting signs or installing barriers as needed.
- Fac 1.2: Parking Lots. Maintain parking lots to support public use and safety, while avoiding/minimizing impacts on adjacent resources.
- Fac 1.3: Fences, Gates, and Barriers. Manage fences, gates, barriers, and other structures to support wildlife movement, and to protect sensitive biological resources from impacts due to traffic and illegal public use. Remove any of these structures that impede management activities or Border Patrol Access (at the discretion of the Department).
- Fac 1.4: Signage and Public Education. Remove, add, or update signs as necessary (see also Pub 7.0). Incorporate educational information as necessary.
- Fac 1.5: Structures. Maintain the State Housing residence. After proper evaluation (i.e., bat surveys), as needed, demolish dilapidated structures (old Honey Springs Ranch buildings) to ensure public safety near these features.
- Fac 1.6: Water Features. Maintain wells, fire hydrants, artificial ponds, and pipelines to support wildlife, restoration efforts, and fire management.
- a) For each well, determine functionality, the depth to groundwater, and the pumping rate. In addition, conduct water quality analysis of the well water to determine if it is safe for people and wildlife to drink. Post a warning sign if non-potable.
 - b) Maintain functional wells regularly. Cover all non-functional wells to protect the public from accidents.

-
- c) Maintain fire hydrants by lubricating and testing them every 6 months.
 - d) Following restoration of one or more of the former stock ponds near the old Honey Springs Ranch, maintain water level using water from the nearest existing well. Use native flora to provide cover for training exercises.

Potential Environmental Impacts Associated with the Facility Management Element

- Potential direct and/or indirect impacts may be associated with activities related to trail or parking lot maintenance, or sediment removal. However, all maintenance projects will be assessed for potential impacts prior to implementation, and all impacts are expected to be temporary. For example, noise and dust might be produced if heavy equipment is used, but if activities are carried out during the non-breeding season, no impacts to sensitive bird species would be expected. Additionally, any “take” of habitat would be mitigated through avoidance, revegetation, or the use of hand tools rather than mechanized equipment.
- Creation of a pond for dog training exercises at one of the former stock ponds within the property will not result in significant impacts. The former stock ponds occur in disturbed areas, and necessary piping to fill and maintain them (installed between a proposed pond and the nearest well) can all be located within existing dirt roads. At the location of the first pond that would be restored, the existing small earthen berm and pond surface may need improvement; however, these features coincide with existing non-native grassland and disturbed habitat. The earthen berm (dam) associated with this proposed dog training pond at HCWA would not be regulated by the Division of Safety of Dams (i.e., no jurisdiction over dams less than 25 feet in height with a storage capacity less than 50 acre-feet). Furthermore, there are no downstream structures that would be threatened by failure of the small berm associated with the proposed dog training pond. As restoration of the other former stock ponds is pursued, similar evaluation of the conditions and appropriate CEQA evaluation will be conducted.

F. SCIENTIFIC RESEARCH AND BIOLOGICAL MONITORING ELEMENT

This element provides goals and tasks that encourage scientific study, especially in relation to open space management. In addition, these goals encourage consistency with various monitoring and management efforts in San Diego County. Biologists are drawn to San Diego County, in part, because it is a “hotspot” of biodiversity. Numerous universities and colleges in the area

support research in conservation biology, land management, population genetics, metapopulation dynamics, systematics, etc. The scientific community's active role in regional conservation adds scientific rigor to the process of natural resources management. In addition, wildlife agencies, non-governmental organizations (NGOs), community groups and the public participate in activities relevant to this LMP, such as trail planning, educational outreach, and land stewardship. Coordinating with these groups will give the community a sense of ownership in HCWA and enable the Department to tap into this valuable resource.

Opportunities

- Coordinating with other management and monitoring protocols and guidelines will make management efforts at HCWA more effective. Coordination among land managers provides opportunities to use and build upon pertinent research with a relevant regional perspective. This type of coordination also allows land managers to compare data between years and among other preserved areas in the County MSCP plan area. This is an important component of the adaptive management strategy.
- Encouraging scientific, conservation-related research will benefit land managers by providing information that will help more efficiently manage, monitor, and protect sensitive biological resources, and will add scientific rigor to management strategies.

Constraints

- Collecting, analyzing, and reporting the results of scientific research can take years, which may be beyond the immediate management timeframe.
- The priorities of researchers are not always the same as those of land managers. Therefore, it may be difficult to encourage research projects that are directly relevant to RJER management.

Mon 1.0 Goal – Scientific Research

Provide opportunities for scientific research that will support the adaptive management strategy and provide useful biological information to land managers.

Tasks:

- Mon 1.1: Identify data gaps related to management, monitoring, and species or ecosystem-level biology and design; or encourage research projects on these topics.

Mon 1.2: Identify experimental design opportunities to be incorporated into habitat and species management, restoration, and/or reintroduction projects on the wildlife area.

Mon 1.3: Facilitate access to students and researchers from local universities and colleges. Encourage research that supports the goals of this LMP.

Mon 2.0 Goal – Consistency with Appropriate Management and Monitoring Protocols

When defining the details of the methodology for tasks in the Biological Element goal, use relevant, established protocols.

Tasks:

Mon 2.1: Use the following protocols as appropriate:

- a) State and federally listed species.
 - Thornmint – utilize Department protocols for monitoring and population assessment.
 - USFWS focused species survey protocols for Quino checkerspot butterfly, arroyo toad, and California gnatcatcher.
 - A management and monitoring plan for Quino checkerspot butterfly (*Euphydryas editha quino*) and its habitats in San Diego County (Longcore et al. 2003).
 - Survey and monitoring report for the arroyo toad conducted in the MSCP study area (USGS in progress).
- b) MSCP covered species.
 - Draft MSCP Framework Management Plan (County of San Diego 2001, see also Ogden 1996; CBI 2001a and 2001b)
- c) Vegetation Communities.
 - California Native Plant Society - Rapid Assessment Protocol (CNPS 2005). If used, the vegetation communities described in this LMP will first have to be crosswalked to the classification system used in Sawyer and Keeler-Wolf (1995).

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- MSCP annual report. Includes information about post-fire habitat recovery monitoring conducted for the MSCP; photo points established near Rancho Jamul (County of San Diego 2006).
- d) Sensitive Habitats.
- Final report for Creating an Index of Biological Integrity for Coastal Sage Scrub: A tool for habitat quality assessment and monitoring (Diffendorfer et al. 2004).
 - Adaptive management for southern California grasslands (Chadden et al. 2004).
- e) Rare Plants.
- Survey methods should be consistent with those used for the baseline biodiversity study (USGS 2004a).
 - Although no rare plant monitoring protocol is available for the South County MSCP, see MSCP rare plant monitoring: field monitoring methods (City of San Diego 2005), Department HCPB protocols, and USFWS protocols.
- f) Sensitive Wildlife.
- Refer to habitat surveys and monitoring reports on bats and southwestern pond turtle throughout the San Diego MSCP study area (includes management recommendations) (County of San Diego n.d.).
- g) Dove and Quail
- Annual censusing should follow national and California protocols.
- h) General Surveys.
- General wildlife surveys and non-native species surveys should be consistent with methods used in USGS (2004a).
- i) Wildlife movement.
- *Wildcat Canyon Road Enhancement Project Before-After-Control-Impact Study*. Final preconstruction report (EDAW 2005).

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- Wildlife Corridor Monitoring Study, prepared for the Multiple Species Conservation Program (CBI 2003b).
- j) Adaptive management.
- Designing monitoring programs in an adaptive management context for regional multiple species conservation plans (USGS 2004b).

Potential Environmental Impacts Associated with the Scientific Research and Biological Monitoring Element

No impacts are expected from the Scientific Research and Biological Monitoring Element. All research projects will be evaluated for potential impacts, which will be avoided, minimized, or mitigated to a less than significant level. All researchers will be properly permitted and qualified to conduct their relevant monitoring programs.

G. FIRE MANAGEMENT ELEMENT

In 1994, the California State Board of Forestry and the California Fish and Game Commission adopted an interim *Joint Policy on Pre, During, and Post-fire Activities and Wildlife Habitat*. This joint policy describes multiple measures that both CDF and the Department should undertake to protect lives and property with consideration of natural resources. These measures would be implemented before, during, and after fires. Additional state, local, and federal policies and agreements that apply to fire management activities on HCWA include the following:

- California Fire Plan: A Framework for Minimizing Costs and Losses from Wildland Fires (CDF 1996).
- Memorandum of Understanding and Operating Agreement between the California Department of Forestry and the California Department of Fish and Game regarding the Department's Lands in San Diego County (2002).
- Memorandum of Understanding between the Fish and Wildlife Service of the United States Department of Interior, the California Department of Fish and Game, the California Department of Forestry [and Fire Protection], the San Diego County Fire Chief's Association, and the Fire District's Association of San Diego County, signed on

February 26, 1997 (USFWS 1997a). Guidance is applicable to defensible space, fuelbreaks, and greenbelts within 100 feet of structures and 30 feet of roads.

- Biological Opinion on Fish and Wildlife Service Participation in a Memorandum of Understanding with the San Diego County Fire Chief's Association Addressing Flammable Vegetation Abatement in San Diego County (1-6-97-FS-19), dated February 26, 1997 (USFWS 1997b). This document authorizes take and provides terms and conditions for the actions described in the above Memorandum of Understanding.

Opportunities

- Continuing coordination among fire agencies (e.g., CDF with federal and local fire departments) and with adjacent landowners and communities can increase the likelihood of sustaining long-term ecosystem health and processes in fire-adapted lands.

Constraints

- Private land to the north and south of HCWA is likely to continue to develop, increasing the risk of ignition from human sources.
- Although wildfires have not affected HCWA in many years, a future large-scale fire could have a negative impact on the biological resources within the property. Although many habitat types, most notably coastal sage scrub and chaparral, have adapted to periodic wild fires, an intense and large-scale fire can have a detrimental effect on the natural communities and associated plants and animals. For example,
 - Fires commonly increase erosion by removing vegetation that holds the soil together with its root system.
 - Particularly large or frequent fires often lead to a greater vulnerability to invasion by non-native plant species and a potential for type conversion of scrub vegetation to weedy grass and forb habitat (Oberbauer 2003).
 - Burned riparian areas along stream courses may provide an avenue for the introduction and spread of non-native giant reed and salt cedar, which could potentially displace native willows and other riparian species.

Overall, the goals for fire management are to protect lives and property, and to maintain natural ecosystems within HCWA.

Fire 1.0 Goal – Pre-fire Fire Management

Develop and implement pre-fire vegetation access, treatments, and inter-agency coordination to sustain long-term ecosystem health and processes and minimize impacts to facilities and biological and cultural resources within HCWA.

Tasks:

- Fire 1.1 Meet biennially with CDF representatives to discuss fire-related issues relevant to HCWA, including vegetation management, recent fires in the property, current contact information, areas of high fire hazard, sensitive areas to avoid in firefighting activities, priority suppression areas (especially cultural and biological resources), potential access and staging areas, availability of fire-fighting personnel, procedures, and other relevant factors. Areas of concern should be identified on a map that is updated as needed.
- Fire 1.2 Develop a wildfire management plan (WFMP) to address ongoing fire management needs for both wildlife habitat and defensible space. Review WFMP every 5 years and update if needed. This WFMP should be consistent with the brush management Memorandum of Understanding (UWTF 1997), and should include the following:
- a) Assess road conditions and maintain road surfaces and width to allow access by wildland firefighting engines.
 - b) Mow grasses and thin or reduce vegetation (fuel management zones) in areas adjacent to public vehicle access to minimize risks of ignition (e.g., parking lots, access to any proposed dog training ponds, and the restricted access road to the private in-holding within HCWA).
 - c) Address coordination needs with Caltrans and the Department for fuel management along SR 94, Honey Springs Road, and Rancho Jamul Drive.
 - d) Incorporate plans for cooperative management of habitat through prescribed burns at specific locations (e.g., hunting areas, or habitat restoration efforts).
 - e) Incorporate methods for fire response that would consider effects on natural and cultural resources within HCWA, i.e., identify fire

suppression tactics that could have adverse long-term effects on ecosystems or cultural resources (e.g., use of retardant), and those tactics should be avoided or modified whenever feasible.

- Fire 1.3 Participate in preparing Community Wildfire Protection Plans for areas that encompass HCWA. Work with any Fire Safe Councils established in the area, or absent such a council, work with adjacent homeowners regarding establishment and inspection of defensible space.
- Fire 1.4 Train a Department biologist to serve the role of resource specialist or agency representative through the Incident Command System.
- Fire 1.5 Review and comment on adjacent development proposals to ensure these projects incorporate adequate space so that HCWA lands are least impacted by future fire risks.

Fire 2.0 Goal – Fire Suppression

Conduct wildfire suppression activities in ways that sustain long-term ecosystem health and processes, and minimize impacts to facilities and biological and cultural resources within HCWA.

Tasks:

- Fire 2.1 Establish staging areas on roads and already-disturbed areas.
- Fire 2.2 Prohibit bulldozer use within 100 feet of stream centers, in riparian areas. Avoid dropping retardant within 200 feet of any riparian areas.
- Fire 2.3 Avoid bulldozer use within 100 feet of cultural resource sites, populations of listed plant species, and occupied Quino checkerspot butterfly habitat.
- Fire 2.4 Coordinate fire suppression activities and cooperate with CDF and local fire districts (including the National Wildlife Refuge, BLM, and rural fire departments).

Fire 3.0 Goal – Post-fire Fire Management

Conduct post-fire activities and erosion control to enhance natural plant recovery and succession, restore long-term ecosystem health and processes, and minimize impacts to facilities and biological and cultural resources within HCWA.

Tasks:

- Fire 3.1 After wildfire suppression activities, restore roads, fences, trails, and landscape contours to pre-fire conditions and mitigate for any damage from mechanical firefighting equipment. Remediation needs should be identified immediately so that fire crews can complete the work before demobilizing.
- Fire 3.2 Complete emergency watershed work as soon as possible and before the first heavy rainfall.
- Fire 3.3 Revegetate only in critical areas that are at risk for conversion to non-native habitats, or to reduce invasion of non-native, exotic plant species.
- Fire 3.4 Repair culverts and stream crossings and restore drainage and road surfaces in areas damaged by firefighting activities and post-fire storm runoff.
- Fire 3.5 Monitor invasion of weeds in areas disturbed by fire activities and the effectiveness of erosion control methods, and take corrective actions as needed.

Potential Environmental Impacts Associated with the Fire Element

No significant direct or indirect impacts are expected from activities related to the Fire Management Element. All activities will be conducted by qualified Department and fire agency staff.

Potential adverse impacts will be avoided and/or minimized by:

- Development, review, and approval of site-specific fire management plans for all fuel manipulation activities.
- As needed, fuel management via mechanical clearing or burning shall be conducted outside of typical breeding periods for all sensitive animal species to avoid adverse impacts on reproduction. Fuel management activities will be conducted in a manner that will not contribute to fragmentation of habitat linkages.
- Following fire, all areas burned will be monitored to assess invasion by non-native plant species. Weed-dominated habitats and non-native grasslands dry out earlier than native

perennial species and are easily ignited. Remedial seeding with native plants or other measures will be conducted as needed.

- Areas damaged from fire suppression activities will be promptly repaired.

H. MANAGEMENT COORDINATION ELEMENT

Management coordination includes communicating with others that are involved with conservation, management, and restoration in the region; coordinating management and monitoring efforts with policies, goals, and guidelines of relevant regional plans; and standardizing data management to streamline the process of reporting and updating this LMP in the future.

Opportunities

- Coordinating with other agencies, NGOs (e.g., San Diego County Wildlife Federation, Endangered Habitats League, and Jamul Trails Council), and scientists will provide an opportunity to share resources, knowledge, and data gained from adaptive management efforts.
- Coordination will help promote a broader, more regional perspective when assessing threats to resources and setting management priorities.
- Standardizing collection, management, and dissemination of management related data will facilitate data analysis, tracking, and communication.

Constraints

- It may be difficult for Department staff or personnel from other agencies or groups to find the time to analyze and discuss conservation efforts on a regular basis.
- There may be some differences in philosophy among interested parties regarding conservation and management strategies.

Crd 1.0 Goal – Plan Revisions

Collect and manage HCWA monitoring data in a manner that facilitates MSCP reporting and future LMP revisions.

Tasks:

- Crd 1.1: Standardize methods of data collection and data management.
- a) Develop a protocol for data collection and data management, including geographic information system (GIS) data, to ensure consistency even if there is a personnel change in the Department.
 - b) Ensure that the protocol is consistent with the County's comprehensive MSCP database and reporting procedures.
- Crd 1.2: Annual or semiannual status reports. Prepare regular status reports, and include such information as goals and tasks implemented, management strategies tested and lessons learned, updates to GIS layers (boundaries, trails, fences, species points, vegetation communities, etc.), a description of projects and status, and status of game and sensitive species.
- Crd 1.3: Revise LMP every 5 years. Following the appropriate process, major revisions to this LMP should include revised existing conditions information, policy changes, appropriate CEQA documentation, and changes to goals and tasks based on the best available data and lessons learned from the previous 5 years.

Crd 2.0 Goal – Regional Conservation Coordination

Coordinate with agencies, NGOs, the scientific community, and other interested parties involved with conservation in the region, and ensure consistency with regional planning efforts.

Tasks:

- Crd 2.1: Coordinate with other entities, as appropriate. Discuss conservation goals; threats; methodology for management, monitoring, restoration, and reintroduction; results of management tasks and scientific research; and potential future projects.
- a) *Agencies*: Federal (USFWS, BLM, USFS, and USGS), state (other Department land managers, California Resources Agency, and California State Parks), and county (Departments of Parks and Recreation, and Planning and Land Use).
 - b) *NGOs*: For example, the San Diego County Wildlife Federation, Endangered Habitats League, and Jamul Trails Council.

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- c) *The scientific community* and other land managers using adaptive management strategies.
 - d) Meet with the public to provide them with an opportunity to ask questions and express concerns.

Crd 2.2: Coordinate with relevant regional plans, to ensure that management actions and reporting for HCWA are consistent. Some examples include:

- a) *South County MSCP subarea plan*. Ensure consistency with monitoring protocols, monitoring efforts conducted by the County of San Diego, data submittal for the MSCP annual report, and MSCP goals. Seek opportunities for funding, monitoring assistance, and educational outreach.
- b) *County of San Diego General Plan* and *Jamul/Dulzura Subregional Plan*. Ensure that there is no conflict between these plans and the goals of this LMP. Review and comment on proposed projects that may affect HCWA.
- c) *County trails program and Jamul-Dulzura Community Trail and Pathway Plan*. Ensure that these planning efforts are consistent with the goals of the LMP. Assist in trails plan implementation by trail placement as appropriate.
- d) *Otay River WMP and SAMP (in progress)*. Ensure that planning goals for the Otay River Watershed Management Plan (WMP) and Special Area Management Plan (SAMP) are consistent with goals of this LMP. Accommodate watershed goals and policies as appropriate.

Potential Environmental Impacts Associated with the Management Coordination Element

No impacts to resources are expected from the Management Coordination Element.

V. OPERATIONS AND MAINTENANCE SUMMARY

The purpose of this chapter is to indicate staffing, funding, and other resources to operate and maintain HCWA and accomplish the tasks identified in Section IV. This LMP proposes proactive application of an ecosystem approach to the management of the multiple natural communities and habitats present at HCWA at a more intensive level than in the past. This LMP also identifies tasks for management of public uses, cultural resources, facility maintenance, scientific research and monitoring, fire, and regional coordination that are not currently being conducted. Implementation of many of the tasks will require additional staffing and a commitment of additional budgetary resources if the goals of this LMP are to be achieved. The Department will use this LMP in their budget and work planning efforts. No guarantee of additional staffing or funding can be obligated by this LMP.

In addition to financial resources, this LMP will require periodic revision to ensure that it is kept current and that it appropriately reflects ecosystem response to management and monitoring and state-of-the-art knowledge. It is fully expected that the ongoing, adaptive management of HCWA and advancement of scientific knowledge regarding the area will result in new techniques and opportunities for more effective management of habitat. Suggested procedures to help keep this LMP current and relevant are included in Chapter IV, Subsection H.

A. OPERATIONS AND MAINTENANCE TASKS TO IMPLEMENT PLAN

All of the tasks that were identified in Chapter IV have been summarized, where appropriate, and included in a spreadsheet provided in Appendix F to this LMP. Among all elements, the tasks that have been described herein may be categorized by the type of management that is conducted. The primary management types, and the associated abbreviations used in Appendix F, are listed below:

- Preparation of documents (D)
- Site enhancement (EN)
- Facility maintenance (MA)
- Resource management (MN), including wildlife linkages (LK)
- Resource monitoring (MO)
- Outreach (OU)
- Resource restoration (RE)
- Special projects (SP)

For each task listed in Appendix F, the type of management and the schedule for conducting the activity (e.g., annually, every 5 years, as-needed, etc.) is noted. Appendix F is intended as a living work document for land managers that can be used in combination with and independent of this LMP. It can be sorted by the above listed primary categories, management tasks, scheduling, etc., and may be updated as needed to make it as useful as possible to the Department staff who will oversee and conduct the various tasks identified. An overview of all tasks, by management type and associated scheduling, is provided in Table 14 at the end of this chapter.

B. EXISTING STAFF AND ADDITIONAL PERSONNEL NEEDS

The 5,189-acre HCWA is currently staffed by a percentage of three permanent employees and two part-time temporary employees. To ensure appropriate support of HCWA and performance of the tasks identified in this LMP, a combination of additional site management, maintenance, and administrative staffing will be required. The Department identified the staffing team that would be necessary to implement the tasks described in Chapter IV; these staff types are identified in Appendix F.

Included in Appendix F is the distribution of the hours associated with each staff type estimated to complete each task. In some cases where a particular task refers to another task [e.g., all biology tasks related to adaptive management refer to the first mention of adaptive management, Bio 1.1.3(j)] the labor hours noted should be added to the referenced task. In other instances, only the referenced task contains the associated hours. Some tasks do not contain hours (e.g., experimental design) because additional information about the task will be needed before costs can be estimated. Many of the tasks that have been designated as “Special Projects” may require special funding or may need to be implemented by consultants or academic researchers; therefore, labor hours may not be included for these tasks in Appendix F.

Based on the staff hours entered in Appendix F, approximately 10 additional Department staff would be needed to implement the tasks identified in this LMP. Because not all tasks are conducted each year, fewer additional staff would actually be necessary. In addition, contracting with consultants, researchers, and utilizing volunteers would reduce the number of Department staff necessary to complete the tasks identified in any given year.

C. ESTIMATED OPERATIONS AND MAINTENANCE COST AND FUNDING SOURCES

1. Estimated Costs

Based on the proposed staffing of HCWA, as identified in Appendix F and summarized above, an annual operations and maintenance budget will be determined by the Department. Other costs, e.g., materials and administrative labor associated with contracting non-Department specialists, have not been identified in the LMP and will need additional consideration when budgets are itemized.

2. Funding Sources

Current funding sources for operation and maintenance include:

- Federal Aid in Wildlife Restoration Act (Pittman-Robertson Act)
- USFWS State Wildlife Grant Program, Federal Aid in Wildlife Restoration Program
- The Environmental License Plate Fund

On a project basis, funding sources for capitol improvements / restoration and enhancement could include:

- California Endangered Species Tax Check-Off Fund
- USFWS support under the Federal ESA Section 6 provisions for cooperation with the states
- Wetlands Conservation Fund
- Upland Game Stamp Program
- U.S. Department of Agriculture Natural Resources Conservation Service Farm Bill Programs
- Neotropical Migratory Bird Conservation Act Grants Program
- Riparian Joint Venture
- The Department's Minor/Major Capital Outlay proposals

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- Other programs authorized under future bond acts
 - Department of Water Resources grants available for water conservation, groundwater management, and studies and activities to enhance local water supply reliability
 - Funding from grant programs administered by U.S. Environmental Protection Agency
 - Funding from grant programs administered by the National Fish and Wildlife Foundation
 - Funding from grant programs administered by U.S. Bureau of Reclamation
 - Funding from the San Diego County NCCP
 - The Department's deferred maintenance fund.
 - Funding from grant programs administered by the Wildlife Conservation Board

Table 14
Summary and Schedule of Tasks Organized by Management Type

Tasks	Reference	Every year	Every 3-5 yrs	Every 5 yrs	One Time/ As Needed
DOCUMENTS					
Annual Work Plan	Set annual priorities for: -Wetlands, riparian, and upland habitat management -Habitat restoration -Special status species management -Non-native species removal -Game species management -Cultural resources surveys and management -Public access, educational and outreach tasks -Monitoring (all of the above)	x			
	Set priorities for remediation of threats to/from: -Habitat and restoration areas -Special status species -Game species -Cultural resources -Excessive public use	x			
Miscellaneous Reports/Plans	Prepare various protocols, reports, and plans, as required: -Protocol for data collection and data management -Status reports for incorporation into MSCP annual report -Supplement working bibliography for cultural resources -Treatment plans for new cultural resource sites -Water features "operations manual" -Area-specific restoration plans -Plan for all signage used at HCWA -Wildfire Management Plan -Pursue state and federal permits as needed -Assist with Community Wildfire Protection Plans	x		x	x
Land Management Plan	Update Land Management Plan: -Incorporate boundary changes and new acquisitions -Incorporate current species and habitat data -Incorporate lessons learned from adaptive management -Incorporate current cultural resources data -Incorporate public use monitoring data -Re-evaluate goals and tasks -Update maps and graphics -Prepare appropriate CEQA documentation			x	

Table 14 (Continued).

Tasks	Reference	Every year	Every 3-5 yrs	Every 5 yrs	One Time/ As Needed
ENHANCEMENT					
Biological Resources	Conduct the following for site enhancement: -Designate 100-foot buffers adjacent to riparian corridors, where feasible -Control erosion within uplands -Remove individuals of invasive, non-native plants -Install barriers to limit access into areas important to wildlife movement				x
MAINTENANCE					
Miscellaneous	Regularly maintain the following: -Gates, fences, and trail barriers -Trails, roads, and parking lots -Structures and facilities -Signage -Water features (ponds, wildlife drinkers, fire hydrants, wells, etc.)	x			x
MANAGEMENT					
Biological Resources	Protect and enhance the following: -Sensitive habitat -State and federally listed species -Narrow endemic species -MSCP covered species -Game species	x			x
	Manage wildlife movement corridors and habitat linkages: -Maintain contiguous blocks of wetland and upland habitat -Install fencing to direct wildlife away from roads, and toward undercrossings -Remove fencing that may impede native wildlife movement				x
	Implement invasive species control for the following: -Habitat management -Habitat restoration -Special status species management -Post-fire management	x			x

Table 14 (Continued).

Tasks	Reference	Every year	Every 3-5 yrs	Every 5 yrs	One Time/ As Needed
MANAGEMENT (Continued)					
Biological Resources (Continued)	Implement remedial measures for threats to: <ul style="list-style-type: none"> -Habitat and restoration areas -Special status species -Game species -Cultural resources 	x			x
	Apply adaptive management strategy to/by: <ul style="list-style-type: none"> -Habitat management -Habitat restoration -Management of special status species -Fire management methods -Invasive species eradication -Reviewing current literature -Coordinating with other conservation entities in the region -Coordinating with the scientific community -Encouraging research 	x			x
Cultural Resources	Manage cultural resources by: <ul style="list-style-type: none"> -Assessing conditions and preparing treatment plans for new sites -Assessing threats -Avoiding impacts -Implementing treatments, as needed 				x
Public Use	Refer to the following: <ul style="list-style-type: none"> -Biological Resources Management -General Management -Maintenance 				
General	Install or remove fencing and gates as needed to: <ul style="list-style-type: none"> -Protect sensitive habitat -Protect special status species -Protect cultural resources -Direct wildlife towards undercrossings -Direct wildlife away from paved roads -Direct the public towards appropriate trails, interpretive signage, and wildlife viewing areas 				x

Table 14 (Continued).

Tasks	Reference	Every year	Every 3-5 yrs	Every 5 yrs	One Time/ As Needed
MANAGEMENT (Continued)					
General (Continued)	Incorporate established policies, and guidelines involving: <ul style="list-style-type: none"> -Habitat management -Habitat restoration -Habitat assessments -Species surveys and monitoring -Wildlife movement monitoring -Adaptive management -Fire management 				x
	Evaluate future projects for impacts to biological resources: <ul style="list-style-type: none"> -Management and monitoring activities -Restoration -Public use facilities -Projects related to cultural resources -Fire management activities 	x			
MONITORING					
Baseline Biological Surveys	Supplement baseline biological data, as needed				x
Qualitative Biological Surveys	Asses general condition of: <ul style="list-style-type: none"> -Wetland, riparian, and upland habitat -Habitat restoration and enhancement areas -Habitat that is suitable for state and federally listed species -Special status species (listed, narrow endemics, MSCP covered, and other) -Game species -Disturbed habitat for potential restoration or enhancement -Sources of water for wildlife 	x			
	Identify and prioritize (i.e., high, medium and low) threats to/from: <ul style="list-style-type: none"> -Natural habitat -The success of habitat restoration projects -Special status species -Game species -Invasive non-native plant species -Problematic non-native wildlife -Erosion and sediment deposits -Wildfires -Excessive public use -Edge effects and other indirect impacts -Any other disturbance 	x			

Table 14 (Continued).

Tasks	Reference	Every year	Every 3-5 yrs	Every 5 yrs	One Time/ As Needed
MONITORING (Continued)					
Quantitative Biological Surveys	Identify changes and trends in: -Habitat condition -Special status species presence/absence (conduct focused or protocol-level surveys for listed species) -Game species populations -Game species take		x		
Specialized Biological Surveys	Conduct specialized monitoring of: -Wildlife movement -Special status species population density and distribution		x		x
Cultural Resources Monitoring	Compile cultural resources information: -Compile all inventories / investigations on file for HCWA -Conduct records search at SCIC -Formally evaluate cultural resources for CA Register -Identify areas to be surveyed				x
	Conduct qualitative monitoring of: -Condition of cultural resources -Treatment implementation and its effectiveness -Ground disturbance near cultural resources to assess impacts	x			
Public Use Monitoring	Conduct the following monitoring activities: -Quantitative survey to determine use capacity -Review rules, regulations, materials, and public use for consistency with goals of LMP -Monitor for illegal activity (off-road vehicles, dumping, etc). -Monitor for impacts to habitat or species from excessive public use	x	x		
Facilities Monitoring	Monitor condition of the following -Trails, roads -Parking lots -Signs -Fences and gates -Structures -Water features	x			

Table 14 (Continued).

Tasks	Reference	Every year	Every 3-5 yrs	Every 5 yrs	One Time/ As Needed
OUTREACH					
Public Use	Educate/inform the public about the following: -Detrimental impacts caused by non-native species -Reserve rules, regulations, goals, and areas of access -Local flora and fauna, ecology, conservation -Hunter safety -Volunteer opportunities	x			x
	Coordinate with: -Management and monitoring at RJER -Local interest groups and community groups -Local schools -Local research and educational institutions -Scientific community (researchers and students) -General public -Local and regional fire safety groups -Wildlife agencies	x			x
Cultural Resources	Conduct cultural resources related outreach activities: -Contact Native Americans for information about resources -Involve community in cultural resources activities -Implement stewardship program -Create educational program for cultural resources				x
RESTORATION					
Biological Resources	Quantify candidate restoration areas and implement the following types: -Disturbed habitat (grassland, coastal sage scrub, riparian) -Areas heavily infested with non-native exotic plants -Areas damaged by fire -Damaged or decommissioned trails and roads -Areas damaged by erosion and/or sediment build up -Habitat that is suitable for special status species -Habitat that is suitable for game species				x

Table 14 (Continued).

Tasks	Reference	Every year	Every 3-5 yrs	Every 5 yrs	One Time/ As Needed
SPECIAL PROJECTS					
Biological Resources	Develop the following special projects as feasible: -Actively restore and/or enhance grasslands -Collect seeds and propagate San Diego thornmint -Actively restore habitat for Quino checkerspot butterfly -Actively restore/enhance California gnatcatcher habitat -Conduct intensive invasive species removal -Implement active adaptive management (including pilot studies and hypothesis testing) -Add bluebird nest boxes or bat houses				x
Cultural Resources	Develop the following special use projects as feasible: -Formally evaluate known cultural resources, and develop treatment plan -Identify areas unsurveyed and conduct focused field surveys -Implement treatments to restore and protect cultural resources				x
Public Use	Develop the following special use projects as feasible: -Designate wildlife viewing areas -Develop volunteer program to protect biological and cultural resources				x

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APPENDIX A
HCWA CULTURAL RESOURCES

(Confidential, Provided Separately)

APPENDIX B
HCWA 2005 BIOLOGICAL SURVEYS,
DATES, AND PERSONNEL

APPENDIX B

Table B-1
HCWA 2005 Vegetation Mapping and Rare Plant Survey Dates and Personnel

Dates	Survey Type	Personnel
March 3, 2005	Vegetation mapping and rare plants survey	Danielle Tannourji, Bonnie Hendricks, Scott McMillan, Shawn Johnston, John Messina
March 8, 2005	Vegetation mapping and rare plants survey	Danielle Tannourji, Bonnie Hendricks, Scott McMillan, Shawn Johnston, John Messina
March 9, 2005	Vegetation mapping and rare plants survey	Danielle Tannourji, Bonnie Hendricks, Shawn Johnston, John Messina
April 21, 2005	Vegetation mapping and rare plants survey	Paula Jacks, Shawn Johnston, John Messina
May 11, 2005	Vegetation mapping and rare plants survey	Scott McMillan, Shawn Johnston, John Messina
May 19, 2005	Vegetation mapping and rare plants survey	Scott McMillan, Shawn Johnston, John Messina
May 27, 2005	Vegetation mapping and rare plants survey	Scott McMillan, John Messina
June 2, 2005	Vegetation mapping and rare plants survey	Scott McMillan, John Messina
June 9, 2005	Vegetation mapping and rare plants survey	Scott McMillan, Shawn Johnston, John Messina

Table B-2
HCWA 2005 Wildlife Survey Dates and Personnel

Dates	Survey Type	Personnel
May 19, 2005	General wildlife and habitat assessment surveys	Erin Riley and Barbra Calantas
May 20, 2005	General wildlife and general habitat assessments	Erin Riley and Barbra Calantas
July 11, 2005	General wildlife and general habitat assessments	Barbra Calantas and Brian Woodward

APPENDIX C
HCWA FLORAL INVENTORY

APPENDIX C
Inventory of Plants Detected within the Hollenbeck Canyon Wildlife Area

Scientific Name ¹	Common Name	Habitat ²	Status ³	Covered by MSCP ⁴
CRYPTOGAMS				
PTERIDACEAE - Brake Family				
<i>Pellaea andromedifolia</i>	Coffee Fern	C, G, O	--/--	No
<i>Pellaea mucronata</i> var. <i>mucronata</i>	Bird's-foot Fern	S, C, G	--/--	No
<i>Pentagramma triangularis</i> ssp. <i>triangularis</i>	California Goldenback Fern	S, C, O	--/--	No
<i>Pentagramma triangularis</i> ssp. <i>viscosa</i>	Silverback Fern	S, C, O	--/--	No
SELAGINELLACEAE - Spike-Moss Family				
<i>Selaginella bigelovii</i>	Bigelow's Mossfern	S, C, G	--/--	No
<i>Selaginella cinerascens</i>	Ashy Spike-moss	S, C, G, RD	--/--	No
CONIFERS				
PINACEAE – Pine Family				
<i>Pinus</i> sp.	Pine	C, G, O	--/--	No
DICOTYLEDONS				
ANACARDIACEAE - Sumac Family				
<i>Malosma laurina</i>	Laurel Sumac	S, C	--/--	No
<i>Rhus ovata</i>	Sugarbush	C	--/--	No
* <i>Schinus molle</i>	Peruvian Peppertree	RD, NG, G	--/--	No
<i>Toxicodendron diversilobum</i>	Poison Oak	S, C, NG, G, RD	--/--	No
APIACEAE - Carrot Family				
<i>Apiastrum angustifolium</i>	Mock Parsley	S, C	--/--	No
<i>Daucus pusillus</i>	Rattlesnake Weed	G	--/--	No
<i>Lomatium</i> sp.	Lomatium	C, O	--/--	No
<i>Sanicula</i> sp.	Sanicle	G	--/--	No
ASTERACEAE - Sunflower Family				
<i>Achillea millefolium</i>	Yarrow	S, G, NG	--/--	No
<i>Acourtia microcephala</i>	Sacapellote, Purpleheads	S, C, G	--/--	No
<i>Artemisia californica</i>	California Sagebrush	S	--/--	No
<i>Artemisia douglasiana</i>	Douglas Mugwort	C, G, O, RD	--/--	No
<i>Artemisia palmeri</i>	San Diego Sagewort	C, S, RD	--/List 4	No

Scientific Name ¹	Common Name	Habitat ²	Status ³	Covered by MSCP ⁴
<i>Baccharis salicifolia</i>	Mule-fat	S, RD	--/--	No
<i>Baccharis sarothroides</i>	Broom Baccharis	S, G, RD	--/--	No
<i>Brickellia californica</i>	California Brickellbush	S, G	--/--	No
* <i>Centaurea melitensis</i>	Tocalote	S, G, NG	--/--	No
<i>Chaenactis artemisiifolia</i>	White Pincushion-flower	S, C	--/--	No
<i>Chaenactis glabriuscula</i> var. <i>glabriuscula</i>	Yellow Pincushion-flower	S, C, G, O	--/--	No
* <i>Chamomilla suaveolens</i>	Common Pineapple-weed	S, C, NG	--/--	No
* <i>Cirsium vulgare</i>	Bull Thistle	S,NG	--/--	No
<i>Eriophyllum confertiflorum</i> var. <i>confertiflorum</i>	Golden Yarrow	S, G, NG	--/--	No
<i>Filago arizonica</i>	Arizona Filago	S, C	--/--	No
<i>Filago californica</i>	California Filago	S, C, G, O	--/--	No
<i>Filago depressa</i>	Dwarf Filago	S	--/--	No
* <i>Filago gallica</i>	Narrow-leaf Filago	S, G, NG	--/--	No
<i>Gnaphalium bicolor</i>	Cudweed	S, C	--/--	No
<i>Gnaphalium</i> spp.	Everlasting	S, C, G, NG, O	--/--	No
<i>Gutierrezia californica</i>	California Matchweed	S, G	--/--	No
<i>Gutierrezia sarothrae</i>	Matchweed	S, G	--/--	No
<i>Hazardia squarrosa</i> var. <i>grindelioides</i>	Saw-toothed Goldenbush	S, G	--/--	No
* <i>Hedypnois cretica</i>	Crete Hedypnois	G, NG	--/--	No
* <i>Hypochaeris glabra</i>	Smooth Cat's Ear	S, G, NG	--/--	No
<i>Isocoma menziesii</i>	Coast Goldenbush	S, G	--/--	No
<i>Lasthenia californica</i>	Common Goldfields	S, G	--/--	No
<i>Lasthenia coronaria</i>	Southern Goldfields	S, G	--/--	No
<i>Lessingia filaginifolia</i> var. <i>filaginifolia</i>	California Aster	S, G	--/--	No
<i>Machaeranthera juncea</i>	Rush-like Bristle Bush	S, C	--/List 4	No
<i>Microseris</i> sp.	Miroseris	C, G	--/--	No
<i>Osmadenia tenella</i>	Osmadenia	S, O	--/--	No
<i>Porophyllum gracile</i>	Odora	S	--/--	No
<i>Rafinesquia californica</i>	California Chicory	S, C	--/--	No
* <i>Senecio vulgaris</i>	Common Groundsel	NG	--/--	No
* <i>Silybum marianum</i>	Milk Thistle	S, G, NG	--/--	No
<i>Solidago californica</i>	California Goldenrod	S, C, G, O	--/--	No
* <i>Sonchus asper</i> ssp. <i>asper</i>	Prickly Sow Thistle	G, NG	--/--	No
<i>Stylocline gnaphalioides</i>	Everlasting Nest Straw	S, C	--/--	No
<i>Uropappus lindleyi</i>	Silver Puffs	G, NG	--/--	No
<i>Viguiera laciniata</i>	San Diego Sunflower	S, G, RD	--/List 4	No

Scientific Name ¹	Common Name	Habitat ²	Status ³	Covered by MSCP ⁴
BORAGINACEAE - Borage Family				
<i>Amsinckia menziesii</i> var. <i>intermedia</i>	Rancher's Fireweed	S, NG	--/--	No
<i>Cryptantha</i> sp.	Cryptantha	S, NG	--/--	No
<i>Harpagonella palmeri</i>	Palmer's Grapplinghook	G	--/List 4	No
<i>Pectocarya</i> sp.	Comb Bur	S, C, G	--/--	No
<i>Plagiobothrys collinus</i> var. <i>californicus</i>	California Popcorn Flower	S, G	--/--	No
BRASSICACEAE - Mustard Family				
* <i>Brassica nigra</i>	Black Mustard	S, G, NG	--/--	No
* <i>Hirschfeldia incana</i>	Short-pod Mustard	S, G, NG	--/--	No
<i>Lepidium lasiocarpum</i> var. <i>lasiocarpum</i>	Sand Peppergrass	S, G	--/--	No
<i>Lepidium nitidum</i> var. <i>nitidum</i>	Shining Peppergrass	C, S, G, NG	--/--	No
* <i>Raphanus sativus</i>	Wild Radish	S, G, NG	--/--	No
<i>Rorippa nasturtium-aquaticum</i>	Watercress	RD	--/--	No
CACTACEAE - Cactus Family				
<i>Cylindropuntia californica</i> var. <i>californica</i>	Snake Cholla	S	--/List 1B	C, NE
CAPRIFOLIACEAE				
<i>Sambucus mexicana</i>	Blue Elderberry	RD, S	--/--	No
CARYOPHYLLACEAE - Pink Family				
* <i>Cerastium glomeratum</i>	Mouse-ear Chickweed	NG	--/--	No
* <i>Silene gallica</i>	Common Catchfly	G, NG	--/--	No
CHENOPODIACEAE - Goosefoot Family				
* <i>Atriplex semibaccata</i>	Australian Saltbush	S, G, NG	--/--	No
* <i>Salsola tragus</i>	Russian Thistle	S, G, NG	--/--	No
CONVOLVULACEAE - Morning-Glory Family				
<i>Calystegia macrostegia</i>	Morning-glory	S, C	--/--	No
CRASSULACEAE - Stonecrop Family				
<i>Crassula connata</i>	Dwarf Stonecrop	S, G	--/--	No
<i>Dudleya lanceolata</i>	Coastal Dudleya	S, C	--/--	No

Scientific Name ¹	Common Name	Habitat ²	Status ³	Covered by MSCP ⁴
<i>Dudleya pulverulenta</i>	Chalk-lettuce	C, S	--/--	No
CUCURBITACEAE - Gourd Family				
<i>Marah macrocarpus</i> var. <i>macrocarpus</i>	Wild Cucumber	S	--/--	No
CUSCUTACEAE - Dodder Family				
<i>Cuscuta</i> sp.	Dodder	S, G, NG	--/--	No
ERICACEAE - Heath Family				
<i>Xylococcus bicolor</i>	Mission Manzanita	C, S	--/--	No
EUPHORBIACEAE - Spurge Family				
<i>Chamaesyce polycarpa</i>	Prostrate Spurge	S, C, NG	--/--	No
<i>Eremocarpus setigerus</i>	Doveweed	G, NG	--/--	No
* <i>Ricinus communis</i>	Castor-bean	S, G, NG	--/--	No
FABACEAE - Pea Family				
<i>Astragalus trichopodus</i> var. <i>lonchus</i>	Ocean Locoweed	G, NG	--/--	No
<i>Lathyrus vestitus</i> ssp. <i>alefeldii</i>	San Diego Sweat Pea	S	--/--	No
<i>Lotus argophyllus</i> ssp. <i>argophyllus</i>	Silverleaf Lotus	S, C, O	--/--	No
<i>Lotus hamatus</i>	Grab lotus	S, C	--/--	No
<i>Lotus scoparius</i>	Deerweed	S, G, NG	--/--	No
<i>Lotus strigosus</i>	California Deerweed	S, G, NG	--/--	No
<i>Lupinus bicolor</i>	Minature Lupine	S, G	--/--	No
<i>Lupinus hirsutissimus</i>	Stinging Lupine	S, C	--/--	No
<i>Lupinus succulentus</i>	Arroyo Lupine	G, C	--/--	No
<i>Lupinus truncatus</i>	Chaparral Lupine	S, C, G	--/--	No
* <i>Medicago polymorpha</i>	Bur-clover	NG	--/--	No
* <i>Vicia sativa</i> ssp. <i>sativa</i>	Spring Vetch	NG	--/--	No
FAGACEAE - Oak Family				
<i>Quercus agrifolia</i> var. <i>agrifolia</i>	Coast Live Oak	O, S	--/--	No
<i>Quercus berberidifolia</i>	Scrub Oak	O, C	--/--	No
<i>Quercus engelmannii</i>	Engelmann Oak	O, C, G	--/List 4	No

Scientific Name ¹	Common Name	Habitat ²	Status ³	Covered by MSCP ⁴
GENTIANACEAE – Gentian Family				
<i>Centaurium venustum</i>	Canchalagua	RD, V, G, NG	--/--	No
GERANIACEAE - Geranium Family				
* <i>Erodium botrys</i>	Long-beak Filaree	NG	--/--	No
* <i>Erodium cicutarium</i>	Red-stem Filaree	NG	--/--	No
GROSSULARIACEAE – Gooseberry Family				
<i>Ribes indecorum</i>	White-flowered Currant	S, C	--/--	No
HYDROPHYLLACEAE - Waterleaf Family				
<i>Phacelia cicutaria</i> var. <i>hispida</i>	Caterpillar Phacelia	S	--/--	No
<i>Phacelia parryi</i>	Parry's Phacelia	S, C	--/--	No
<i>Phacelia ramosissima</i> var. <i>latifolia</i>	Shrubby Phacelia	S, C	--/--	No
LAMIACEAE - Mint Family				
<i>Acanthomintha ilicifolia</i>	San Diego Thorn-mint	S, G	FT/SE, List 1B	C, NE
* <i>Marrubium vulgare</i>	Horehound	S, G, NG	--/--	No
<i>Salvia apiana</i>	White Sage	S, G	--/--	No
<i>Salvia columbariae</i>	Chia	S, C	--/--	No
<i>Salvia mellifera</i>	Black Sage	S	--/--	No
LINANCEAE – Flax Family				
<i>Linum lewisii</i> var. <i>lewisii</i>	Flax	O	--/--	No
LYTHRACEAE - Loosestrife Family				
* <i>Lythrum hyssopifolium</i>	Grass Poly	V	--/--	No
MALVACEAE - Mallow Family				
<i>Abutilon palmeri</i>	Indian Mallow	S	--/--	No
<i>Malocothamnus densiflorus</i>	Many-Flowered Bush Mallow	S, G, NG	--/--	No
* <i>Malva parviflora</i>	Cheeseweed	NG	--/--	No

Scientific Name ¹	Common Name	Habitat ²	Status ³	Covered by MSCP ⁴
MYRTACEAEACEAE - Carpetweed Family <i>*Eucalyptus</i> sp.	Eucalyptus	NG	--/--	No
NYCTAGINACEAE - Four-O'Clock Family <i>Mirabilis californica</i>	California Wishbone Plant	S	--/--	No
ONAGRACEAE - Evening Primrose Family <i>Camissonia bistorta</i>	California Sun Cup	S, C, O	--/--	No
<i>Camissonia californica</i>	Mustard Primrose	S, C, G	--/--	No
<i>Clarkia delicata</i>	Campo Clarkia	C, O	--/List 1B	No
<i>Clarkia epilobioides</i>	Canyon Clarkia	S, O	--/--	No
<i>Clarkia purpurea</i> ssp. <i>quadrivulnera</i>	Four-spot Clarkia	S, C, G	--/--	No
<i>Epilobium canum</i> ssp. <i>canum</i>	California Fuchsia	S, RD	--/--	No
OXALIDACEAE - Oxalis Family <i>Oxalis albicans</i> ssp. <i>californica</i>	Wood Sorrel	S, C, G	--/--	No
<i>*Oxalis pes-caprae</i>	Bermuda Buttercup	NG	--/--	No
PAEONIACEAE – Peony Family <i>Paeonia californica</i>	California Peony	S, C	--/--	No
PAPAVERACEAE - Poppy Family <i>Eschscholzia californica</i>	California Poppy	S, C, G	--/--	No
<i>Platystemon californicus</i>	Cream Cups	S, C, G, O	--/--	No
<i>Romneya trichocalyx</i>	Hairy Matilija Poppy	S, C	--/--	No
PLANTAGINACEAE - Plantain Family <i>Plantago erecta</i>	Dot-seed Plantain	G, NG, C	--/--	No
<i>*Plantago ovata</i>	Woolly Plantain	S, NG	--/--	No
PLATANACEAE - Sycamore Family <i>Platanus racemosa</i>	Western Sycamore	RD, S	--/--	No
POLEMONIACEAE - Phlox Family <i>Eriastrum filifolium</i>	Thread-Leaf Woolly Star	S, C	--/--	No
<i>Gilia angelensis</i>	Grassland Gilia	G, NG	--/--	No
<i>Gilia capitata</i> ssp. <i>abrotanifolia</i>	Ball Gilia	S, C, O	--/--	No

Scientific Name ¹	Common Name	Habitat ²	Status ³	Covered by MSCP ⁴
<i>Linanthus dianthiflorus</i>	Ground Pink	S, G	--/--	No
<i>Navarretia hamata</i>	Hooked Skunkweed	S, G	--/--	No
POLYGONACEAE - Buckwheat Family				
<i>Chorizanthe fimbriata</i> var. <i>fimbriata</i>	Fringed Spineflower	S, C	--/--	No
<i>Chorizanthe leptotheca</i>	Ramona Spineflower	S, C	--/List 4	No
<i>Chorizanthe procumbens</i>	Prostrate Spineflower	S, C, G	--/--	No
<i>Eriogonum fasciculatum</i> ssp. <i>fasciculatum</i>	Interior Flat-top Buckwheat	S, G, RD	--/--	No
<i>Eriogonum fasciculatum</i> ssp. <i>polifolium</i>	Interior Flat-top Buckwheat	S, G, RD	--/--	No
<i>Pterostegia drymarioides</i>	Granny's Hairnet	S, C	--/--	No
PORTULACACEAE – Purslane Family				
<i>Calandrinia ciliata</i>	Red Maids	G	--/--	No
<i>Claytonia perfoliata</i> ssp. <i>perfoliata</i>	Common Miner's Lettuce	S, C, RD	--/--	No
PRIMULACEAE - Primrose Family				
* <i>Anagallis arvensis</i>	Scarlet Pimpernel	RD, G, NG	--/--	No
<i>Dodecatheon clevelandii</i> ssp. <i>clevelandii</i>	Padre's Shooting Star	S	--/--	No
PROTEACEAE – Protea Family				
* <i>Grevillea robusta</i>	Silk Oak	NG	--/--	No
RANUNCULACEAE - Crowfoot Family				
<i>Clematis lasiantha</i>	Pipestem Virgin's Bower	S	--/--	No
<i>Delphinium cardinale</i>	Scarlet Larkspur	S, C, O	--/--	No
<i>Delphinium parryi</i> ssp. <i>parryi</i>	Parry's Larkspur	S, C, G, O	--/--	No
RHAMNACEAE - Buckthorn Family				
<i>Ceanothus tomentosus</i>	Ramona Lilac	C	--/--	No
<i>Rhamnus crocea</i>	Spiny Redberry	C, S	--/--	No
ROSACEAE - Rose Family				
<i>Adenostoma fasciculatum</i>	Chamise	C	--/--	No
<i>Heteromeles arbutifolia</i>	Toyon	C, S	--/--	No
<i>Prunus ilicifolia</i> ssp. <i>ilicifolia</i>	Holly-Leaf Cherry	C, O	--/--	No

Scientific Name ¹	Common Name	Habitat ²	Status ³	Covered by MSCP ⁴
RUBIACEAE - Madder Family				
<i>Galium angustifolium</i>	Narrow-leaf Bedstraw	S	--/--	No
* <i>Galium aparine</i>	Common Bedstraw	S, C, G	--/--	No
SALICACEAE - Willow Family				
<i>Salix lasiolepis</i>	Arroyo Willow	RD	--/--	No
SAXIFRAGACEAE - Saxifrage Family				
<i>Jepsonia parryi</i>	Coast Jepsonia	S, G	--/--	No
SCROPHULARIACEAE - Figwort Family				
<i>Antirrhinum nuttallianum</i>	Nuttall's Snapdragon	S, C, G	--/--	No
<i>Castilleja affinis</i> ssp. <i>affinis</i>	Coast Paint Brush	S, C, G	--/--	No
<i>Castilleja exserta</i> ssp. <i>exserta</i>	Purple Owl's-clover	S, C, G	--/--	No
<i>Castilleja foliosa</i>	Wooly Indian Paintbrush	C, G, O	--/--	No
<i>Collinsia heterophylla</i>	Purple Chinese Houses	C, G	--/--	No
<i>Keckiella antirrhinoides</i> var. <i>antirrhinoides</i>	Yellow Bush Penstemon	C	--/--	No
<i>Keckiella cordifolia</i>	Heartleaf Penstemon	C, G	--/--	No
<i>Linaria canadensis</i>	Large Blue Toadflax	C, G	--/--	No
<i>Mimulus aurantiacus</i>	San Diego Monkeyflower	S	--/--	No
<i>Mimulus brevipes</i>	Hillside Monkeyflower	C	--/--	No
<i>Mimulus guttatus</i>	Common Monkeyflower	C, G, RD	--/--	No
<i>Penstemon spectabilis</i>	Showy Penstemon	C	--/--	No
<i>Scrophularia californica</i> ssp. <i>floribunda</i>	California Figwort	S, C	--/--	No
SOLANACEAE - Nightshade Family				
<i>Datura wrightii</i>	Western Jimson Weed	S, G, NG, RD	--/--	No
* <i>Nicotiana glauca</i>	Tree Tobacco	S, G, NG, RD	--/--	No
<i>Solanum douglasii</i>	Douglas' Nightshade	C, S	--/--	No
TAMARICACEAE - Tamarisk Family				
* <i>Tamarix</i> sp.	Tamarisk	RD	--/--	No
URTICACEAE - Nettle Family				
<i>Urtica dioica</i> ssp. <i>holosericea</i>	Giant Creek Nettle	G, NG, RD	--/--	No
* <i>Urtica urens</i>	Dwarf Nettle	NG	--/--	No

Scientific Name ¹	Common Name	Habitat ²	Status ³	Covered by MSCP ⁴
VIOLACEAE - Violet Family				
<i>Viola pedunculata</i>	Johnny-jump-up	G, NG	--/--	No
MONOCOTYLEDONS				
AGAVACEAE - Agave Family				
<i>Hesperoyucca whipplei</i> ssp. <i>whipplei</i>	Our Lord's Candle	S, NG	--/--	No
<i>Yucca schidigera</i>	Mohave Yucca	S, NG	--/--	No
CYPERACEAE - Sedge Family				
<i>Carex triquetra</i>	Triangular-Fruit Sedge	S, C	--/--	No
<i>Eleocharis macrostachya</i>	Pale Spike-rush	RD	--/--	No
IRIDACEAE - Iris Family				
<i>Sisyrinchium bellum</i>	Blue-eyed Grass	S, G, NG	--/--	No
JUNCACEAE - Rush Family				
<i>Juncus acutus</i> ssp. <i>leopoldii</i>	Southwestern Spiny Rush	S, G, RD	--/List 4	No
<i>Juncus bufonius</i>	Toad Rush	RD	--/--	No
<i>Juncus dubius</i>	Mariposa Rush	RD	--/--	No
<i>Juncus mexicanus</i>	Mexican Rush	RD, S, C, G	--/--	No
LILIACEAE - Lily Family				
<i>Allium haematochiton</i>	Red Skin Onion	G	--/--	No
<i>Allium praecox</i>	Early Onion	C, O	--/--	No
<i>Calochortus splendens</i>	Splendid Mariposa Lily	S, G, NG	--/--	No
<i>Calochortus weedii</i> var. <i>weedii</i>	Weed's Mariposa Lily	C	--/--	No
<i>Dichelostemma capitatum</i> ssp. <i>capitatum</i>	Blue Dicks	S, G	--/--	No
POACEAE - Grass Family				
<i>Achnatherum coronatum</i>	Giant Stipa	S, C	--/--	No
<i>Achnatherum diegoense</i>	San Diego County Needlegrass	G, NG	--/List 4	No
* <i>Arundo donax</i>	Giant Reed	RD, M	--/--	No
* <i>Avena</i> sp.	Oat	NG	--/--	No
<i>Bothriochloa barbinodis</i>	Cane Bluestem	G, N, V	--/--	No
* <i>Brachypodium distachyon</i>	False Brome	NG	--/--	No
* <i>Bromus diandrus</i>	Ripgut Grass	NG	--/--	No
* <i>Bromus hordeaceus</i>	Soft Chess	NG	--/--	No

Scientific Name ¹	Common Name	Habitat ²	Status ³	Covered by MSCP ⁴
* <i>Bromus madritensis</i> ssp. <i>rubens</i>	Foxtail Chess	NG	--/--	No
* <i>Hordeum</i> sp.	Barley	NG	--/--	No
* <i>Lamarckia aurea</i>	Goldentop	G, NG, RD	--/--	No
* <i>Lolium</i> sp.	Ryegrass	NG	--/--	No
<i>Melica frutescens</i>	Tall Melic	S	--/--	No
<i>Melica imperfecta</i>	Coast Range Melic	S, C, O	--/--	No
<i>Muhlenbergia microsperma</i>	Little Muhly	S, G	--/--	No
<i>Nassella lepida</i>	Foothill Needlegrass	G, NG	--/--	No
<i>Nassella pulchra</i>	Purple Needlegrass	G, S	--/--	No
* <i>Rhynchelytrum repens</i>	Natal Grass	NG	--/--	No
* <i>Schismus barbatus</i>	Mediterranean Schismus	S, G, NG	--/--	No
* <i>Triticum aestivum</i>	Wheat	NG	--/--	No
* <i>Vulpia myuros</i> var. <i>myuros</i>	Rattail Fescue	S, G, NG	--/--	No

¹ **Data Sources:**

² **Habitat:** Documented or potential habitat of a species. S – coastal sage scrub or disturbed coastal sage scrub; G – native grasslands or disturbed native grasslands; NG – non-native annual grasslands; RD – riparian drainages (riparian scrub, and riparian woodland); O – oak woodland; C – chaparral; V – vernal pools or disturbed vernal pools; P – ponds; M – freshwater marsh or alkali marsh.

³ **Status:** Federal: FT – threatened; State: SE – endangered; CNPS: List 1B – plants are threatened, or endangered in California and elsewhere. List 4 – plants of limited distribution.

⁴ **MSCP Coverage:** C- Covered, NE – Narrow Endemic

* **Introduced Species**

APPENDIX D
HCWA FAUNAL INVENTORY

APPENDIX D
Inventory of Invertebrates Detected within the Hollenbeck Canyon Wildlife Area

Scientific Name	Common Name	Status ¹	Covered by MSCP ²
ATHROPODA			
ARACHNIDA			
<i>Aphonopelma</i> sp.		--/--	No
Unidentified scorpion species	Scorpion	--/--	No
CRUSTACEA			
<i>*Procambarus clarkii</i>	Swamp Crayfish	--/--	No
INSECTA			
HYMENOPTERA (Ants, Bees, Wasps)			
Family Formicidae (Ants)			
Subfamily Dolichoderinae			
<i>Dorymyrmex insanus</i>	Pyramid Ant	--/--	No
<i>Forelius foetidus</i>		--/--	No
<i>Liometopum occidentale</i>	Velvety Tree Ant	--/--	No
<i>Tapinoma sessile</i>	Malodorous House Ant	--/--	No
Subfamily Formicinae			
<i>Camponotus essigi</i>	Carpenter Ant	--/--	No
<i>Camponotus semitestaceus</i>	Carpenter Ant	--/--	No
<i>Camponotus</i> sp.	Carpenter Ant	--/--	No
<i>Formica moki</i>	Wood Ant	--/--	No
<i>Myrmecocystus mimicus</i>	Honey Pot Ant	--/--	No
<i>Myrmecocystus wheeleri</i>	Honey Pot Ant	--/--	No
<i>Prenolepis imparis</i>	Honey Pot Ant	--/--	No
Subfamily Myrmecinae			
<i>Crematogaster californica</i>	Acrobat Ant	--/--	No
<i>Crematogaster coarcata</i>	Acrobat Ant	--/--	No
<i>Crematogaster hespera</i>	Acrobat Ant	--/--	No
<i>Messor andrei</i>	Harvester Ant	--/--	No

Scientific Name	Common Name	Status ¹	Covered by MSCP ²
<i>Messor stoddardii</i>	Harvester Ant	--/--	No
<i>Myrmecina americana</i>	Harvester Ant	--/--	No
<i>Pheidole barbata</i>		--/--	No
<i>Pheidole cerebrosior</i>		--/--	No
<i>Pheidole clementensi</i>		--/--	No
<i>Pheidole hyatti</i>		--/--	No
<i>Pheidole vistana</i>		--/--	No
<i>Pogonomyrmex rugosus</i>	Harvester Ant	--/--	No
<i>Solenopsis amblychila</i>	Native Fire Ant	--/--	No
<i>Solenopsis molesta</i>	Thief Ant	--/--	No
<i>Solenopsis xyloni</i>	Native Southern Fire Ant	--/--	No
<i>Stenamma diecki</i>		--/--	No
<i>Tetramorium spinosum</i>		--/--	No
Family Pompilidae (Spider Wasps)			
<i>Pepsis formosa</i>	Tarantula Wasp	--/--	No
LEPIDOPTERA			
Family Hesperidae (Skippers)			
<i>Erynnis funerealis</i>	Funereal Duskywing	--/--	No
Family Lycaenidae (Blues, Hairstreaks, Coppers)			
<i>Brephidium exilis</i>	Pygmy Blue	--/--	No
<i>Callophrys dumetorum perplexa</i>	Perplexing Hairstreak	--/--	No
<i>Glaucopsyche lygdamus</i>	Southern Blue	--/--	No
<i>Icaricia acmon</i>	Acmon Blue	--/--	No
Family Nymphalidae (Brushfoots)			
<i>Ceononympha tullia</i>	California Ringlet	--/--	No
<i>Chlosyne gabbii</i>	Gabb's checkerspot	--/--	No
<i>Euphydryas editha quino</i>	Quino Checkerspot Butterfly	FE	NE
<i>Junonia coenia</i>	Buckeye	--/--	No
<i>Vanessa annabella</i>	Painted Lady	--/--	No
<i>Vanessa atalanta</i>	Red Admiral	--/--	No
<i>Vanessa cardui</i>	Painted Lady	--/--	No

Scientific Name	Common Name	Status ¹	Covered by MSCP ²
Family Papilionidae			
<i>Papilo eurymedon</i>	Pale Swallowtail	--/--	No
<i>Papilo rutulus rutulus</i>	Western Tiger Swallowtail	--/--	No
<i>Papilio zelicaon</i>	Anise Swallowtail	--/--	No
Family Pieridae (Whites and Sulphurs)			
<i>Anthocaris sara</i>	Sara Orangetip	--/--	No
<i>Anthocaris cethura</i>	Felder's Orangetip	--/--	No
<i>Colias philodice eriphyle</i>	Clouded Sulphur	--/--	No
<i>Pieris rapae</i>	Cabbage White	--/--	No
<i>Pontia sisymbrii</i>	Spring White	--/--	No
<i>Pontia protodice</i>	Checkered White	--/--	No
<i>Nathalis iole</i>	Dainty Sulphur	--/--	No
Family Riodinidae (Metalmarks)			
<i>Apodemia virgulti</i>	Behr's Metalmark	--/--	No

* Introduced Species

¹ Status: Federal: FE – endangered

² MSCP Coverage: C- Covered, NE- Narrow Endemic

Inventory of Vertebrate Species Detected within the Hollenbeck Canyon Wildlife Area

Common Name	Scientific Name	Habitat ¹	Status ²	MSCP Coverage ³	Detection Method ⁴
CLASS: OSTEICHTHYES (Bony Fish)					
ATHERINIFORMES					
POECILIDAE (Livebearers)					
*Mosquito fish	<i>Gambusia affinis</i>		–	No	AS
CLASS: AMPHIBIA (Amphibians)					
CAUDATA (Salamanders)					
PLETHODONTIDAE (Lungless Salamanders)					
Garden Slender Salamander	<i>Batrachoseps major</i>	C, S, W		No	PF
ANURA (Frogs and Toads)					
HYLIDAE (Treefrogs and relatives)					
California Tree Frog	<i>Pseudacris (Hyla) cadaverina</i>	W		No	AS
Pacific Tree Frog	<i>Pseudacris (Hyla) regilla</i>	All except F		No	OD
BUFONIDAE (True Toads)					
Western Toad	<i>Bufo boreas</i>	G, P, W		No	OD
CLASS: REPTILIA (Reptiles)					
SQUAMATA (Lizards and Snakes)					
PHRYNOSOMATIDAE					
San Diego Coast Horned Lizard	<i>Phrynosoma coronatum blainvilli</i>	C, G, S	CSC	C	PF, OD
Western Fence Lizard	<i>Sceloporus occidentalis</i>	C, G, S, W		No	PF, OD
Granite Spiny Lizard	<i>Sceloporus orcutti</i>	C, S		No	PF, OD
Common Side-blotched Lizard	<i>Uta stansburiana</i>	C, G, S		No	PF, OD
EUBLEPHARIDAE (Eyelid Geckos)					
Western Banded Gecko	<i>Coleonyx variegatus</i> ⁴		CSC	No	OD
SCINCIDAE (Skinks)					
Gilbert's Skink	<i>Eumeces gilberti</i>			No	PF
Western Skink	<i>Eumeces skiltonianus</i>	C, G, S, W	CSC	No	PF
TEIIDAE (Whiptails and relatives)					
Orange-throated Whiptail	<i>Cnemidophorus hyperythrus</i>	C, S, W	CSC	C	PF, OD
Western Whiptail	<i>Cnemidophorus tigris</i>	C, G, S, W			PF, OD

Common Name	Scientific Name	Habitat ¹	Status ²	MSCP Coverage ³	Detection Method ⁴
ANGUIDAE (Alligator Lizards and relatives)					
Southern Alligator Lizard	<i>Elgaria multicarinata</i>	C, G, S, W		No	PF
LEPTOTYPHLOPIDAE (Slender Blind Snakes)					
Western Blind Snake	<i>Leptotyphlops humilis</i>			No	PF, OD
BOIDAE (Boas)		C, S			
Coastal Rosy Boa	<i>Charina trivirgata</i> ⁴		, CSC	C	OD
COLUBRIDAE (Colubrids)					
Ringneck Snake	<i>Diadophis punctatus</i>	C, S, W		No	PF
Common Kingsnake	<i>Lampropeltis getula</i>	C, G, S, W		No	PF
Striped Racer (California Whipsnake)	<i>Masticophis lateralis</i>	C, G, S		No	PF
San Diego Gopher Snake	<i>Pituophis catenifer annectans</i>	C, G, S, W		No	
California Black-headed Snake	<i>Tantilla planiceps</i>			No	PF
Common Garter Snake	<i>Thamnophis sirtalis</i>	all		No	OD
VIPERIDAE (Vipers)					
Red Diamond Rattlesnake	<i>Crotalus ruber ruber</i>	C, S	CSC	No	PF
Western Rattlesnake	<i>Crotalus viridis</i>	C, G, S, W		No	PF, OD
CLASS: AVES (Birds)					
CICONIIFORMES (Hérons, Storks, Ibises, and relatives)					
CATHARTIDAE (New World Vultures)					
Turkey Vulture	<i>Cathartes aura</i>	F		No	IN, OD
FALCONIFORMES (Vultures, Hawks, and Falcons)					
ACCIPITRIDAE (Hawks, Old World Vultures, and Harriers)					
Cooper's Hawk	<i>Accipiter cooperi</i>	C, S, W	CSC	C	OD
Golden Eagle	<i>Aquila chrysaetos</i>	all except S	BEPA/SFP	C, NE	BP, OD
Red-tailed Hawk	<i>Buteo jamaicensis</i>	C, G, S, W		No	BP, OD
Red-shouldered Hawk	<i>Buteo lineatus</i>	W		No	BP
Northern Harrier	<i>Circus cyaneus</i>	C, F, G, M, S	CSC	C	IN, OD
White-tailed Kite	<i>Elanus leucurus</i>	C, G	SFP	No	BP, OD
Bald Eagle	<i>Haliaeetus leucocephalus</i>	F, M, W	FT, SE, BEPA	No	OD

Common Name	Scientific Name	Habitat ¹	Status ²	MSCP Coverage ³	Detection Method ⁴
FALCONIDAE (Caracaras and Falcons) American Kestrel	<i>Falco sparverius</i>	G, S, W		No	BP, OD
GALLIFORMES (Megapodes, Curassows, Pheasants, and relatives) ODONTOPHORIDAE (New World Quail) California Quail	<i>Callipepla californica</i>	C, G, S, W		No	BP, OD
CHARADRIIFORMES (Shorebirds, Gulls, and relatives) CHARADRIIDAE (Plovers and relatives) Killdeer	<i>Charadrius vociferus</i>			No	BP, OD
COLUMBIFORMES (Pigeons and Doves) COLUMBIDAE (Pigeons and Doves) Mourning Dove	<i>Zenaida macroura</i>	all		No	BP, OD
CUCULIFORMES (Cuckoos and relatives) CUCULIDAE (Typical Cuckoos) Greater Roadrunner	<i>Geococcyx californianus</i>	C, G, S, W		No	BP, RC
STRIGIFORMES (Owls) TYTONIDAE (Barn Owls) Barn Owl	<i>Tyto alba</i>	W		No	NT, OD
APODIFORMES (Swifts and Hummingbirds) APODIDAE (Swifts) White-throated Swift	<i>Aeronautes saxatalis</i>	F		No	PO
TROCHILIDAE (Hummingbirds) Black-chinned Hummingbird	<i>Archilochus alexandri</i>	C, S, W		No	<u>IN</u>
Anna's Hummingbird	<i>Calypte anna</i>	C, S, W		No	BP
Costa's Hummingbird	<i>Calypte costae</i>	C, S, W		No	BP
Allen's Hummingbird	<i>Selasphorus sasin</i>	C, S, W		No	BP
PICIFORMES (Woodpeckers and relatives) PICIDAE (Woodpeckers and Wrynecks) Northern Flicker	<i>Colaptes auratus</i>	C, S, W		No	IN

Common Name	Scientific Name	Habitat ¹	Status ²	MSCP Coverage ³	Detection Method ⁴
Acorn Woodpecker	<i>Melanerpes formicivorus</i>	W		No	BP
Nuttall's Woodpecker	<i>Picoides nuttallii</i>	W		No	BP, OD
PASSERIFORMES (Perching Birds)					
TYRANNIDAE (Tyrant Flycatchers)					
Western Wood Pewee	<i>Contopus sordidulus</i>	W		No	OD
Pacific-Slope Flycatcher	<i>Empidonax difficilis</i>	W		No	IN, OD
Ash-throated Flycatcher	<i>Myiarchus cinerascens</i>	C, S, W		No	BP
Black Phoebe	<i>Sayornis nigricans</i>	all		No	BP
Say's Phoebe	<i>Sayornis saya</i>	G, S		No	IN
Western Kingbird	<i>Tyrannus verticalis</i>	G, S, W		No	BP, OD
Cassin's Kingbird	<i>Tyrannus vociferans</i>			No	BP, OD
VIREONIDAE (Typical Vireos)					
Hutton's Vireo	<i>Vireo huttoni</i>	W		No	BP, OD
CORVIDAE (Jays, Magpies, and Crows)					
Western Scrub-Jay	<i>Aphelocoma californica</i>	C, S, W		No	BP, OD
American Crow	<i>Corvus brachyrhynchos</i>	C, F, G, S, W		No	BP, OD
Common Raven	<i>Corvus corax</i>	C, F, G, S, W		No	BP, OD
BOMBYCILLIDAE (Waxwings)					
Cedar Waxwing	<i>Bombycilla cedrorum</i>	C, S		No	
PTILOGONATIDAE (Silky Flycatchers)					
Phainopepla	<i>Phainopepla nitens</i>	C, S, W		No	BP, OD
TURDIDAE (Thrushes)					
Hermit Thrush	<i>Catharus guttatus</i>	C, S, W		No	
Swainson's Thrush	<i>Catharus ustulatus</i>			No	OD
Western Bluebird	<i>Sialia mexicana</i>	G/W		C	IN, OD
STURNIDAE (Starlings & Allies)					
*European Starling	<i>Sturnus vulgaris</i>	F, G, W		No	BP

Common Name	Scientific Name	Habitat ¹	Status ²	MSCP Coverage ³	Detection Method ⁴
MIMIDAE (Mockingbirds and Thrashers)					
California Thrasher	<i>Toxostoma redivivum</i>	C, S		No	BP
TROGLODYTIDAE (Wrens)					
Canyon Wren	<i>Catherpes mexicanus</i>	C, S		No	
Rock Wren	<i>Salpinctes obsoletus</i>	C, S		No	
Bewick's Wren	<i>Thryomanes bewickii</i>	C, S, W		No	BP
House Wren	<i>Troglodytes aedon</i>	C, S, W		No	IN, OD
SYLVIIDAE (Old World Warblers and Gnatcatcher)					
Blue Gray Gnatcatcher	<i>Polioptila caerulea</i>	C, W			BP
Coastal California Gnatcatcher	<i>Polioptila californica californica</i>		FT, CSC	C	BP, OD
PARIDAE (Titmice and relatives)					
Oak Titmouse	<i>Baeolophus inornatus</i>	W		No	BP
AEGITHALIDAE (Bushtit)					
Bushtit	<i>Psaltriparus minimus</i>	all		No	BP, OD
HIRUNDINIDAE (Swallows)					
Barn Swallow	<i>Hirundo rustica</i>	F, P		No	
Cliff Swallow	<i>Petrochelidon pyrrhonota</i>	C, F, P		No	BP, OD
Northern Rough-winged Swallow	<i>Stelgidopteryx serripennis</i>	F, P		No	BP
Violet-green Swallow	<i>Tachycineta thalassina</i>	F, P, W		No	BP
REGULIDAE (Kinglets)					
Ruby-crowned Kinglet	<i>Regulus calendula</i>	C, S, W		No	PO
TIMALIIDAE (Babblers)					
Wrentit	<i>Chamaea fasciata</i>	C, S, W		No	BP, OD
FRINGILLIDAE (Finches)					
Lawrence's Goldfinch	<i>Carduelis lawrencei</i>	C, W		No	BP
Lesser Goldfinch	<i>Carduelis psaltria</i>	all		No	BP

Common Name	Scientific Name	Habitat ¹	Status ²	MSCP Coverage ³	Detection Method ⁴
American Goldfinch	<i>Carduelis tristis</i>	W		No	BP
House Finch	<i>Carpodacus mexicanus</i>	all		No	BP
EMBERIZIDAE (Emberizines)					
Southern California Rufous-crowned Sparrow	<i>Aimophila ruficeps canescens</i>	C, S	CSC	C	BP, OD
Grasshopper Sparrow	<i>Ammodramus savannarum</i>	G, S		No	BP, OD
Bell's Sage Sparrow	<i>Amphispiza belli belli</i>	C, S	, CSC	No	BP, OD
Lark Sparrow	<i>Chondestes grammacus</i>	C, G, S, W		No	BP, OD
Song Sparrow	<i>Melospiza melodia</i>	M, W		No	BP
Savannah Sparrow	<i>Passerculus sandwichensis</i>			No	BP
Spotted Towhee	<i>Pipilo maculatus</i>	C, S		No	BP
California Towhee	<i>Pipilo crissalis</i>	C, S, W		No	BP
Vesper Sparrow	<i>Poocetes gramineus</i>	G		No	OD
Black-chinned Sparrow	<i>Spizella atrogularis</i>	C, S		No	
Chipping Sparrow	<i>Spizella passerina</i>			No	IN
White-crowned Sparrow	<i>Zonotrichia leucophrys</i>	all		No	BP
PARULIDAE (Wood Warblers and relatives)					
Yellow-rumped Warbler	<i>Dendroica coronata</i>	all		No	BP
Hermit Warbler	<i>Dendroica occidentalis</i>			No	
Yellow Warbler	<i>Dendroica petechia</i>	W	CSC	No	BP, OD
Common Yellowthroat	<i>Geothlypis trichas</i>	M, W		No	BP
Orange-crowned Warbler	<i>Vermivora celata</i>	C, W		No	BP
Wilson's Warbler	<i>Wilsonia pusilla</i>	C, S, W		No	OD
THRAUPIDAE (Tanagers)					
Western Tanager	<i>Piranga ludoviciana</i>	W		No	BP
CARDINALIDAE (Cardinals, Grosbeaks & Allies)					
Blue Grosbeak	<i>Passerina caerulea</i>	C, S		No	BP
Lazuli Bunting	<i>Passerina amoena</i>	C, S		No	BP, RC
Black-headed Grosbeak	<i>Pheucticus melanocephalus</i>			No	IN

Common Name	Scientific Name	Habitat ¹	Status ²	MSCP Coverage ³	Detection Method ⁴
ICTERIDAE (Blackbirds, Orioles & Allies)					
Red-winged Blackbird	<i>Agelaius phoeniceus</i>	G, M, P, W		No	BP
Brewer's Blackbird	<i>Euphagus cyanocephalus</i>			No	BP
Bullocks Oriole	<i>Icterus bullockii</i>	C, S, W		No	BP
Hooded Oriole	<i>Icterus cucullatus</i>	C, S, W		No	BP
*Brown-headed Cowbird	<i>Molothrus ater</i>	C, M, S, W		No	IN
Western Meadowlark	<i>Sturnella neglecta</i>	G, S		No	BP
CLASS: MAMMALIA (Mammals)					
INSECTIVORA (Insectivores)					
SORICIDAE (Shrews)					
Desert Shrew	<i>Notiosorex crawfordi</i>			No	PF
Ornate Shrew	<i>Sorex ornatus</i>			No	PF
CHIROPTERA (Bats)					
VESPERTILIONIDAE (Evening Bats)					
Pallid Bat	<i>Antrozous pallidus</i>	F	CSC	No	BS
Big Brown Bat	<i>Eptesicus fuscus</i>	F		No	BS
Western Red Bat	<i>Lasiurus blossevillii</i>	F		No	PO
Hoary Bat	<i>Lasiurus cinereus</i>	F		No	BS
California Myotis	<i>Myotis californicus</i>	F		No	BS
Western Small-footed Myotis	<i>Myotis ciliolabrum</i>	F		No	BS
Long-eared Myotis	<i>Myotis evotis</i> ⁴	F		No	IN
Yuma Myotis	<i>Myotis yumanensis</i>	F		No	BS
Western Pipistrelle	<i>Pipistrellus hesperus</i>	F			BS
MOLOSSIDAE (Free-tailed Bats)					
Western Mastiff Bat	<i>Eumops perotis</i>	F	CSC	No	BS
Pocketed Free-tailed Bat	<i>Nyctinomops femorosacca</i>	F	CSC	No	BS
Big Free-tailed Bat	<i>Nyctinomops macrotis</i>	F	CSC	No	OD
Brazilian Free-tailed Bat	<i>Tadarida brasiliensis</i>	F			BS
LAGOMORPHA (Rabbits, Hares, and Pikas)					
LEPORIDAE (Rabbits and Hares)					
Black-tailed Jackrabbit	<i>Lepus californicus</i>	C, G, S	CSC	No	RC

Common Name	Scientific Name	Habitat ¹	Status ²	MSCP Coverage ³	Detection Method ⁴
Desert Cottontail	<i>Sylvilagus audubonii</i>	C, G, S, W		No	RC, TS
RODENTIA (Rodents)					
SCIURIDAE (Squirrels, Chipmunks, and Marmots)					
California Ground Squirrel	<i>Spermophilus beecheyi</i>	C, G, S, W		No	TS
GEOMYIDAE (Pocket Gophers)					
Botta's Pocket Gopher	<i>Thomomys bottae</i>	G, S, W		No	PF
HETEROMYIDAE (Pocket Mice and Kangaroo Rats)					
California Pocket Mouse	<i>Chaetodipus californicus</i>	C, W	CSC	No	PO
San Diego Pocket Mouse	<i>Chaetodipus fallax fallax</i>	S, W	CSC	No	PF, ST
San Diego or San Bernardino Kangaroo Rat	<i>Dipodomys simulans</i>	C, S		No	PF, ST
MURIDAE (Mice, Rats, and Voles)					
California Vole	<i>Microtus californicus</i>	G, S		No	PF
*House Mouse	<i>Mus musculus</i>			No	ST
Dusky-footed Woodrat	<i>Neotoma fuscipes</i>	C, W		No	PO
Desert Woodrat	<i>Neotoma lepida</i>	C, S, W	CSC	No	PF, ST
Brush Mouse	<i>Peromyscus boylii</i>	C, S, W		No	PO
California Mouse	<i>Peromyscus californicus</i>	C, S, W		No	PF
Cactus Mouse	<i>Peromyscus eremicus</i>	S		No	PF, ST
Deer Mouse	<i>Peromyscus maniculatus</i>	C, G, S, W		No	PF, ST
Western Harvest Mouse	<i>Reithrodontomys megalotis</i>	G, S, W		No	PF
CARNIVORA (Carnivores)					
CANIDAE (Foxes, Wolves, and relatives)					
*Domestic Dog	<i>Canis familiaris</i>	C, W		No	RC, TS
Coyote	<i>Canis latrans</i>	C		No	RC, TS
Gray Fox	<i>Urocyon cinereoargenteus</i>	C, G, S, W		No	TS

Common Name	Scientific Name	Habitat ¹	Status ²	MSCP Coverage ³	Detection Method ⁴
PROCYONIDAE (Raccoons and relatives)					
Ringtail	<i>Bassariscus astutus</i>	C, W		No	PO
Raccoon	<i>Procyon lotor</i>	M, P, S, W		No	TS
MUSTELIDAE (Weasels and relatives)					
Long-tailed Weasel	<i>Mustela frenata</i>	G, W		No	OD
MEPHITIDAE (Skunks)					
Striped Skunk	<i>Mephitis mephitis</i>	S, W		No	RC, TS
FELIDAE (Cats)					
Bobcat	<i>Lynx rufus</i>	C, S, W		No	RC, TS
Mountain Lion	<i>Felis concolor</i>	all except F		C	RC
ARTIODACTYLA (Even-toed Ungulates)					
CERVIDAE (Deer, Elk, and relatives)					
Mule Deer	<i>Odocoileus hemionus</i>	all except F		C	RC, TS

¹ Habitat: C – chaparral and open, F – flyover, G – Grassland, M – Freshwater Marsh, P – Pond/Water, S – coastal sage scrub, W – Riparian and Oak woodlands

² Status: Federal: FE – endangered, FT – threatened, FFP – fully protected, BEPA – Bald Eagle Protection Act, FD – federally delisted. State: SE – endangered, ST – threatened, CSC – special concern, SFP – fully protected.

³ MSCP Coverage: C – Covered, NE – Narrow Endemic

⁴ Detection Method Codes

Methods used during 1998-2004 USGS baseline surveys: PO – Potentially Occurring; AS - Aquatic Survey, BP - Bird Point Count Survey, BS - Bat Survey,

IN - Incidental, NT - Night Time Bird Point Count Survey, PF - Pitfall Survey, RC - Remote Camera, ST - Sherman Trap, TS- Track Station.

Observations made before or after USGS baseline surveys: OD – Other Data Sources (incidental sightings or surveys conducted by CDFG, Wildland Inc, Dudeck & Associates, SDNHM Bird Atlas Project, and Lettieri-McIntyre and Associates)

* Introduced species

APPENDIX E
HCWA NATIVE AMERICAN CONTACT PROGRAM

(Confidential, Provided Separately)

APPENDIX F
OPERATIONS AND MAINTENANCE REQUIREMENTS
TO IMPLEMENT THE HCWA LMP

Appendix F Operations and Maintenance Requirements to Implement the HCWA LMP

Item No.	Element	Code	GOAL		Code	Task	Subtasks / Action Items	Management Type*	Schedule	Sr. Biology Super. (Wildlife)	Assoc. Biologist	Wildlife Biologist	Wildlife Habitat Super. I	Wildlife Habitat Assist.	Tractor Oper. Laborer	Fish & Wildlife Tech.	Fish & Wildlife Interpret / II	Scientific/Seasonal Aid	
			Subject	Statement															
1	Bio 1: Habitat	Bio 1.1	Wetlands/Riparian Habitat Management/ Enhancement.	Conserve, manage, and enhance to promote native species diversity, genetic flow, and ecological and hydrological function.	Bio 1.1.1	Survey and Ongoing Monitoring. Conduct periodic surveys to maintain accurate records.	a) Conduct qualitative surveys annually to detect immediate threats to the habitats.	MO	Annual			8							8
2	Bio 1: Habitat	Bio 1.1	Wetlands/Riparian Habitat Management/ Enhancement.	Conserve, manage, and enhance to promote native species diversity, genetic flow, and ecological and hydrological function.	Bio 1.1.1	Survey and Ongoing Monitoring. Conduct periodic surveys to maintain accurate records.	b) Conduct quantitative surveys every 3-5 years to document changes/trends, and allow for timely remediation. Assess the following characteristics: overall habitat structure/condition (i.e., under-story, mid-story, and upper-story), species diversity, and interconnection with neighboring habitats.	MO	3-5 years		2	24							24
3	Bio 1: Habitat	Bio 1.1	Wetlands/Riparian Habitat Management/ Enhancement.	Conserve, manage, and enhance to promote native species diversity, genetic flow, and ecological and hydrological function.	Bio 1.1.2	Assess Threats/Benefits and Set Priorities	a) Map areas that are becoming damaged or degraded, e.g., adverse edge effects, fragmentation, or general habitat degradation. Assess the following indicators: new introduction/expansion of non-native species, unnatural soil compaction, vegetation removal, erosion, increased sediment loads, and trash.	MO	Annual			8							16
4	Bio 1: Habitat	Bio 1.1	Wetlands/Riparian Habitat Management/ Enhancement.	Conserve, manage, and enhance to promote native species diversity, genetic flow, and ecological and hydrological function.	Bio 1.1.2	Assess Threats/Benefits and Set Priorities	b) Prioritize remediation efforts based on relative sensitivity of area affected, connectivity importance, and potential for expansion.	MO	Annual		2								
5	Bio 1: Habitat	Bio 1.1	Wetlands/Riparian Habitat Management/ Enhancement.	Conserve, manage, and enhance to promote native species diversity, genetic flow, and ecological and hydrological function.	Bio 1.1.2	Assess Threats/Benefits and Set Priorities	c) Identify remediation measures, e.g., signage, installation of split-rail fencing, boulders, or other barriers.	MN	Annual		2	8							
6	Bio 1: Habitat	Bio 1.1	Wetlands/Riparian Habitat Management/ Enhancement.	Conserve, manage, and enhance to promote native species diversity, genetic flow, and ecological and hydrological function.	Bio 1.1.2	Assess Threats/Benefits and Set Priorities	d) Evaluate uses along the trails that parallel stream channelsto determine whether improvements, e.g., stream crossings, closure after substantial rains, or realignment, are warranted (refer to Public Use element).	MN	Annual				8			8			
7	Bio 1: Habitat	Bio 1.1	Wetlands/Riparian Habitat Management/ Enhancement.	Conserve, manage, and enhance to promote native species diversity, genetic flow, and ecological and hydrological function.	Bio 1.1.3	Management.	a) Address wetlands and riparian habitat in an annual Work Plan to be prepared by December for management actions the following year (i.e., identify management and restoration tasks, staffing requirements, funding analysis, and schedule).	D	Annual	2	16	16	16						
8	Bio 1: Habitat	Bio 1.1	Wetlands/Riparian Habitat Management/ Enhancement.	Conserve, manage, and enhance to promote native species diversity, genetic flow, and ecological and hydrological function.	Bio 1.1.3	Management.	b) Manage wetland and riparian habitats for a structural diversity to accommodate a high diversity of native wildlife.	MN	On-going	2	8	40	40	80	20	80			160
9	Bio 1: Habitat	Bio 1.1	Wetlands/Riparian Habitat Management/ Enhancement.	Conserve, manage, and enhance to promote native species diversity, genetic flow, and ecological and hydrological function.	Bio 1.1.3	Management.	c) Manage permanent water sources to maintain habitat diversity.	MN	On-going		2	8		16		16			16
10	Bio 1: Habitat	Bio 1.1	Wetlands/Riparian Habitat Management/ Enhancement.	Conserve, manage, and enhance to promote native species diversity, genetic flow, and ecological and hydrological function.	Bio 1.1.3	Management.	d) Identify suitable areas (e.g., segments of trails and roads), implement riparian/wetlands buffer = or > 100 feet from edge of habitat, and allow drainages to meander (see also Bio 1.2 and Pub 5.0).	EN	As-Needed	8	16	80	16		80				

Appendix F Operations and Maintenance Requirements to Implement the HCWA LMP

Item No.	Element	Code	GOAL		Code	Task	Subtasks / Action Items	Management Type*	Schedule	Sr. Biology Super. (Wildlife)	Assoc. Biologist	Wildlife Biologist	Wildlife Habitat Super. I	Wildlife Habitat Assist.	Tractor Oper. Laborer	Fish & Wildlife Tech.	Fish & Wildlife Interpret / II	Scientific/Seasonal Aid
			Subject	Statement														
11	Bio 1: Habitat	Bio 1.1	Wetlands/Riparian Habitat Management/ Enhancement.	Conserve, manage, and enhance to promote native species diversity, genetic flow, and ecological and hydrological function.	Bio 1.1.3	Management.	e) Implement erosion/sediment control BMPs necessary to protect habitat. Use bio-engineered methods whenever feasible.	EN	On-going		2	4	8		8	16		32
12	Bio 1: Habitat	Bio 1.1	Wetlands/Riparian Habitat Management/ Enhancement.	Conserve, manage, and enhance to promote native species diversity, genetic flow, and ecological and hydrological function.	Bio 1.1.3	Management.	e) (Cont.) Remove sediment buildup that threatens critical riparian habitat or where loads threaten road crossings.	EN	On-going		2	8			8			
13	Bio 1: Habitat	Bio 1.1	Wetlands/Riparian Habitat Management/ Enhancement.	Conserve, manage, and enhance to promote native species diversity, genetic flow, and ecological and hydrological function.	Bio 1.1.3	Management.	f) Remove individuals of invasive, non-native plant species.	EN	On-going		2	16		40	8	40		80
14	Bio 1: Habitat	Bio 1.1	Wetlands/Riparian Habitat Management/ Enhancement.	Conserve, manage, and enhance to promote native species diversity, genetic flow, and ecological and hydrological function.	Bio 1.1.3	Management.	g) Remove progeny of the mature pepper tree associated with the homestead site in Hollenbeck Canyon.	EN	On-going							2		4
15	Bio 1: Habitat	Bio 1.1	Wetlands/Riparian Habitat Management/ Enhancement.	Conserve, manage, and enhance to promote native species diversity, genetic flow, and ecological and hydrological function.	Bio 1.1.3	Management.	h) Maintain/enhance wildlife corridors; remove impediments to wildlife movement.	MN/LK	As-Needed		2	2		16		40		80
16	Bio 1: Habitat	Bio 1.1	Wetlands/Riparian Habitat Management/ Enhancement.	Conserve, manage, and enhance to promote native species diversity, genetic flow, and ecological and hydrological function.	Bio 1.1.3	Management.	h) (Cont.) Monitor wildlife movement through culverts and assess the need to construct new or enhance existing structures.	MO/LK	On-going		2	16						
17	Bio 1: Habitat	Bio 1.1	Wetlands/Riparian Habitat Management/ Enhancement.	Conserve, manage, and enhance to promote native species diversity, genetic flow, and ecological and hydrological function.	Bio 1.1.3	Management.	h) (Cont.) Install barriers (e.g., split rail fencing, boulders, etc.) where needed to limit public access into areas potentially critical for wildlife movement.	EN/LK	On-going		2	16						
18	Bio 1: Habitat	Bio 1.1	Wetlands/Riparian Habitat Management/ Enhancement.	Conserve, manage, and enhance to promote native species diversity, genetic flow, and ecological and hydrological function.	Bio 1.1.3	Management.	h) (Cont.) Coordinate with other agencies to prioritize land acquisitions adjacent to HCWA and RJER.	MN	On-going	16	16							
19	Bio 1: Habitat	Bio 1.1	Wetlands/Riparian Habitat Management/ Enhancement.	Conserve, manage, and enhance to promote native species diversity, genetic flow, and ecological and hydrological function.	Bio 1.1.3	Management.	i) Evaluate future management programs for potential impacts to sensitive resources and mitigate potential significant impacts.	MN	On-going	8	8	40						
20	Bio 1: Habitat	Bio 1.1	Wetlands/Riparian Habitat Management/ Enhancement.	Conserve, manage, and enhance to promote native species diversity, genetic flow, and ecological and hydrological function.	Bio 1.1.3	Management.	j) Implement adaptive management strategies by monitoring data. Re-evaluate priorities and activities based on periodic assessments. Specific approaches include: -- Evaluate potential to implement pilot studies or experimental design to test multiple management strategies. E.g., invasive species control comparing: no treatment area, herbicide application, and mechanical removal.	MO	Annual	2	2	16						
21	Bio 1: Habitat	Bio 1.1	Wetlands/Riparian Habitat Management/ Enhancement.	Conserve, manage, and enhance to promote native species diversity, genetic flow, and ecological and hydrological function.	Bio 1.1.3	Management.	j) (Cont.) Establish clear and concise success criteria that must be met to consider management tasks successful.	MN	One-time		2	8						

Appendix F Operations and Maintenance Requirements to Implement the HCWA LMP

Item No.	Element	Code	GOAL		Code	Task	Subtasks / Action Items	Management Type*	Schedule	Sr. Biology Super. (Wildlife)	Assoc. Biologist	Wildlife Biologist	Wildlife Habitat Super. I	Wildlife Habitat Assist.	Tractor Oper. Laborer	Fish & Wildlife Tech.	Fish & Wildlife Interpret / II	Scientific/Seasonal Aid
			Subject	Statement														
22	Bio 1: Habitat	Bio 1.1	Wetlands/Riparian Habitat Management/ Enhancement.	Conserve, manage, and enhance to promote native species diversity, genetic flow, and ecological and hydrological function.	Bio 1.1.3	Management.	j) (Cont.) Use data to assess habitat integrity, detect changes, and positive/adverse effects of management, human use, and non-native species.	MN	Annual		2	8						
23	Bio 1: Habitat	Bio 1.1	Wetlands/Riparian Habitat Management/ Enhancement.	Conserve, manage, and enhance to promote native species diversity, genetic flow, and ecological and hydrological function.	Bio 1.1.3	Management.	j) (Cont.) Regularly review relevant monitoring documents (e.g., framework management plans, MSCP monitoring protocols, published reports) and compile information.	MN	Annual		8	24						
24	Bio 1: Habitat	Bio 1.1	Wetlands/Riparian Habitat Management/ Enhancement.	Conserve, manage, and enhance to promote native species diversity, genetic flow, and ecological and hydrological function.	Bio 1.1.3	Management.	j) (Cont.) Reevaluate priorities and management activities based on this assessment.	MN	Annual		2	2	8					
25																		
26	Bio 1: Habitat	Bio 1.2	Wetlands/Riparian Habitat Restoration	Restore and enhance to foster desired ecological and hydrological function	Bio 1.2.1	Survey and Ongoing Monitoring. Identify areas where expansion or restoration of existing wetlands or riparian habitat could be conducted.	a) Remove eucalyptus trees from western segment of Jamul Creek and Dulzura Creek near old Honey Springs Ranch, and subsequently restore area.	RE	One-time	2	2	8		80		80		160
27	Bio 1: Habitat	Bio 1.2	Wetlands/Riparian Habitat Restoration	Restore and enhance to foster desired ecological and hydrological function	Bio 1.2.1	Survey and Ongoing Monitoring. Identify areas where expansion or restoration of existing wetlands or riparian habitat could be conducted.	b) Recontour and restore the unnamed tributary in the west-central portion of HCWA where ongoing erosion has created a deep gully.	RE	One-time	2	2	40	40	80	40	80		160
28	Bio 1: Habitat	Bio 1.2	Wetlands/Riparian Habitat Restoration	Restore and enhance to foster desired ecological and hydrological function	Bio 1.2.1	Survey and Ongoing Monitoring. Identify areas where expansion or restoration of existing wetlands or riparian habitat could be conducted.	c) Decommission and restore unnecessary trails near wetland and riparian habitats. Realign segments of open trails to provide a buffer = or > 100 feet from edge of riparian habitat, then restore previously open segments.	RE	One-time	2	2	24		24	8			48
29	Bio 1: Habitat	Bio 1.2	Wetlands/Riparian Habitat Restoration	Restore and enhance to foster desired ecological and hydrological function	Bio 1.2.1	Survey and Ongoing Monitoring. Identify areas where expansion or restoration of existing wetlands or riparian habitat could be conducted.	d) Restore abandoned stock pond near old Honey Springs Ranch for dog training (refer to Public Use and Facility Maintenance elements). Provide appropriate wetland vegetative cover useful for training exercises that will also provide localized wildlife habitat.	RE	One-time	2	2	24		80		80		40
30	Bio 1: Habitat	Bio 1.2	Wetlands/Riparian Habitat Restoration	Restore and enhance to foster desired ecological and hydrological function	Bio 1.2.1	Survey and Ongoing Monitoring. Identify areas where expansion or restoration of existing wetlands or riparian habitat could be conducted.	e) Create additional water sources for wildlife by developing springs or installing wildlife drinkers in upland areas.	RE	One-time	2	8	24	24				24	48
31	Bio 1: Habitat	Bio 1.2	Wetlands/Riparian Habitat Restoration	Restore and enhance to foster desired ecological and hydrological function	Bio 1.2.2	Assess Threats/Benefits and Set Priorities.	a) Prioritize areas to be restored, e.g., HIGH = areas that should be restored immediately, MEDIUM = areas to be restored within the next 3 years, and LOW = areas to be monitored and restored when time, budget, and staffing allow.	MN	Annual		2	4						
32	Bio 1: Habitat	Bio 1.2	Wetlands/Riparian Habitat Restoration	Restore and enhance to foster desired ecological and hydrological function	Bio 1.2.2	Assess Threats/Benefits and Set Priorities.	b) Evaluate benefits to downstream riparian systems within HCWA and RJER.	MN	Annual		2	4						
33	Bio 1: Habitat	Bio 1.2	Wetlands/Riparian Habitat Restoration	Restore and enhance to foster desired ecological and hydrological function	Bio 1.2.2	Assess Threats/Benefits and Set Priorities.	c) Pursue projects that work with nature vs. against it, i.e., allow creeks to meander naturally.	MN	Annual		2	8						

Appendix F Operations and Maintenance Requirements to Implement the HCWA LMP

Item No.	Element	Code	GOAL		Code	Task	Subtasks / Action Items	Management Type*	Schedule	Sr. Biology Super. (Wildlife)	Assoc. Biologist	Wildlife Biologist	Wildlife Habitat Super. I	Wildlife Habitat Assist.	Tractor Oper. Laborer	Fish & Wildlife Tech.	Fish & Wildlife Interpret / II	Scientific/Seasonal Aid	
			Subject	Statement															
34	Bio 1: Habitat	Bio 1.2	Wetlands/Riparian Habitat Restoration	Restore and enhance to foster desired ecological and hydrological function	Bio 1.2.3	Management.	a) Develop area-specific restoration plans, including planting design and specifications, goals, and costs. Plans for areas that are heavily infested with non-native species should contain an intensive exotic species removal component, including herbicide treatment and replanting.	D	As-needed		2	24							
35	Bio 1: Habitat	Bio 1.2	Wetlands/Riparian Habitat Restoration	Restore and enhance to foster desired ecological and hydrological function	Bio 1.2.3	Management.	b) Pursue appropriate permits for restoration projects within state and federal waters (i.e., wetlands and waters regulated under Section 404 of the Clean Water Act and Fish and Game Code Sections 1600-1616).	D	As-needed		8	40							8
36	Bio 1: Habitat	Bio 1.2	Wetlands/Riparian Habitat Restoration	Restore and enhance to foster desired ecological and hydrological function	Bio 1.2.3	Management.	c) Limit access to restored areas to protect them from impacts due to unauthorized public use, e.g., install fencing, boulders, or other barriers.	MN	One-time	2	2	8	8	80	80				160
37	Bio 1: Habitat	Bio 1.2	Wetlands/Riparian Habitat Restoration	Restore and enhance to foster desired ecological and hydrological function	Bio 1.2.3	Management.	d) Pursue funding for identified restoration projects.	MN	As-needed	2	24								
38	Bio 1: Habitat	Bio 1.2	Wetlands/Riparian Habitat Restoration	Restore and enhance to foster desired ecological and hydrological function	Bio 1.2.3	Management.	e) Conduct post-restoration monitoring.	MO	As-needed			40							80
39	Bio 1: Habitat	Bio 1.2	Wetlands/Riparian Habitat Restoration	Restore and enhance to foster desired ecological and hydrological function	Bio 1.2.3	Management.	f) Adaptive management. Use monitoring data to assess progress of restored areas [refer to Bio 1.1.3 (j) for details].	MO	Annual			8							
40																			
41	Bio 1: Habitat	Bio 1.3	Upland Habitat Management/Enhancement.	Conserve and maintain native regional biological diversity.	Bio 1.3.1	Survey and Ongoing Monitoring. Conduct periodic surveys to maintain accurate records.	a) Conduct qualitative surveys annually to detect immediate threats to the habitats.	MO	Annual		8	24							
42	Bio 1: Habitat	Bio 1.3	Upland Habitat Management/Enhancement.	Conserve and maintain native regional biological diversity.	Bio 1.3.1	Survey and Ongoing Monitoring. Conduct periodic surveys to maintain accurate records.	b) Conduct quantitative surveys every 3-5 years to document changes/trends, and allow for timely remediation efforts. Assess the following characteristics: overall habitat structure/condition, species diversity, incidence of non-native species, and connection with neighboring habitats.	MO	3-5 years		2	40							80
43	Bio 1: Habitat	Bio 1.3	Upland Habitat Management/Enhancement.	Conserve and maintain native regional biological diversity.	Bio 1.3.1	Survey and Ongoing Monitoring. Conduct periodic surveys to maintain accurate records.	c) Survey oak woodland habitat to assess overall habitat integrity; evaluate edge effects, fragmentation/degradation from unauthorized access, and signs of disease. Identify where site improvement is warranted.	MO	3-5 years				16						
44	Bio 1: Habitat	Bio 1.3	Upland Habitat Management/Enhancement.	Conserve and maintain native regional biological diversity.	Bio 1.3.2	Assess Threats/Benefits and Set Priorities	a) Map areas that are becoming damaged or degraded, e.g., adverse edge effects, general habitat degradation, fragmentation, high fuel loads (particularly chaparral), and monotypic age classes. Assess the following indicators: new introductions or expansions of non-native species, unnatural soil compaction, vegetation removal, erosion, trash, dense cover with high amounts of dead biomass.	MO	Annual			8							
45	Bio 1: Habitat	Bio 1.3	Upland Habitat Management/Enhancement.	Conserve and maintain native regional biological diversity.	Bio 1.3.2	Assess Threats/Benefits and Set Priorities	b) Prioritize remediation efforts based on relative sensitivity of area affected, e.g., whether habitat conversion is at risk, and potential for expansion of the threat.	MN	Annual		2	8							

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Item No.	Element	Code	GOAL		Code	Task	Subtasks / Action Items	Management Type*	Schedule	Sr. Biology Super. (Wildlife)	Assoc. Biologist	Wildlife Biologist	Wildlife Habitat Super. I	Wildlife Habitat Assist.	Tractor Oper. Laborer	Fish & Wildlife Tech.	Fish & Wildlife Interpret / II	Scientific/Seasonal Aid
			Subject	Statement														
46	Bio 1: Habitat	Bio 1.3	Upland Habitat Management/Enhancement.	Conserve and maintain native regional biological diversity.	Bio 1.3.2	Assess Threats/Benefits and Set Priorities	c) Identify remediation measures, e.g., signage, installation of split-rail fencing, boulders, or other barriers. Consider fuel reduction programs (refer to Fire 1.0).	MN	Annual		1	4						
47	Bio 1: Habitat	Bio 1.3	Upland Habitat Management/Enhancement.	Conserve and maintain native regional biological diversity.	Bio 1.3.2	Assess Threats/Benefits and Set Priorities	d) Evaluate the effect of trail use near the coastal sage scrub/clay lens habitat in the north-central portion of the wildlife area to determine whether protective measures, e.g., installation of split-rail fencing, closure after substantial rain events, or realignment, are warranted [refer to Bio 2.1.3(b) and (c)].	MO	Annual		2	4	8		8	16		32
48	Bio 1: Habitat	Bio 1.3	Upland Habitat Management/Enhancement.	Conserve and maintain native regional biological diversity.	Bio 1.3.3	Management.	a) Address upland habitat in the annual Work Plan to be prepared by December of each year (see Bio 1.1.3).	D	Annual	8	8	8	8	8			8	
49	Bio 1: Habitat	Bio 1.3	Upland Habitat Management/Enhancement.	Conserve and maintain native regional biological diversity.	Bio 1.3.3	Management.	b) Protect and maintain upland habitats to provide breeding and foraging habitat for sensitive species.	MN	On-going	24	24	24						
50	Bio 1: Habitat	Bio 1.3	Upland Habitat Management/Enhancement.	Conserve and maintain native regional biological diversity.	Bio 1.3.3	Management.	c) Manage upland habitats to maintain habitat and native wildlife diversity, and avoid conversion to another habitat type.	MN	On-going	24	24	24						
51	Bio 1: Habitat	Bio 1.3	Upland Habitat Management/Enhancement.	Conserve and maintain native regional biological diversity.	Bio 1.3.3	Management.	d) Plant food crops (e.g., cereal wheat) in non-native grasslands in designated hunting areas to attract dove and quail.	EN	Annual	2	4	8	8		40			40
52	Bio 1: Habitat	Bio 1.3	Upland Habitat Management/Enhancement.	Conserve and maintain native regional biological diversity.	Bio 1.3.3	Management.	e) Provide erosion control to prevent gully or rill formation within uplands, and adverse sedimentation into adjacent riparian areas.	EN	As-needed		2	8		16				32
53	Bio 1: Habitat	Bio 1.3	Upland Habitat Management/Enhancement.	Conserve and maintain native regional biological diversity.	Bio 1.3.3	Management.	f) Remove individuals of invasive, non-native plant species to reduce the threat of future expansion and enhance habitat for native species.	EN	On-going		2	16						40
54	Bio 1: Habitat	Bio 1.3	Upland Habitat Management/Enhancement.	Conserve and maintain native regional biological diversity.	Bio 1.3.3	Management.	g) Manage non-native grassland habitat in northern and west-central portions of HCWA for continued use by dog trainers, and to prevent degradation.	MN	On-going		8	8	2	16	16			
55	Bio 1: Habitat	Bio 1.3	Upland Habitat Management/Enhancement.	Conserve and maintain native regional biological diversity.	Bio 1.3.3	Management.	h) Install barriers (e.g., split rail fencing, boulders, etc.) where needed to limit public access into areas potentially critical for wildlife movement (e.g., narrow segments of oak woodlands).	EN/LK	As-needed		2	8						
56	Bio 1: Habitat	Bio 1.3	Upland Habitat Management/Enhancement.	Conserve and maintain native regional biological diversity.	Bio 1.3.3	Management.	i) Evaluate all upland habitat management programs for potential impacts to sensitive biological resources and take appropriate steps to avoid or mitigate potential significant impacts.	MN	Annual	2	2	8						
57	Bio 1: Habitat	Bio 1.3	Upland Habitat Management/Enhancement.	Conserve and maintain native regional biological diversity.	Bio 1.3.3	Management.	j) Employ adaptive management strategies for upland habitats. Refer to Bio 1.1.3 (j) for details.	MO	Annual		8	8						
58																		
59	Bio 1: Habitat	Bio 1.4	Upland Habitat Restoration.	Restore and enhance lost functions and provide opportunities for expansion or reintroduction of native species.	Bio 1.4.1	Survey and Ongoing Monitoring. Identify where expansion or restoration of upland habitats could be conducted.	a) Restore and enhance the disturbed non-native grasslands between Jamul Creek and Hollenbeck Canyon (exclusive of the hunting field where cereal wheat is sown).	RE	One-time			8						

Appendix F Operations and Maintenance Requirements to Implement the HCWA LMP

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			Subject	Statement														
60	Bio 1: Habitat	Bio 1.4	Upland Habitat Restoration.	Restore and enhance lost functions and provide opportunities for expansion or reintroduction of native species.	Bio 1.4.1	Survey and Ongoing Monitoring. Identify where expansion or restoration of upland habitats could be conducted.	b) Restore portions of the coastal sage scrub/clay lens area that have become degraded.	RE	One-time		8	24		8	8	40		80
61	Bio 1: Habitat	Bio 1.4	Upland Habitat Restoration.	Restore and enhance lost functions and provide opportunities for expansion or reintroduction of native species.	Bio 1.4.1	Survey and Ongoing Monitoring. Identify where expansion or restoration of upland habitats could be conducted.	c) Decommission and restore unnecessary trails and roads. Realign and restore segments of open trails to provide a greater buffer near highly sensitive upland habitats or near riparian habitat (refer to Bio 1.1.3). Obtain necessary permits for restoration, as needed.	RE	One-time		24	24	80		80			80
62	Bio 1: Habitat	Bio 1.4	Upland Habitat Restoration.	Restore and enhance lost functions and provide opportunities for expansion or reintroduction of native species.	Bio 1.4.2	Assess Threats/Benefits and Set Priorities.	a) Prioritize areas to be restored, e.g., HIGH = areas that should be restored immediately, MEDIUM = areas to be restored within the next 3 years, and LOW = areas to be monitored and restored when time, budget, and staffing allow.	RE	Annual		2	8						
63	Bio 1: Habitat	Bio 1.4	Upland Habitat Restoration.	Restore and enhance lost functions and provide opportunities for expansion or reintroduction of native species.	Bio 1.4.2	Assess Threats/Benefits and Set Priorities.	b) Consider benefits to sensitive species known to occur within HCWA and the adjacent RJER.	MN	Annual	4	4	4						
64	Bio 1: Habitat	Bio 1.4	Upland Habitat Restoration.	Restore and enhance lost functions and provide opportunities for expansion or reintroduction of native species.	Bio 1.4.2	Assess Threats/Benefits and Set Priorities.	c) Restore degraded upland areas to provide increased nesting, breeding, and foraging habitat for special status species and other wildlife.	RE	One-time	2	2	16	80	40	40	40		80
65	Bio 1: Habitat	Bio 1.4	Upland Habitat Restoration.	Restore and enhance lost functions and provide opportunities for expansion or reintroduction of native species.	Bio 1.4.2	Assess Threats/Benefits and Set Priorities.	d) Quantify suitable degraded areas, then restore to provide increased habitat for game species.	SP	One-time	2	2	40	40	40	40	40		80
66	Bio 1: Habitat	Bio 1.4	Upland Habitat Restoration.	Restore and enhance lost functions and provide opportunities for expansion or reintroduction of native species.	Bio 1.4.3	Management.	a) Develop area-specific restoration plans including planting design and specifications, goals, and costs (refer to Bio 1.2.3)	D	As-needed	4	4	40						
67	Bio 1: Habitat	Bio 1.4	Upland Habitat Restoration.	Restore and enhance lost functions and provide opportunities for expansion or reintroduction of native species.	Bio 1.4.3	Management.	b) Pursue appropriate permits for restoration projects for habitats that are occupied by state and federally listed species (e.g., Quino checkerspot butterfly and San Diego thornmint).	D	As-needed		24							
68	Bio 1: Habitat	Bio 1.4	Upland Habitat Restoration.	Restore and enhance lost functions and provide opportunities for expansion or reintroduction of native species.	Bio 1.4.3	Management.	c) Incorporate experimental design for restoring highly disturbed non-native grasslands (i.e., test most effective method for removal of thatch and new non-native vegetative growth. Use exclusionary fencing, if managed grazing is used, to contain grazers, but allow wildlife access.	RE	As-needed									
69	Bio 1: Habitat	Bio 1.4	Upland Habitat Restoration.	Restore and enhance lost functions and provide opportunities for expansion or reintroduction of native species.	Bio 1.4.3	Management.	d) Remove invasive plant species from the coastal sage scrub/clay lens habitat and restore treated areas with appropriate native species using stock collected from within HCWA.	RE	One-time			8				8		16
70	Bio 1: Habitat	Bio 1.4	Upland Habitat Restoration.	Restore and enhance lost functions and provide opportunities for expansion or reintroduction of native species.	Bio 1.4.3	Management.	e) Limit access, as appropriate, by fencing off restored areas to protect them from impacts due to unauthorized public use.	RE	One-time				24		24			

Appendix F Operations and Maintenance Requirements to Implement the HCWA LMP

Item No.	Element	Code	GOAL		Code	Task	Subtasks / Action Items	Management Type*	Schedule	Sr. Biology Super. (Wildlife)	Assoc. Biologist	Wildlife Biologist	Wildlife Habitat Super. I	Wildlife Habitat Assist.	Tractor Oper. Laborer	Fish & Wildlife Tech.	Fish & Wildlife Interpret / II	Scientific/Seasonal Aid
			Subject	Statement														
71	Bio 1: Habitat	Bio 1.4	Upland Habitat Restoration.	Restore and enhance lost functions and provide opportunities for expansion or reintroduction of native species.	Bio 1.4.3	Management.	f) Pursue funding for identified restoration projects.	D	As-needed	2	16							
72	Bio 1: Habitat	Bio 1.4	Upland Habitat Restoration.	Restore and enhance lost functions and provide opportunities for expansion or reintroduction of native species.	Bio 1.4.3	Management.	g) Conduct post-restoration monitoring and additional remediation, where needed.	MO	As-needed			8						16
73	Bio 1: Habitat	Bio 1.4	Upland Habitat Restoration.	Restore and enhance lost functions and provide opportunities for expansion or reintroduction of native species.	Bio 1.4.3	Management.	h) Adaptive management. Use monitoring data to assess progress of the restored area [refer to Bio 1.1.3 (j) for details.	MO	Annual			4	4					
74																		
75	Bio 2: Special Status Species	Bio 2.1	Protect and Enhance Listed Species.	Protect, monitor, and enhance populations and preferred habitat of listed species.	Bio 2.1.1	Surveys and Ongoing Monitoring. Qualified biologists to conduct focused species surveys for federal and state listed species.	a) Conduct qualitative surveys for San Diego thornmint annually to detect immediate threats to known populations and generally assess condition of the population.	MO	Annual		15	15						
76	Bio 2: Special Status Species	Bio 2.1	Protect and Enhance Listed Species.	Protect, monitor, and enhance populations and preferred habitat of listed species.	Bio 2.1.1	Surveys and Ongoing Monitoring. Qualified biologists to conduct focused species surveys for federal and state listed species.	a) (Cont.) Conduct qualitative surveys for Quino (QCB) annually to detect immediate threats to known populations and generally assess condition of the population.	MO	Annual		15	15						
77	Bio 2: Special Status Species	Bio 2.1	Protect and Enhance Listed Species.	Protect, monitor, and enhance populations and preferred habitat of listed species.	Bio 2.1.1	Surveys and Ongoing Monitoring. Qualified biologists to conduct focused species surveys for federal and state listed species.	a) (Cont.) Conduct qualitative surveys for California gnatcatcher annually to detect immediate threats to known populations and generally assess condition of the population.	MO	Annual		15	15						
78	Bio 2: Special Status Species	Bio 2.1	Protect and Enhance Listed Species.	Protect, monitor, and enhance populations and preferred habitat of listed species.	Bio 2.1.1	Surveys and Ongoing Monitoring. Qualified biologists to conduct focused species surveys for federal and state listed species.	b) Conduct focused surveys for San Diego thornmint every 3-5 years to document species population health, count, and extent, and allow for timely remediation efforts, as needed.	MO	3-5 years		5	27						55
79	Bio 2: Special Status Species	Bio 2.1	Protect and Enhance Listed Species.	Protect, monitor, and enhance populations and preferred habitat of listed species.	Bio 2.1.1	Surveys and Ongoing Monitoring. Qualified biologists to conduct focused species surveys for federal and state listed species.	b) (Cont.) Conduct protocol-level surveys for QCB every 3-5 years to document species population health, count, and extent, and allow for timely remediation efforts, as needed.	MO	3-5 years		5	27						55
80	Bio 2: Special Status Species	Bio 2.1	Protect and Enhance Listed Species.	Protect, monitor, and enhance populations and preferred habitat of listed species.	Bio 2.1.1	Surveys and Ongoing Monitoring. Qualified biologists to conduct focused species surveys for federal and state listed species.	b) (Cont.) Conduct protocol-level surveys for California gnatcatcher every 3-5 years to document species population health, count, and extent, and allow for timely remediation efforts, as needed.	MO	3-5 years		5	27						55
81	Bio 2: Special Status Species	Bio 2.1	Protect and Enhance Listed Species.	Protect, monitor, and enhance populations and preferred habitat of listed species.	Bio 2.1.1	Surveys and Ongoing Monitoring. Qualified biologists to conduct focused species surveys for federal and state listed species.	c) Areas of suitable habitat, not currently known to support listed species, should be surveyed to detect new populations of listed species within the property.	MO	3-5 years		16	40						80
82	Bio 2: Special Status Species	Bio 2.1	Protect and Enhance Listed Species.	Protect, monitor, and enhance populations and preferred habitat of listed species.	Bio 2.1.2	Assess Threats and Set Priorities. Identify threats to listed species. Refer to Bio 2.2.2.		MO	Annual	4	4	4						
83	Bio 2: Special Status Species	Bio 2.1	Protect and Enhance Listed Species.	Protect, monitor, and enhance populations and preferred habitat of listed species.	Bio 2.1.3	Management. Conduct general and species-specific management activities as needed.	a) Restore and enhance native habitat preferred by rare, threatened, or endangered species known from or with the potential to occur at HCWA. Refer to Bio 1.2 and 1.4.	SP	As-needed	2	2	16	40	40	40	40		80

Appendix F Operations and Maintenance Requirements to Implement the HCWA LMP

Item No.	Element	Code	GOAL		Code	Task	Subtasks / Action Items	Management Type*	Schedule	Sr. Biology Super. (Wildlife)	Assoc. Biologist	Wildlife Biologist	Wildlife Habitat Super. I	Wildlife Habitat Assist.	Tractor Oper. Laborer	Fish & Wildlife Tech.	Fish & Wildlife Interpret / II	Scientific/Seasonal Aid	
			Subject	Statement															
84	Bio 2: Special Status Species	Bio 2.1	Protect and Enhance Listed Species.	Protect, monitor, and enhance populations and preferred habitat of listed species.	Bio 2.1.3	Management. Conduct general and species-specific management activities as needed.	b) Implement management measures for San Diego thornmint. Surveys in 2005 noted that the population had been impacted by illegal off-road activity. – Manage the invasive plant species within this area to minimize the decline of San Diego thornmint.	RE	As-needed		2	32							32
85	Bio 2: Special Status Species	Bio 2.1	Protect and Enhance Listed Species.	Protect, monitor, and enhance populations and preferred habitat of listed species.	Bio 2.1.3	Management. Conduct general and species-specific management activities as needed.	b) (Cont.) Install split-rail fencing along the access road to restrict illegal encroachment into the thornmint population. Extend the fencing from the access gate, down past the southerly clay lens area.	MN	One-time			8		8	8	8			16
86	Bio 2: Special Status Species	Bio 2.1	Protect and Enhance Listed Species.	Protect, monitor, and enhance populations and preferred habitat of listed species.	Bio 2.1.3	Management. Conduct general and species-specific management activities as needed.	b) (Cont.) Install signage along the fencing, as appropriate.	MN	One-time										2
87	Bio 2: Special Status Species	Bio 2.1	Protect and Enhance Listed Species.	Protect, monitor, and enhance populations and preferred habitat of listed species.	Bio 2.1.3	Management. Conduct general and species-specific management activities as needed.	b) (Cont.) Install permanent markers to document the outer boundary of the thornmint population. These markers will facilitate surveys by biologists and enhancement and restoration activities. The location of the markers should be recorded with GPS equipment.	MN	One-time			8							8
88	Bio 2: Special Status Species	Bio 2.1	Protect and Enhance Listed Species.	Protect, monitor, and enhance populations and preferred habitat of listed species.	Bio 2.1.3	Management. Conduct general and species-specific management activities as needed.	b) (Cont.) Enhance the population. Remove thatch around the thornmint to stabilize the population. Collect native seed prior to dethatching and redistribute seed following dethatching. Conduct dethatching every 3 to 5 years until desired condition is met.	RE	3-5 years			8							16
89	Bio 2: Special Status Species	Bio 2.1	Protect and Enhance Listed Species.	Protect, monitor, and enhance populations and preferred habitat of listed species.	Bio 2.1.3	Management. Conduct general and species-specific management activities as needed.	b) (Cont.) Collect San Diego thornmint seed for distribution to fill in the gaps within the existing populations. Store seed at an appropriate facility for redistribution in the fall prior to the next wet season.	RE	As-needed		2	8							8
90	Bio 2: Special Status Species	Bio 2.1	Protect and Enhance Listed Species.	Protect, monitor, and enhance populations and preferred habitat of listed species.	Bio 2.1.3	Management. Conduct general and species-specific management activities as needed.	b) (Cont.) As needed, restore the population. If thornmint populations continue to decline despite dethatching, additional weed control measures (herbicide use or mowing conducted by a qualified crew) should be considered.	RE	As-needed										16
91	Bio 2: Special Status Species	Bio 2.1	Protect and Enhance Listed Species.	Protect, monitor, and enhance populations and preferred habitat of listed species.	Bio 2.1.3	Management. Conduct general and species-specific management activities as needed.	b) (Cont.) Conduct seed collection and greenhouse propagation if the populations of thornmint continue to decline despite population enhancement and restoration activities.	SP	As-needed	2	24	40	40						
92	Bio 2: Special Status Species	Bio 2.1	Protect and Enhance Listed Species.	Protect, monitor, and enhance populations and preferred habitat of listed species.	Bio 2.1.3	Management. Conduct general and species-specific management activities as needed.	c) Implement management measures for QCB. E.g., Restore/expand QCB habitat by planting appropriate areas with larval host species. Candidate locations include portions of the coastal sage scrub/clay lens habitat where host plants are lacking or uncommon, or appropriate openings within neighboring upland scrublands and native grasslands.	SP	One-time							40			80

Appendix F Operations and Maintenance Requirements to Implement the HCWA LMP

Item No.	Element	Code	GOAL		Code	Task	Subtasks / Action Items	Management Type*	Schedule	Sr. Biology Super. (Wildlife)	Assoc. Biologist	Wildlife Biologist	Wildlife Habitat Super. I	Wildlife Habitat Assist.	Tractor Oper. Laborer	Fish & Wildlife Tech.	Fish & Wildlife Interpret / II	Scientific/Seasonal Aid
			Subject	Statement														
93	Bio 2: Special Status Species	Bio 2.1	Protect and Enhance Listed Species.	Protect, monitor, and enhance populations and preferred habitat of listed species.	Bio 2.1.3	Management. Conduct general and species-specific management activities as needed.	c) (Cont.) Control the fire frequency through QCB-occupied habitat via an effective fire management program. Refer to Fire 1.0.	MN	As-needed		8							
94	Bio 2: Special Status Species	Bio 2.1	Protect and Enhance Listed Species.	Protect, monitor, and enhance populations and preferred habitat of listed species.	Bio 2.1.3	Management. Conduct general and species-specific management activities as needed.	c) (Cont.) Evaluate success of the experimental restoration program in Johnson Canyon east of SR 125 and incorporate successful management strategies into QCB enhancement and restoration effort at HCWA.	MN	One-time		2	2						
95	Bio 2: Special Status Species	Bio 2.1	Protect and Enhance Listed Species.	Protect, monitor, and enhance populations and preferred habitat of listed species.	Bio 2.1.3	Management. Conduct general and species-specific management activities as needed.	d) Implement management measures for coastal California gnatcatcher. – Restore areas of disturbed and/or type-converted coastal sage scrub to regain appropriate habitat structure.	SP	One-time		2	80	160	320		320		640
96	Bio 2: Special Status Species	Bio 2.1	Protect and Enhance Listed Species.	Protect, monitor, and enhance populations and preferred habitat of listed species.	Bio 2.1.3	Management. Conduct general and species-specific management activities as needed.	d) (Cont.) Control fire frequency within native scrub habitats through an effective fire management program (see Fire Management Element).	MN	As-needed		8	16			40			
97	Bio 2: Special Status Species	Bio 2.1	Protect and Enhance Listed Species.	Protect, monitor, and enhance populations and preferred habitat of listed species.	Bio 2.1.3	Management. Conduct general and species-specific management activities as needed.	d) (Cont.) Conduct regular cowbird trapping as necessary to protect gnatcatcher nestlings from this brood parasite. Refer to Bio 3.2.3.	MO	As-needed		2	40						80
98	Bio 2: Special Status Species	Bio 2.1	Protect and Enhance Listed Species.	Protect, monitor, and enhance populations and preferred habitat of listed species.	Bio 2.1.3	Management. Conduct general and species-specific management activities as needed.	d) (Cont.) Control indirect effects of noise within gnatcatcher habitat by keeping noise levels at or below 60 dBA during the breeding season.	MN	On-going		2							
99	Bio 2: Special Status Species	Bio 2.1	Protect and Enhance Listed Species.	Protect, monitor, and enhance populations and preferred habitat of listed species.	Bio 2.1.3	Management. Conduct general and species-specific management activities as needed.	d) (Cont.) Control indirect effects of night lighting within gnatcatcher habitat by shielding lighting from neighboring properties as feasible.	MN	As-needed		2							
100	Bio 2: Special Status Species	Bio 2.1	Protect and Enhance Listed Species.	Protect, monitor, and enhance populations and preferred habitat of listed species.	Bio 2.1.3	Management. Conduct general and species-specific management activities as needed.	d) (Cont.) Avoid flushing young or adults from their nest by restricting public recreational and educational activities during the breeding season as necessary.	MN	As-needed		2							
101	Bio 2: Special Status Species	Bio 2.1	Protect and Enhance Listed Species.	Protect, monitor, and enhance populations and preferred habitat of listed species.	Bio 2.1.3	Management. Conduct general and species-specific management activities as needed.	e) Determine type and level of management within 6 months of the detection new populations of listed species within HCWA.	MN	As-needed		2	4						
102	Bio 2: Special Status Species	Bio 2.1	Protect and Enhance Listed Species.	Protect, monitor, and enhance populations and preferred habitat of listed species.	Bio 2.1.3	Management. Conduct general and species-specific management activities as needed.	f) Adaptive management: use monitoring results to reevaluate priorities and management activities. Refer to Bio 1.1.3 (j) for details.	MO	Annual		8	8	8					
103																		
104	Non-listed Sensitive Species	Bio 2.2	Protect and Enhance Non-listed Sensitive Species.	Protect, monitor, and enhance populations of non-listed sensitive species.	Bio 2.2.1	Surveys and Ongoing Monitoring. Generally assess the condition of known populations and document population count and area occupied.	a) Conduct surveys for sensitive plants and animals every 3-5 years at the appropriate time of year (e.g., the appropriate blooming period for each species of plant, and breeding season for migratory birds).	MO	3-5 years		2	24						48
105	Non-listed Sensitive Species	Bio 2.2	Protect and Enhance Non-listed Sensitive Species.	Protect, monitor, and enhance populations of non-listed sensitive species.	Bio 2.2.1	Surveys and Ongoing Monitoring. Generally assess the condition of known populations and document population count and area occupied.	b) Priority should be given to California Species of Concern and MSCP covered species.	MO	As-needed		2	2						

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Item No.	Element	Code	GOAL		Code	Task	Subtasks / Action Items	Management Type*	Schedule	Sr. Biology Super. (Wildlife)	Assoc. Biologist	Wildlife Biologist	Wildlife Habitat Super. I	Wildlife Habitat Assist.	Tractor Oper. Laborer	Fish & Wildlife Tech.	Fish & Wildlife Interpret / II	Scientific/Seasonal Aid
			Subject	Statement														
106	Non-listed Sensitive Species	Bio 2.2	Protect and Enhance Non-listed Sensitive Species.	Protect, monitor, and enhance populations of non-listed sensitive species.	Bio 2.2.1	Surveys and Ongoing Monitoring. Generally assess the condition of known populations and document population count and area occupied.	c) Coordinate wildlife movement monitoring/studies within and beyond HCWA with those conducted on neighboring conserved lands.	MO/LK	As-needed			80						
107	Non-listed Sensitive Species	Bio 2.2	Protect and Enhance Non-listed Sensitive Species.	Protect, monitor, and enhance populations of non-listed sensitive species.	Bio 2.2.2	Assess Threats and Set Priorities. Identify threats to sensitive species. Focus on habitat-specific assemblages, i.e., grassland species.	a) Prioritize areas for species management, e.g., HIGH = species or assemblage in imminent danger where action must be taken as soon as possible; MEDIUM = action should be taken within the next 3 years; and LOW = species that should be monitored to ensure the threat does not worsen, with management action conducted when time, budget, and staffing allow. Incorporate these priorities into annual work plan for wetland and upland habitats, as outlined in Bio 1.1.3 and 1.3.3.	MO	Annual	16	16	16						
108	Non-listed Sensitive Species	Bio 2.2	Protect and Enhance Non-listed Sensitive Species.	Protect, monitor, and enhance populations of non-listed sensitive species.	Bio 2.2.3	Management. Implement the following management activities to protect sensitive biological resources:	a) Remove non-native predators that may threaten sensitive wildlife species.	RE	As-needed			40						80
109	Non-listed Sensitive Species	Bio 2.2	Protect and Enhance Non-listed Sensitive Species.	Protect, monitor, and enhance populations of non-listed sensitive species.	Bio 2.2.3	Management. Implement the following management activities to protect sensitive biological resources:	b) Add structures such as bluebird nest boxes or bat houses as necessary to provide nesting or roosting opportunities for sensitive species.	SP	One-time			24	16		16			24
110	Non-listed Sensitive Species	Bio 2.2	Protect and Enhance Non-listed Sensitive Species.	Protect, monitor, and enhance populations of non-listed sensitive species.	Bio 2.2.3	Management. Implement the following management activities to protect sensitive biological resources:	c) Evaluate all future management programs for potential impacts to sensitive species and take appropriate steps to mitigate these impacts.	MO	As-needed	2	40	40						
111	Non-listed Sensitive Species	Bio 2.2	Protect and Enhance Non-listed Sensitive Species.	Protect, monitor, and enhance populations of non-listed sensitive species.	Bio 2.2.3	Management. Implement the following management activities to protect sensitive biological resources:	d) Adaptive management. Use monitoring results to reevaluate priorities and management activities. Refer to Bio 1.1.3 (j).	MO	Annual		8	40						
112																		
113	3. Bio 3: Managed Species	Bio 3.1	Non-native Plants.	Control invasive, non-native plant species that may negatively impact native species and habitats.	Bio 3.1.1	Surveys and Ongoing Monitoring. Conduct surveys for invasive, non-native plant species and monitor populations. Focus on invasive, non-native plants that occur among sensitive plant species, or within 500 feet of sensitive plant populations.	a) Conduct qualitative surveys annually to detect immediate threats from invasive species to known populations of listed species within HCWA.	MO	Annual									48
114	3. Bio 3: Managed Species	Bio 3.1	Non-native Plants.	Control invasive, non-native plant species that may negatively impact native species and habitats.	Bio 3.1.1	Surveys and Ongoing Monitoring. Conduct surveys for invasive, non-native plant species and monitor populations. Focus on invasive, non-native plants that occur among sensitive plant species, or within 500 feet of sensitive plant populations.	b) Conduct quantitative surveys (e.g., species density and mapping) every 3-5 years to document the condition of invasive species populations within and surrounding (500 feet) target sensitive species.	MO	3-5 years									64

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Item No.	Element	Code	GOAL		Code	Task	Subtasks / Action Items	Management Type*	Schedule	Sr. Biology Super. (Wildlife)	Assoc. Biologist	Wildlife Biologist	Wildlife Habitat Super. I	Wildlife Habitat Assist.	Tractor Oper. Laborer	Fish & Wildlife Tech.	Fish & Wildlife Interpret / II	Scientific/Seasonal Aid
			Subject	Statement														
115	3. Bio 3: Managed Species	Bio 3.1	Non-native Plants.	Control invasive, non-native plant species that may negatively impact native species and habitats.	Bio 3.1.2	Assess Threats and Set Priorities. Identify threat for invasive plant species population expansion.	Prioritize areas for invasive plant species management, e.g., HIGH = action must be taken as soon as possible, MEDIUM = action should be taken within the next 3 years, and LOW = action to be taken when time, budget, and staffing allow. Incorporate these priorities into annual work plan for wetland and upland habitats, as outlined in Bio 1.1.3 and 1.3.3.	MN/D	As-needed									
116	3. Bio 3: Managed Species	Bio 3.1	Non-native Plants.	Control invasive, non-native plant species that may negatively impact native species and habitats.	Bio 3.1.2	Assess Threats and Set Priorities.	a) Control/eliminate occurrences of invasive, non-native plants among or near (within 500 feet of) highly sensitive plant species.	RE	Annual		2	4						
117	3. Bio 3: Managed Species	Bio 3.1	Non-native Plants.	Control invasive, non-native plant species that may negatively impact native species and habitats.	Bio 3.1.2	Assess Threats and Set Priorities.	b) Eliminate new occurrences (i.e., previously unknown and/or currently small populations) of highly invasive plant species anywhere within HCWA.	RE	Annual			4						16
118	3. Bio 3: Managed Species	Bio 3.1	Non-native Plants.	Control invasive, non-native plant species that may negatively impact native species and habitats.	Bio 3.1.2	Assess Threats and Set Priorities.	c) Control/eliminate species designated as "high" by Cal IPC.	RE	Annual			4						16
119	3. Bio 3: Managed Species	Bio 3.1	Non-native Plants.	Control invasive, non-native plant species that may negatively impact native species and habitats.	Bio 3.1.3	Management. Control/eliminate populations of invasive, non-native plant species.	a) Identify acreage for restoration, then eliminate populations of eucalyptus that dominate the central segment of Jamul Creek and near the old Honey Springs Ranch.	SP	one-time		4	40		80				160
120	3. Bio 3: Managed Species	Bio 3.1	Non-native Plants.	Control for invasive, non-native plant species that may negatively impact native species and habitats within the wildlife area.	Bio 3.1.3	Management. Control/eliminate populations of invasive, non-native plant species.	b) Identify acreage for restoration, then eliminate the non-native grasses (including foxtail chess) that threaten the San Diego thornmint and QCB populations (among and within a 500-foot buffer) in the north-central portion of the property.	SP	As-needed		2	40				40		80
121	3. Bio 3: Managed Species	Bio 3.1	Non-native Plants.	Control invasive, non-native plant species that may negatively impact native species and habitats.	Bio 3.1.3	Management. Control/eliminate populations of invasive, non-native plant species.	c) Management activities should be consistent with those currently being conducted by the Department within reserved lands.	MN	On-going		2							
122	3. Bio 3: Managed Species	Bio 3.1	Non-native Plants.	Control invasive, non-native plant species that may negatively impact native species and habitats.	Bio 3.1.3	Management. Control/eliminate populations of invasive, non-native plant species.	d) Coordinate efforts and/or compare results with invasive plant species control programs being done elsewhere in the county (e.g., regional "weed teams").	MN	Annual		4	8						
123	3. Bio 3: Managed Species	Bio 3.1	Non-native Plants.	Control invasive, non-native plant species that may negatively impact native species and habitats.	Bio 3.1.3	Management. Control/eliminate populations of invasive, non-native plant species.	e) Adaptive management. Use monitoring results to determine the effectiveness of non-native species control methods and protection of sensitive species; adapt management strategies as necessary. Refer to Bio 1.1.3 (j) for additional details.	MO	Annual		4	4						
124	3. Bio 3: Managed Species	Bio 3.2	Non-native Wildlife Species.	Control non-native, predatory animal species that may negatively impact native species.	Bio 3.2.1	Surveys and Ongoing Monitoring.	Conduct qualitative surveys annually to detect immediate threats from non-native wildlife species to known populations of listed species within HCWA.	MO	Annual									

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Item No.	Element	Code	GOAL		Code	Task	Subtasks / Action Items	Management Type*	Schedule	Sr. Biology Super. (Wildlife)	Assoc. Biologist	Wildlife Biologist	Wildlife Habitat Super. I	Wildlife Habitat Assist.	Tractor Oper. Laborer	Fish & Wildlife Tech.	Fish & Wildlife Interpret / II	Scientific/Seasonal Aid
			Subject	Statement														
125	3. Bio 3: Managed Species	Bio 3.2	Non-native Wildlife Species.	Control non-native, predatory animal species that may negatively impact native species.	Bio 3.2.2	Assess Threats and Set Priorities. Identify threat for non-native wildlife species population expansion.	Prioritize areas for non-native wildlife species management. e.g., HIGH = action must be taken as soon as possible, MEDIUM = action should be taken within the next 3 years, and LOW = action to be taken when time, budget, and staffing allow. Incorporate these priorities into annual work plan for wetland and upland habitats, as outlined in Bio 1.1.3 and 1.3.3.	MN/D	As-needed									
126	3. Bio 3: Managed Species	Bio 3.2	Non-native Wildlife Species.	Control non-native, predatory animal species that may negatively impact native species.	Bio 3.2.2	Assess Threats and Set Priorities.	a) Control/eliminate aquatic predators (e.g., crayfish and mosquito fish).	RE	Annual		2	16						
127	3. Bio 3: Managed Species	Bio 3.2	Non-native Wildlife Species.	Control non-native, predatory animal species that may negatively impact native species.	Bio 3.2.2	Assess Threats and Set Priorities.	b) Control domestic pets.	MO	Annual		2	2						
128	3. Bio 3: Managed Species	Bio 3.2	Non-native Wildlife Species.	Control non-native, predatory animal species that may negatively impact native species.	Bio 3.2.2	Assess Threats and Set Priorities.	c) Control/eliminate naturalized parasitic or non-native birds such as starlings, house sparrows, and cowbirds.	MO	Annual		2	4						
129	3. Bio 3: Managed Species	Bio 3.2	Non-native Wildlife Species.	Control non-native, predatory animal species that may negatively impact native species.	Bio 3.2.3	Management. Control/eliminate populations of non-native wildlife species, or naturalized parasitic species that cause harm.	a) Monitor cowbird populations and establish trapping stations where cowbirds are found to be a problem.	MO	As-needed			16						32
130	3. Bio 3: Managed Species	Bio 3.2	Non-native Wildlife Species.	Control non-native, predatory animal species that may negatively impact native species.	Bio 3.2.3	Management. Control/eliminate populations of non-native wildlife species, or naturalized parasitic species that cause harm.	b) Monitor populations of the European starling and house sparrow and install nest boxes for bluebirds, woodpeckers, and other cavity nesters as needed.	MO/SP	As-needed			16						32
131	3. Bio 3: Managed Species	Bio 3.2	Non-native Wildlife Species.	Control non-native, predatory animal species that may negatively impact native species.	Bio 3.2.3	Management. Control/eliminate populations of non-native wildlife species, or naturalized parasitic species that cause harm.	c) Educate the surrounding communities about the threats to native wildlife caused by release of non-native species into the wild.	MN	On-going								320	
132	3. Bio 3: Managed Species	Bio 3.2	Non-native Wildlife Species.	Control non-native, predatory animal species that may negatively impact native species.	Bio 3.2.3	Management. Control/eliminate populations of non-native wildlife species, or naturalized parasitic species that cause harm.	d) Adaptive management. Use monitoring results to determine the effectiveness of non-native species control methods and protection of native fauna. Adapt management strategy as necessary. Refer to Bio 1.1.3 (j) for additional details.	MO	Annual		4	40						
133																		
134	Bio 4: Game Species	Bio 4.0	Manage Game Populations.	Manage game species/habitat to provide hunting for the public, while protecting sensitive biological resources.	Bio 4.1	Surveys and Ongoing Monitoring	a) Conduct annual dove and quail counts to assess population condition and obtain trend data.	MO	Annual		2	80						160
135	Bio 4: Game Species	Bio 4.0	Manage Game Populations.	Manage game species/habitat to provide hunting for the public, while protecting sensitive biological resources.	Bio 4.1	Surveys and Ongoing Monitoring	b) Conduct surveys every 3-5 years on resident and small game species throughout HCWA.	MO	3-5 years		2	80						160
136	Bio 4: Game Species	Bio 4.0	Manage Game Populations.	Manage game species/habitat to provide hunting for the public, while protecting sensitive biological resources.	Bio 4.1	Surveys and Ongoing Monitoring	c) Conduct harvest surveys to track numbers, species, and locations of take.	MO	Annual			4			40			80

Appendix F Operations and Maintenance Requirements to Implement the HCWA LMP

Item No.	Element	Code	GOAL		Code	Task	Subtasks / Action Items	Management Type*	Schedule	Sr. Biology Super. (Wildlife)	Assoc. Biologist	Wildlife Biologist	Wildlife Habitat Super. I	Wildlife Habitat Assist.	Tractor Oper. Laborer	Fish & Wildlife Tech.	Fish & Wildlife Interpret / II	Scientific/Seasonal Aid	
			Subject	Statement															
137	Bio 4: Game Species	Bio 4.0	Manage Game Populations.	Manage game species/habitat to provide hunting for the public, while protecting sensitive biological resources.	Bio 4.2	Management.	a) Manage the wildlife area to maintain conditions suitable for game species. — Monitor the planted field where cereal wheat is sown annually to attract doves to determine if cereal crops are invading adjacent native habitats.	MO	Annual			8							
138	Bio 4: Game Species	Bio 4.0	Manage Game Populations.	Manage game species/habitat to provide hunting for the public, while protecting sensitive biological resources.	Bio 4.2	Management.	a) (Cont.) Rotate hunting areas or periodically close areas if heavy use is adversely affecting the habitat that game species prefer.	MN	As-needed		4	4							
139	Bio 4: Game Species	Bio 4.0	Manage Game Populations.	Manage game species/habitat to provide hunting for the public, while protecting sensitive biological resources.	Bio 4.2	Management.	a) (Cont.) Consider providing closed zones as a refugia if needed.	MN	As-needed										
140	Bio 4: Game Species	Bio 4.0	Manage Game Populations.	Manage game species/habitat to provide hunting for the public, while protecting sensitive biological resources.	Bio 4.2	Management.	b) Manage for all aspects of game species' needs; food, water, cover and breeding habitat.	MN	Annual	4	4	4							
141	Bio 4: Game Species	Bio 4.0	Manage Game Populations.	Manage game species/habitat to provide hunting for the public, while protecting sensitive biological resources.	Bio 4.3	Enhancement	a) Assess current food plots for success. Evaluate other potential areas for manipulation or native/passive feeding centers. Continue planting as resources allow and benefit is derived.	MO	Annual	2	2	8							16
142	Bio 4: Game Species	Bio 4.0	Manage Game Populations.	Manage game species/habitat to provide hunting for the public, while protecting sensitive biological resources.	Bio 4.3	Enhancement	b) Assess current water sources. Evaluate other potential areas where water sources can be developed or artificially enhanced.	MO	Annual				8						48
143	Bio 4: Game Species	Bio 4.0	Manage Game Populations.	Manage game species/habitat to provide hunting for the public, while protecting sensitive biological resources.	Bio 4.3	Enhancement	c) Incorporate brush piles or vegetation design that will provide cover for quail and small game.	MO	As-needed										
144	Bio 4: Game Species	Bio 4.0	Manage Game Populations.	Manage game species/habitat to provide hunting for the public, while protecting sensitive biological resources.	Bio 4.3	Enhancement	d) Construct and install dove cones where appropriate.	MO	As-needed				16	16	16	16			
145	Bio 4: Game Species	Bio 4.0	Manage Game Populations.	Manage game species/habitat to provide hunting for the public, while protecting sensitive biological resources.	Bio 4.3	Enhancement	e) Evaluate success of habitat improvement projects and modify as necessary to achieve desired results.	MO	Annual										
146											4	4							
147	Public Use	Pub 1.0	Public Access.	Provide compatible wildlife-dependent opportunities for public access.	Pub 1.1	Maintain access routes to existing parking lots.		MA	Annual				8		24				40
148	Public Use	Pub 1.0	Public Access.	Provide compatible wildlife-dependent opportunities for public access.	Pub 1.2	Assess the eastern end for an additional parking lot near the Honey Springs Ranch		MN	One-time	2	2	4							
149	Public Use	Pub 1.0	Public Access.	Provide compatible wildlife-dependent opportunities for public access.	Pub 1.3	Improve official trail system by regular maintenance and improved signage.		MA	On-going				8	16		16			
150	Public Use	Pub 1.0	Public Access.	Provide compatible wildlife-dependent opportunities for public access.	Pub 1.4	Clearly mark closed trails and provide barriers to preclude access by the public.		MN	One-time				8			16			32

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			Subject	Statement															
151	Public Use	Pub 1.0	Public Access.	Provide compatible wildlife-dependent opportunities for public access.	Pub 1.5	Evaluate use levels and visitor satisfaction periodically by using visitor surveys.		MO	As-needed		2								24
152	Public Use	Pub 1.0	Public Access.	Provide compatible wildlife-dependent opportunities for public access.	Pub 1.6	Close HCWA for bicycles and horses for up to 3 days after rain events to prevent damage to trails.		MN	As-needed		2								24
153	Public Use	Pub 1.0	Public Access.	Provide compatible wildlife-dependent opportunities for public access.	Pub 1.7	Improve trails for American with Disabilities Act (ADA) access.		RE	One-time		2	16	16	16	16	16			
154	Public Use	Pub 1.0	Public Access.	Provide compatible wildlife-dependent opportunities for public access.	Pub 1.8	Close HCWA to the public during and following fire and severe weather events.		MN	As-needed		2								16
155	Public Use	Pub 1.0	Public Access.	Provide compatible wildlife-dependent opportunities for public access.	Pub 1.9	Maintain a clear line of sight at the vehicle entrance to HCWA by trimming and maintaining vegetation.		MA	As-needed		2	8							8
156	Public Use	Pub 1.0	Public Access.	Provide compatible wildlife-dependent opportunities for public access.	Pub 1.10	Conduct quantitative user surveys every 3-5 years and estimate capacity. Document habitat condition in relationship to use capacity. Remove, reduce, or limit uses if resource damage is occurring.		MO	3-5 years				16						
157	Public Use	Pub 1.0	Public Access.	Provide compatible wildlife-dependent opportunities for public access.	Pub 1.11	Increase enforcement and create additional educational materials to prohibit unauthorized activities. Use revegetation to control erosion and repair damaged areas.		MN/RE	As-needed	2	8	40	40	40	40	40			80
158	Public Use	Pub 1.0	Public Access.	Provide compatible wildlife-dependent opportunities for public access.	Pub 1.12	Remediate damage from unauthorized activities.		RE	As-needed		8	24	24		24	24			48
159	Public Use	Pub 2.0	Public Safety.	Minimize user conflicts and facilitate public use compatibility.	Pub 2.1	Encourage user safety through monitoring and enforcement of regulations.		MO	On-going		8								
160	Public Use	Pub 2.0	Public Safety.	Minimize user conflicts and facilitate public use compatibility.	Pub 2.2	Inform public of use designations/restrictions through outreach, signage, physical barriers, and the Department's website.		OU	On-going	16	40	16						320	80
161	Public Use	Pub 2.0	Public Safety.	Minimize user conflicts and facilitate public use compatibility.	Pub 2.3	Identify potential conflicts between recreational uses and resolve such conflicts.		MN	On-going	8	8	8	8	8					
162	Public Use	Pub 2.0	Public Safety.	Minimize user conflicts and facilitate public use compatibility.	Pub 2.4	Pursue special funding and/or volunteers to have staff available on-site during high use times to monitor activities and provide information to visitors.		SP	As-needed										500
163	Public Use	Pub 2.0	Public Safety.	Minimize user conflicts and facilitate public use compatibility.	Pub 2.5	Provide Department contact name, phone number, and e-mail address on signage for questions/comments regarding uses at HCWA.		MN	One-time		8								

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			Subject	Statement														
164	Public Use	Pub 2.0	Public Safety.	Minimize user conflicts and facilitate public use compatibility.	Pub 2.6	Conduct periodic reviews of public uses; evaluate rules, regulations, guidelines, and materials to ensure they are wildlife-dependent and compatible with goals for the area.		MN	As-needed	8	24							
165	Public Use	Pub 3.0	Hunting.	Provide safe, compatible hunting opportunities to the public.	Pub 3.1	Continue current hunting program in specified areas.		MN	On-going	4	24							
166	Public Use	Pub 3.0	Hunting.	Provide safe, compatible hunting opportunities to the public.	Pub 3.2	As habitat/access are improved, evaluate expansion of current hunting program.		MO	As-needed	2	16							
167	Public Use	Pub 3.0	Hunting.	Provide safe, compatible hunting opportunities to the public.	Pub 3.3	Maintain physical separation of closed zones through signage and landmarks, i.e., boulders, along access roads.		MN	One-time									
168	Public Use	Pub 3.0	Hunting.	Provide safe, compatible hunting opportunities to the public.	Pub 3.4	Provide hunter safety instruction on a regular basis at HCWA and throughout the region.		OU	Annual		2	16	2	16		16		32
169	Public Use	Pub 3.0	Hunting.	Provide safe, compatible hunting opportunities to the public.	Pub 3.5	Continue encouragement of young hunters through participation in junior hunt programs. Establish youth hunts at HCWA.		OU	Annual								40	
170	Public Use	Pub 3.0	Hunting.	Provide safe, compatible hunting opportunities to the public.	Pub 3.6	Conduct late summer volunteer "clean up day" to ready HCWA for the upcoming hunting season.		OU	Annual		8		8					
171	Public Use	Pub 3.0	Hunting.	Provide safe, compatible hunting opportunities to the public.	Pub 3.7	Maintain good relationship between Department staff, hunters, and volunteer organizations.		OU	On-going	24	40			40				40
172	Public Use	Pub 4.0	Wildlife Observation.	Provide compatible wildlife observation opportunities to the public.	Pub 4.1	Designate specific wildlife viewing areas in a variety of habitats and locations.		SP	One-time	2	8							
173	Public Use	Pub 4.0	Wildlife Observation.	Provide compatible wildlife observation opportunities to the public.	Pub 4.2	Develop interpretive signage for wildlife viewing trails.		OU	One-time								16	
174	Public Use	Pub 5.0	Trail Use.	Provide compatible trail access for the purpose of wildlife-dependent activities.	Pub 5.1	Post designated trails and maintain trail system (see Figure 11).>		OU	On-going				1	8				16
175	Public Use	Pub 5.0	Trail Use.	Provide compatible trail access for the purpose of wildlife-dependent activities.	Pub 5.2	Document condition of trails and habitat; consider removal or relocation of trails if damage to biological resources is taking place.		D	On-going			4	4					
176	Public Use	Pub 5.0	Trail Use.	Provide compatible trail access for the purpose of wildlife-dependent activities.	Pub 5.3	Control access to closed areas with barriers such as logs, boulders, and native vegetation (prickly or sticker plants). Prevent trail spreading or close user-defined trails.		MN	One-time	2	8		40	40	40	40		80
177	Public Use	Pub 5.0	Trail Use.	Provide compatible trail access for the purpose of wildlife-dependent activities.	Pub 5.4	Educate adjacent land owners that access is not permitted off of private lots; access is through the parking area on Honey Springs Road.		OU	On-going									40

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			Subject	Statement														
178	Public Use	Pub 6.0	Dog Training.	Provide compatible sporting dog training opportunities to the public.	Pub 6.1	Continue to allow sporting dog training.		MN	On-going	8	8							
179	Public Use	Pub 6.0	Dog Training.	Provide compatible sporting dog training opportunities to the public.	Pub 6.2	Maintain areas for a variety of sporting dogs.		MN	On-going		4	8	8		24			80
180	Public Use	Pub 6.0	Dog Training.	Provide compatible sporting dog training opportunities to the public.	Pub 6.3	Restore an abandoned stock pond to provide an aquatic dog training area for retrievers.		RE	One-time		24	24	24	40	24	24		24
181	Public Use	Pub 6.0	Dog Training.	Provide compatible sporting dog training opportunities to the public.	Pub 6.4	Design and restore fields adjacent to the stock pond to be used as a field component for sporting dog training.		RE	One-time	2	16							
182	Public Use	Pub 7.0	Signage.	Provide informative signage.	Pub 7.1	Prepare a plan for all signage that addresses sign maintenance, placement, and content.		D	One-time									
183	Public Use	Pub 7.0	Signage.	Provide informative signage.	Pub 7.2	Maintain signs at parking lots with wildlife area maps and regulations, and safety information, including:	a) Information on signs should include: General rules, prohibition on rifles and pistols, and identify hazards (e.g., mountain lions, rattle snakes, poison oak, border patrol, etc.).	MN	On-going		3							12
184	Public Use	Pub 7.0	Signage.	Provide informative signage.	Pub 7.2	Maintain signs at parking lots with wildlife area maps and regulations, and safety information, including:	b) Entrance signs at HCWA should inform visitors that they are proceeding at their own risk.	MN	On-going		1							4
185	Public Use	Pub 7.0	Signage.	Provide informative signage.	Pub 7.3	Work with Caltrans to install signage on SR 94 to direct visitors to the entrance of HCWA.		MN	One-time		4							
186	Public Use	Pub 7.0	Signage.	Provide informative signage.	Pub 7.4	Provide a large sign marking the HCWA entrance on Honey Springs Road.		MN	One-time		2		2	16	8			8
187	Public Use	Pub 7.0	Signage.	Provide informative signage.	Pub 7.5	Inspect and maintain signs annually.		MA	Annual		8							
188	Public Use	Pub 7.0	Signage.	Provide informative signage.	Pub 7.6	Inventory existing boundary signage and fencing, and install new signs and fencing where necessary.		MO	One-time		8							40
189	Public Use	Pub 7.0	Signage.	Provide informative signage.	Pub 7.7	Provide a sign board in the public parking lots that communicates a comprehensive display of public use opportunities; include a map showing available public use areas.		MN	One-time		8		8	16	8	8		8
190	Public Use	Pub 7.0	Signage.	Provide informative signage.	Pub 7.8	Provide signs marking trails and sporting dog training areas.		MN	One-time		4		4	24	8			24
191	Public Use	Pub 7.0	Signage.	Provide informative signage.	Pub 7.9	Provide signs marking areas that are closed for nesting, area maintenance, habitat restoration, emergency repairs, flood damage, safety, or other reasons.		MN	As-needed		4		4	24	8			24

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			Subject	Statement															
192	Public Use	Pub 7.0	Signage.	Provide informative signage.	Pub 7.10	Provide signs on trails indicating that hikers and mountain bikers are to yield to horseback riders, and hikers are to yield to mountain bikers.		MN	One-time										
193	Public Use	Pub 8.0	Community Partnership.	Continue to foster community partnership.	Pub 8.1	The Department will continue to communicate and coordinate with various community groups including hunters, equestrians, sporting dog groups and others for special events as well as volunteer opportunities;		OU	On-going		4		4	24	8				24
194	Public Use	Pub 8.0	Community Partnership.	Continue to foster community partnership.	Pub 8.2	Collaborate with outside groups in developing new program areas;		OU	On-going	16	16								
195	Public Use	Pub 8.0	Community Partnership.	Continue to foster community partnership.	Pub 8.3	Coordinate with volunteers to protect wildlife resources and habitat during large work parties; and		OU	On-going	2	40			40		40			40
196	Public Use	Pub 8.0	Community Partnership.	Continue to foster community partnership.	Pub 8.4	All groups must coordinate through Department management before engaging in volunteer activities, and receive training and briefings by the Department.		OU	On-going	8	40								
197	Public Use	Pub 8.0	Community Partnership.	Continue to foster community partnership.	Pub 8.5	Communicate with the Home Owners Association of Rancho Jamul Estates and other neighbors regarding adjacency issues.		OU	Annual		16								
198	Public Use	Pub 9.0	Regulations.	Support compatible wildlife-dependent public use through consistent regulations and coordination with other agencies.	Pub 9.1	Evaluate the hunting, angling, and wildlife viewing programs.		MN	Annual		8			24					
199	Public Use	Pub 9.0	Regulations.	Support compatible wildlife-dependent public use through consistent regulations and coordination with other agencies.	Pub 9.2	Evaluate regulations periodically to identify changes warranted to maintain consistency with LMP goals and reflect Department and Fish and Game Commission Policy.		MN	every 3 years	16	16	16	16	16				16	
200	Public Use	Pub 9.0	Regulations.	Support compatible wildlife-dependent public use through consistent regulations and coordination with other agencies.	Pub 9.3	Periodically review activities within HCWA for compatibility with the MSCP.		MN	As-needed	8	8	8							
201																			
202	Cultural Resources	Cul 1.0	Identify Cultural Resources.	Identify cultural resources that are significant/potentially significant to HCWA prehistory/history and meet criteria for listing in the California Register.	Cul 1.1	Gather Data. Compile all inventories and investigations of cultural resources for HCWA on file with the Department. Create a working bibliography.		D	One-time		2								20

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			Subject	Statement														
203	Cultural Resources	Cul 1.0	Identify Cultural Resources.	Identify cultural resources that are significant/potentially significant to HCWA prehistory/history and meet criteria for listing in the California Register.	Cul 1.2	Conduct Search. Have a qualified cultural resources specialist conduct a records search at the South Coastal Information Center (SCIC). This will provide the following:	a) A datasheet (National Archaeological Database record [or NADb]) for each investigation within HCWA that is on file with the SCIC.	D	One-time		16							
204	Cultural Resources	Cul 1.0	Identify Cultural Resources.	Identify cultural resources that are significant/potentially significant to HCWA prehistory/history and meet criteria for listing in the California Register.	Cul 1.2	Conduct Search. Have a qualified cultural resources specialist conduct a records search at the South Coastal Information Center (SCIC). This will provide the following:	b) A hard copy map (digital files may be requested) of the investigation boundaries within HCWA that are on file with the SCIC.	D	One-time									
205	Cultural Resources	Cul 1.0	Identify Cultural Resources.	Identify cultural resources that are significant/potentially significant to HCWA prehistory/history and meet criteria for listing in the California Register.	Cul 1.2	Conduct Search. Have a qualified cultural resources specialist conduct a records search at the South Coastal Information Center (SCIC). This will provide the following:	c) A record for each resource within HCWA that is on file with the SCIC.	D	One-time		16							
206	Cultural Resources	Cul 1.0	Identify Cultural Resources.	Identify cultural resources that are significant/potentially significant to HCWA prehistory/history and meet criteria for listing in the California Register.	Cul 1.2	Conduct Search. Have a qualified cultural resources specialist conduct a records search at the South Coastal Information Center (SCIC). This will provide the following:	d) A hard copy map (digital files may be requested) of the resource boundaries within HCWA that are on file with the SCIC.	D	One-time	2	16							16
207	Cultural Resources	Cul 1.0	Identify Cultural Resources.	Identify cultural resources that are significant/potentially significant to HCWA prehistory/history and meet criteria for listing in the California Register.	Cul 1.2	Conduct Search. Have a qualified cultural resources specialist conduct a records search at the South Coastal Information Center (SCIC). This will provide the following:	e) A copy of each historic map that includes HCWA.	D	One-time	2	16							16
208	Cultural Resources	Cul 1.0	Identify Cultural Resources.	Identify cultural resources that are significant/potentially significant to HCWA prehistory/history and meet criteria for listing in the California Register.	Cul 1.3	Maintain Data. Maintain and continue to update the data collected from the Department files and the records search.		MN	On-going		40							
209	Cultural Resources	Cul 1.0	Identify Cultural Resources.	Identify cultural resources that are significant/potentially significant to HCWA prehistory/history and meet criteria for listing in the California Register.	Cul 1.4	Evaluate Resources. Have a qualified cultural resources specialist formally evaluate known cultural resources for the California Register.		D	One-time		16							
210	Cultural Resources	Cul 1.0	Identify Cultural Resources.	Identify cultural resources that are significant/potentially significant to HCWA prehistory/history and meet criteria for listing in the California Register.	Cul 1.5	Contact Native Americans. Contact the Native Americans identified in the 2005 contact program, and solicit information on resources that may not be previously identified or that they deem important.	a) Contact James Robertson about the sacred lands identified by the California Native American Heritage Commission.	D	One-time		24							

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			Subject	Statement															
211	Cultural Resources	Cul 1.0	Identify Cultural Resources.	Identify cultural resources that are significant/potentially significant to HCWA prehistory/history and meet criteria for listing in the California Register.	Cul 1.6	Define Areas to be Surveyed. Using the data acquired from the SCIC, define the areas that have not been surveyed. In addition, review the adequacy and age of prior surveys to determine if certain areas need to be resurveyed.		D	One-time										
212	Cultural Resources	Cul 1.0	Identify Cultural Resources.	Identify cultural resources that are significant/potentially significant to HCWA prehistory/history and meet criteria for listing in the California Register.	Cul 1.7	Inventory and Evaluate. Have a qualified cultural resources specialist conduct cultural resources inventories in areas to be surveyed and evaluate identified resources.	a) Begin by identifying programs and planned development within HCWA and conduct focused field surveys in those areas.	MO	One-time		8								
213	Cultural Resources	Cul 1.0	Identify Cultural Resources.	Identify cultural resources that are significant/potentially significant to HCWA prehistory/history and meet criteria for listing in the California Register.	Cul 1.7	Inventory and Evaluate. Have a qualified cultural resources specialist conduct cultural resources inventories in areas to be surveyed and evaluate identified resources.	b) Avoid areas where resources are found.	MO	As-needed										
214	Cultural Resources	Cul 1.0	Identify Cultural Resources.	Identify cultural resources that are significant/potentially significant to HCWA prehistory/history and meet criteria for listing in the California Register.	Cul 1.7	Inventory and Evaluate. Have a qualified cultural resources specialist conduct cultural resources inventories in areas to be surveyed and evaluate identified resources.	c) Encourage non-destructive research by professional archaeologists.	MO	As-needed		4								
215	Cultural Resources	Cul 1.0	Identify Cultural Resources.	Identify cultural resources that are significant/potentially significant to HCWA prehistory/history and meet criteria for listing in the California Register.	Cul 1.7	Inventory and Evaluate. Have a qualified cultural resources specialist conduct cultural resources inventories in areas to be surveyed and evaluate identified resources.	d) Require publication and distribution of results.	MO	As-needed										
216	Cultural Resources	Cul 1.0	Identify Cultural Resources.	Identify cultural resources that are significant/potentially significant to HCWA prehistory/history and meet criteria for listing in the California Register.	Cul 1.7	Inventory and Evaluate. Have a qualified cultural resources specialist conduct cultural resources inventories in areas to be surveyed and evaluate identified resources.	e) Ensure proper curation of any materials collected, including notes and photographs.	MO	As-needed										
217	Cultural Resources	Cul 1.0	Identify Cultural Resources.	Identify cultural resources that are significant/potentially significant to HCWA prehistory/history and meet criteria for listing in the California Register.	Cul 1.8	Add New Data. Add new data to existing dataset.		D	As-needed										
218	Cultural Resources	Cul 2.0	Protect Cultural Resources.	Protect cultural resources that are significant/potentially significant to HCWA prehistory/history and meet criteria for listing in the California Register.	Cul 2.1	Conduct Review. Conduct a cultural resources review before any ground-disturbing activities occur. Survey area if location has not been previously surveyed.		D/ MO	As-needed		8								16
											16								

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			Subject	Statement															
219	Cultural Resources	Cul 2.0	Protect Cultural Resources.	Protect cultural resources that are significant/potentially significant to HCWA prehistory/history and meet criteria for listing in the California Register.	Cul 2.2	Implement Treatments. Implement treatments using Treatment Categories provided by Hector (2002).	a) Implement Category 1 Treatments – Preserve in place. Active management for preservation will be needed, to include: – Fencing	SP	As-needed		8		8	24	8	24			24
220	Cultural Resources	Cul 2.0	Protect Cultural Resources.	Protect cultural resources that are significant/potentially significant to HCWA prehistory/history and meet criteria for listing in the California Register.	Cul 2.2	Implement Treatments. Implement treatments using Treatment Categories provided by Hector (2002).	a) (Cont.) – Re-routing trails	SP	As-needed		8	16	8	40	16	40			40
221	Cultural Resources	Cul 2.0	Protect Cultural Resources.	Protect cultural resources that are significant/potentially significant to HCWA prehistory/history and meet criteria for listing in the California Register.	Cul 2.2	Implement Treatments. Implement treatments using Treatment Categories provided by Hector (2002).	a) (Cont.) – Stabilization and repair of historic structures and features, including providing covers for buildings or ruins	SP	As-needed	8	24								
222	Cultural Resources	Cul 2.0	Protect Cultural Resources.	Protect cultural resources that are significant/potentially significant to HCWA prehistory/history and meet criteria for listing in the California Register.	Cul 2.2	Implement Treatments. Implement treatments using Treatment Categories provided by Hector (2002).	a) (Cont.) – Capping with non-cultural soils	SP	As-needed	2	16								
223	Cultural Resources	Cul 2.0	Protect Cultural Resources.	Protect cultural resources that are significant/potentially significant to HCWA prehistory/history and meet criteria for listing in the California Register.	Cul 2.2	Implement Treatments. Implement treatments using Treatment Categories provided by Hector (2002).	a) (Cont.) – Annual monitoring	MO	Annual			8							
224	Cultural Resources	Cul 2.0	Protect Cultural Resources.	Protect cultural resources that are significant/potentially significant to HCWA prehistory/history and meet criteria for listing in the California Register.	Cul 2.2	Implement Treatments. Implement treatments using Treatment Categories provided by Hector (2002).	b) Implement Category 2 Treatments – Preserve in place. Treatments to avoid impacts to these resources may include: – Avoidance through rerouting trails and activity areas	MN/RE	As-needed		2								
225	Cultural Resources	Cul 2.0	Protect Cultural Resources.	Protect cultural resources that are significant/potentially significant to HCWA prehistory/history and meet criteria for listing in the California Register.	Cul 2.2	Implement Treatments. Implement treatments using Treatment Categories provided by Hector (2002).	b) (Cont.) – Revegetation to hide and protect the resource	RE	As-needed		2	8							16
226	Cultural Resources	Cul 2.0	Protect Cultural Resources.	Protect cultural resources that are significant/potentially significant to HCWA prehistory/history and meet criteria for listing in the California Register.	Cul 2.2	Implement Treatments. Implement treatments using Treatment Categories provided by Hector (2002).	b) (Cont.) – Limited stabilization of historic features such as dump sites and small architectural sites	MN	As-needed		4								16
227	Cultural Resources	Cul 2.0	Protect Cultural Resources.	Protect cultural resources that are significant/potentially significant to HCWA prehistory/history and meet criteria for listing in the California Register.	Cul 2.2	Implement Treatments. Implement treatments using Treatment Categories provided by Hector (2002).	b) (Cont.) – Biennial monitoring	MO	every 2 years			2							8
228	Cultural Resources	Cul 2.0	Protect Cultural Resources.	Protect cultural resources that are significant/potentially significant to HCWA prehistory/history and meet criteria for listing in the California Register.	Cul 2.2	Implement Treatments. Implement treatments using Treatment Categories provided by Hector (2002).	c) Implement Category 3 Treatments – Preserve in place. Treatment may include: – Avoidance of direct impacts	MN	As-needed		2								

Appendix F Operations and Maintenance Requirements to Implement the HCWA LMP

Item No.	Element	Code	GOAL		Code	Task	Subtasks / Action Items	Management Type*	Schedule	Sr. Biology Super. (Wildlife)	Assoc. Biologist	Wildlife Biologist	Wildlife Habitat Super. I	Wildlife Habitat Assist.	Tractor Oper. Laborer	Fish & Wildlife Tech.	Fish & Wildlife Interpret / II	Scientific/Seasonal Aid	
			Subject	Statement															
229	Cultural Resources	Cul 2.0	Protect Cultural Resources.	Protect cultural resources that are significant/potentially significant to HCWA prehistory/history and meet criteria for listing in the California Register.	Cul 2.2	Implement Treatments. Implement treatments using Treatment Categories provided by Hector (2002).	c) (Cont.) – Revegetation to hide or protect the resource	RE	As-needed		2	8							16
230	Cultural Resources	Cul 2.0	Protect Cultural Resources.	Protect cultural resources that are significant/potentially significant to HCWA prehistory/history and meet criteria for listing in the California Register.	Cul 2.2	Implement Treatments. Implement treatments using Treatment Categories provided by Hector (2002).	c) (Cont.) – Restoration or reconstruction of a historic building for interpretive use	SP	As-needed	8	80						80		
231	Cultural Resources	Cul 2.0	Protect Cultural Resources.	Protect cultural resources that are significant/potentially significant to HCWA prehistory/history and meet criteria for listing in the California Register.	Cul 2.2	Implement Treatments. Implement treatments using Treatment Categories provided by Hector (2002).	d) Implement Category 4 Treatments – These resources should be treated as follows: – Ensure that proper documentation in terms of a site report or site record has been completed and submitted to the proper agencies and organizations (e.g., SCIC)	D	One-time		16								
232	Cultural Resources	Cul 2.0	Protect Cultural Resources.	Protect cultural resources that are significant/potentially significant to HCWA prehistory/history and meet criteria for listing in the California Register.	Cul 2.2	Implement Treatments. Implement treatments using Treatment Categories provided by Hector (2002).	d) (Cont.) – Provide funds for curation of artifacts collected.	SP	One-time		2								
233	Cultural Resources	Cul 2.0	Protect Cultural Resources.	Protect cultural resources that are significant/potentially significant to HCWA prehistory/history and meet criteria for listing in the California Register.	Cul 2.3	Retain Professional Assistance. Have a professional cultural resources person assist in assigning treatments to those not identified by Hector (2002).		MO	One-time		8								
234	Cultural Resources	Cul 2.0	Protect Cultural Resources.	Protect cultural resources that are significant/potentially significant to HCWA prehistory/history and meet criteria for listing in the California Register.	Cul 2.4	Prioritize Activities. Prioritize the following activities identified by Hector (2002).	a) Control access to CA-SDI-7441.	MN	On-going		4		8	8					8
235	Cultural Resources	Cul 2.0	Protect Cultural Resources.	Protect cultural resources that are significant/potentially significant to HCWA prehistory/history and meet criteria for listing in the California Register.	Cul 2.4	Prioritize Activities. Prioritize the following activities identified by Hector (2002).	b) Eliminate access to CA-SDI-9273, -9689, -14,439, and -14,443. Make no plans to develop or improve access to these locations.	MN	On-going		4						24		24
236	Cultural Resources	Cul 2.0	Protect Cultural Resources.	Protect cultural resources that are significant/potentially significant to HCWA prehistory/history and meet criteria for listing in the California Register.	Cul 2.4	Prioritize Activities. Prioritize the following activities identified by Hector (2002).	c) Consider the effects to CA-SDI-16,270, -16,271, -16,272, and 16-273 when proposing revegetation programs. Any ground-disturbing activity at the site locations will cause adverse impacts to these sites.	MN	As-needed		8								
237	Cultural Resources	Cul 2.0	Protect Cultural Resources.	Protect cultural resources that are significant/potentially significant to HCWA prehistory/history and meet criteria for listing in the California Register.	Cul 2.4	Prioritize Activities. Prioritize the following activities identified by Hector (2002).	d) Do not remove existing historic ranching materials that may remain from prior ranching activities. If there is a safety issue, removal of historic ranching materials should be done under the supervision of a professional cultural resources person so that the materials can be documented.	MN/D	On-going		8								

Appendix F Operations and Maintenance Requirements to Implement the HCWA LMP

Item No.	Element	Code	GOAL		Code	Task	Subtasks / Action Items	Management Type*	Schedule	Sr. Biology Super. (Wildlife)	Assoc. Biologist	Wildlife Biologist	Wildlife Habitat Super. I	Wildlife Habitat Assist.	Tractor Oper. Laborer	Fish & Wildlife Tech.	Fish & Wildlife Interpret / II	Scientific/Seasonal Aid
			Subject	Statement														
238	Cultural Resources	Cul 2.0	Protect Cultural Resources.	Protect cultural resources that are significant/potentially significant to HCWA prehistory/history and meet criteria for listing in the California Register.	Cul 2.5	Consult California Law. When activities may affect cultural resources, consult California's statutes, regulations, and administrative policies regarding historic preservation and protection.		MN	As-needed		16							
239	Cultural Resources	Cul 2.0	Protect Cultural Resources.	Protect cultural resources that are significant/potentially significant to HCWA prehistory/history and meet criteria for listing in the California Register.	Cul 2.6	Mitigate Impacts. Mitigate any potential adverse impacts to cultural resources through active management.		MN	As-needed	8	24							
240	Cultural Resources	Cul 2.0	Protect Cultural Resources.	Protect cultural resources that are significant/potentially significant to HCWA prehistory/history and meet criteria for listing in the California Register.	Cul 2.7	Protect during Planning. Protect cultural resources using the following methods identified by Hector (2002) during planning.	a) Avoidance	MN/ MO	As-needed		4							
241	Cultural Resources	Cul 2.0	Protect Cultural Resources.	Protect cultural resources that are significant/potentially significant to HCWA prehistory/history and meet criteria for listing in the California Register.	Cul 2.7	Protect during Planning. Protect cultural resources using the following methods identified by Hector (2002) during planning.	b) Fencing. The placement of fence posts should be monitored by an archaeologist; in general, a split rail or lodge-pole fence keeps most people out of a sensitive area.	MO	One-time	2	8			24		24		24
242	Cultural Resources	Cul 2.0	Protect Cultural Resources.	Protect cultural resources that are significant/potentially significant to HCWA prehistory/history and meet criteria for listing in the California Register.	Cul 2.7	Protect during Planning. Protect cultural resources using the following methods identified by Hector (2002) during planning.	c) Capping with non-cultural soils. Capping a site or a portion of a site where there is a trail or dirt road should be undertaken with the participation of an archaeologist.	MN/ MO	One-time	2	4		8	16	16			
243	Cultural Resources	Cul 2.0	Protect Cultural Resources.	Protect cultural resources that are significant/potentially significant to HCWA prehistory/history and meet criteria for listing in the California Register.	Cul 2.7	Protect during Planning. Protect cultural resources using the following methods identified by Hector (2002) during planning.	d) Revegetation of site area. Revegetation to protect a site should not include any disturbance of the surface of the ground, even if the site has been an agricultural field.	RE	One-time	2	24				24			
244	Cultural Resources	Cul 2.0	Protect Cultural Resources.	Protect cultural resources that are significant/potentially significant to HCWA prehistory/history and meet criteria for listing in the California Register.	Cul 2.7	Protect during Planning. Protect cultural resources using the following methods identified by Hector (2002) during planning.	e) Additional monitoring. Testing and data recovery if the resource cannot be avoided	MO	As-needed		8							24
245	Cultural Resources	Cul 2.0	Protect Cultural Resources.	Protect cultural resources that are significant/potentially significant to HCWA prehistory/history and meet criteria for listing in the California Register.	Cul 2.8	Monitor Resources. Monitor cultural resources at recommended intervals (Appendix A). If damage or impacts are noted, the measures noted in the next Treatment Category should be implemented.		MO	As-needed		8							24
246	Cultural Resources	Cul 2.0	Protect Cultural Resources.	Protect cultural resources that are significant/potentially significant to HCWA prehistory/history and meet criteria for listing in the California Register.	Cul 2.9	Comply with Agreements. Comply with binding agreements made during the acquisition of property.	a) Archaeological Conservation Easement of 1983. Department is required to address sites CA-SDI-189, -7447, -7448, and -7449 in a management plan. The Department has to ensure that these sites are not disturbed. These sites should be protected under Category 1 Treatment.	D	On-going		8							

Appendix F Operations and Maintenance Requirements to Implement the HCWA LMP

Item No.	Element	Code	GOAL		Code	Task	Subtasks / Action Items	Management Type*	Schedule	Sr. Biology Super. (Wildlife)	Assoc. Biologist	Wildlife Biologist	Wildlife Habitat Super. I	Wildlife Habitat Assist.	Tractor Oper. Laborer	Fish & Wildlife Tech.	Fish & Wildlife Interpret / II	Scientific/Seasonal Aid
			Subject	Statement														
247	Cultural Resources	Cul 2.0	Protect Cultural Resources.	Protect cultural resources that are significant/potentially significant to HCWA prehistory/history and meet criteria for listing in the California Register.	Cul 2.9	Comply with Agreements. Comply with binding agreements made during the acquisition of property.	b) Purchase agreement for Expansion Area 2. Department agreed to contact the Western Division of Archaeological Conservancy when the management plan is being developed. The Archaeological Conservancy, 5301 Central Avenue NE, Suite 1218, Albuquerque, NM, 87108-1517, Telephone: (505) 266-1540	D	One-time	1	8							
248	Cultural Resources	Cul 2.0	Protect Cultural Resources.	Protect cultural resources that are significant/potentially significant to HCWA prehistory/history and meet criteria for listing in the California Register.	Cul 2.10	Implement Stewardship. Implement a stewardship program that trains users of HCWA to monitor the conditions of cultural resources. Site stewards will require mandatory training and ongoing monitoring. Youth service projects can be developed through this program.		MO/OU	On-going	4	24							
249	Cultural Resources	Cul 3.0	Involve the Community.	Involve the community in cultural resource activities at HCWA.	Cul 3.1	Continue consultation with Native Americans (i.e., periodical phone calls and letters, presentation to Native American communities, and invitation for input and concerns).		D/OU	On-going	4	24							
250	Cultural Resources	Cul 3.0	Involve the Community.	Involve the community in cultural resource activities at HCWA.	Cul 3.2	Create Public Contact List. Create an interested parties or stakeholders list.		D	One-time	2	16							
251	Cultural Resources	Cul 3.0	Involve the Community.	Involve the community in cultural resource activities at HCWA.	Cul 3.3	Implement Interpretive Plan. Create and implement an interpretive plan.	a) Without threatening the integrity of the cultural resource, prepare written material describing what is present.	D	One-time	1							16	
252	Cultural Resources	Cul 3.0	Involve the Community.	Involve the community in cultural resource activities at HCWA.	Cul 3.3	Implement Interpretive Plan. Create and implement an interpretive plan.	b) Develop graphic materials and interpretive displays for the public.	D	One-time	1							16	
253	Cultural Resources	Cul 3.0	Involve the Community.	Involve the community in cultural resource activities at HCWA.	Cul 3.3	Implement Interpretive Plan. Create and implement an interpretive plan.	c) Replicas of collected artifacts from CA-SDI-16,270 including a sandstone discoidal and a Cottonwood Triangular projectile point base could be displayed and explained.	D	One-time	1							24	
254	Cultural Resources	Cul 3.0	Involve the Community.	Involve the community in cultural resource activities at HCWA.	Cul 3.3	Implement Interpretive Plan. Create and implement an interpretive plan.	d) Other interpretive displays could feature the history of ranching in San Diego.	D	One-time	1							16	
255	Cultural Resources	Cul 3.0	Involve the Community.	Involve the community in cultural resource activities at HCWA.	Cul 3.4	Develop Outreach Programs. Develop public outreach programs for users and visitors.	a) Give presentations and tours.	OU	On-going	1							80	
256	Cultural Resources	Cul 3.0	Involve the Community.	Involve the community in cultural resource activities at HCWA.	Cul 3.5	Develop Education Materials. Develop educational materials that can be used in County of San Diego school curriculums.		D	One-time	1							40	
257																		
258	Facility Maintenance	Fac 1.0	Facility Management.	Manage structures/facilities to provide wildlife-dependent uses, while protecting sensitive resources (see also Public Use).	Fac 1.1	Roads and Trails. Manage the trails system.	a) Restore closed trails. Identify trails to be closed and implement active restoration through decompaction, invasives removal, and when necessary, seeding or planting. Continue invasive species eradication efforts for no less than 5 years.	RE	One-time	2		24	8	24				48

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Item No.	Element	Code	GOAL		Code	Task	Subtasks / Action Items	Management Type*	Schedule	Sr. Biology Super. (Wildlife)	Assoc. Biologist	Wildlife Biologist	Wildlife Habitat Super. I	Wildlife Habitat Assist.	Tractor Oper. Laborer	Fish & Wildlife Tech.	Fish & Wildlife Interpret / II	Scientific/Seasonal Aid
			Subject	Statement														
259	Facility Maintenance	Fac 1.0	Facility Management.	Manage structures/facilities to provide wildlife-dependent uses, while protecting sensitive resources (see also Public Use).	Fac 1.1	Roads and Trails. Manage the trails system.	b) Prevent erosion damage to trails by implementing BMPs as necessary.	MN/MO	On-going		4		4		40			
260	Facility Maintenance	Fac 1.0	Facility Management.	Manage structures/facilities to provide wildlife-dependent uses, while protecting sensitive resources (see also Public Use).	Fac 1.1	Roads and Trails. Manage the trails system.	c) Prohibit off-road illegal activities. Ensure that no illegal trails are formed by off-road activities by posting signs or installing barriers as needed.	MN/MO	On-going		4		16	16		16		32
261	Facility Maintenance	Fac 1.0	Facility Management.	Manage structures/facilities to provide wildlife-dependent uses, while protecting sensitive resources (see also Public Use).	Fac 1.2:	Parking Lots. Maintain parking lots to support public use/safety, while avoiding/minimizing impacts on adjacent resources.		MA	On-going		2		8		16			
262	Facility Maintenance	Fac 1.0	Facility Management.	Manage structures/facilities to provide wildlife-dependent uses, while protecting sensitive resources (see also Public Use).	Fac 1.3:	Fences, Gates, and Barriers. Manage fences, gates, barriers, and other structures to support wildlife movement, and protect sensitive biological resources from public use. Remove structures that impede management activities or Border Patrol Access.		MN	On-going		8		16					80
263	Facility Maintenance	Fac 1.0	Facility Management.	Manage structures/facilities to provide wildlife-dependent uses, while protecting sensitive resources (see also Public Use).	Fac 1.4	Signage and Public Education. Remove, add, or update signs as necessary (see also Pub 7.0).		MN	As-needed		8							40
264	Facility Maintenance	Fac 1.0	Facility Management.	Manage structures/facilities to provide wildlife-dependent uses, while protecting sensitive resources (see also Public Use).	Fac 1.5:	Structures. Maintain the State Housing residence. Demolish dilapidated structures (old Honey Springs Ranch buildings) to ensure public safety near these features.		MA	On-going	4	40							
265	Facility Maintenance	Fac 1.0	Facility Management.	Manage structures/facilities to provide wildlife-dependent uses, while protecting sensitive resources (see also Public Use).	Fac 1.6:	Water Features. Maintain wells, fire hydrants, artificial ponds, and pipelines.	a) Determine functionality of all wells, depth to groundwater, and pumping rate. Conduct water quality analysis of well water to determine if it is safe for people and wildlife to drink. Post a warning sign if non-potable.	MN/MO	One-time		4		8	40	40	40		
266	Facility Maintenance	Fac 1.0	Facility Management.	Manage structures/facilities to provide wildlife-dependent uses, while protecting sensitive resources (see also Public Use).	Fac 1.6:	Water Features. Maintain wells, fire hydrants, artificial ponds, and pipelines.	b) Maintain functional wells regularly. Cover all non-functional wells to protect the public from accidents.	MN/MO	On-going				8					
267	Facility Maintenance	Fac 1.0	Facility Management.	Manage structures/facilities to provide wildlife-dependent uses, while protecting sensitive resources (see also Public Use).	Fac 1.6:	Water Features. Maintain wells, fire hydrants, artificial ponds, and pipelines.	c) Maintain fire hydrants by lubricating and testing them every 6 months.	MA	every 6 months									
268	Facility Maintenance	Fac 1.0	Facility Management.	Manage structures/facilities to provide wildlife-dependent uses, while protecting sensitive resources (see also Public Use).	Fac 1.6:	Water Features. Maintain wells, fire hydrants, artificial ponds, and pipelines.	d) Maintain water level of the restored stock pond using water from nearest existing well. Use native flora to provide cover for training exercises.	MA	As-needed				4					
269																		

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Item No.	Element	Code	GOAL		Code	Task	Subtasks / Action Items	Management Type*	Schedule	Sr. Biology Super. (Wildlife)	Assoc. Biologist	Wildlife Biologist	Wildlife Habitat Super. I	Wildlife Habitat Assist.	Tractor Oper. Laborer	Fish & Wildlife Tech.	Fish & Wildlife Interpret / II	Scientific/Seasonal Aid
			Subject	Statement														
270	Research and Monitoring	Mon 1.0	Scientific Research.	Provide opportunities for research to support adaptive management and provide useful biological information.	Mon 1.1	Identify data gaps and/or encourage research on species or ecosystem-level biology, design, management, and monitoring.		MO	On-going			24						
271	Research and Monitoring	Mon 1.0	Scientific Research.	Provide opportunities for research to support adaptive management and provide useful biological information.	Mon 1.2	Identify experimental design opportunities to be incorporated into habitat and species management, restoration, and/or reintroduction projects on the wildlife area.		SP	On-going			8						
272	Research and Monitoring	Mon 1.0	Scientific Research.	Provide opportunities for research to support adaptive management and provide useful biological information.	Mon 1.3	Facilitate access to students and researchers from local universities and colleges. Encourage research that supports the goals of this LMP.		OU	On-going									
273	Research and Monitoring	Mon 2.0	Consistency with Appropriate Management and Monitoring Protocols.	When defining the details of the methodology for tasks in the Biological Element goal, use relevant, established protocols.	Mon 2.1	Use the following protocols as appropriate:	a) State and Federally listed species. – USFWS focused species survey protocols for Quino checkerspot butterfly and California gnatcatcher.	MN/ MO	On-going		16	24						24
274	Research and Monitoring	Mon 2.0	Consistency with Appropriate Management and Monitoring Protocols.	When defining the details of the methodology for tasks in the Biological Element goal, use relevant, established protocols.	Mon 2.1	Use the following protocols as appropriate:	– Thornmint – utilize Department protocols for monitoring and population assessment.	MN/ MO	On-going		1	24						24
275	Research and Monitoring	Mon 2.0	Consistency with Appropriate Management and Monitoring Protocols.	When defining the details of the methodology for tasks in the Biological Element goal, use relevant, established protocols.	Mon 2.1	Use the following protocols as appropriate:	– A management and monitoring plan for Quino checkerspot butterfly (<i>Euphydryas editha quino</i>) and its habitats in San Diego County (Longcore et al. 2003).	MN/ MO	On-going		1	24						24
276	Research and Monitoring	Mon 2.0	Consistency with Appropriate Management and Monitoring Protocols.	When defining the details of the methodology for tasks in the Biological Element goal, use relevant, established protocols.	Mon 2.1	Use the following protocols as appropriate:	– Survey and monitoring report for the arroyo toad conducted in the MSCP study area (USGS in progress).	MN/ MO	On-going		1	24						24
277	Research and Monitoring	Mon 2.0	Consistency with Appropriate Management and Monitoring Protocols.	When defining the details of the methodology for tasks in the Biological Element goal, use relevant, established protocols.	Mon 2.1	Use the following protocols as appropriate:	b) MSCP covered species. – MSCP Monitoring Plan (Under prep, see also Ogden 1996; CBI 2001a and 2001b)	MN/ MO	On-going		1	24						24
278	Research and Monitoring	Mon 2.0	Consistency with Appropriate Management and Monitoring Protocols.	When defining the details of the methodology for tasks in the Biological Element goal, use relevant, established protocols.	Mon 2.1	Use the following protocols as appropriate:	c) Vegetation Communities. – California Native Plant Society - Rapid Assessment Protocol (CNPS 2005).	MN/ MO	On-going		1	24						24
279	Research and Monitoring	Mon 2.0	Consistency with Appropriate Management and Monitoring Protocols.	When defining the details of the methodology for tasks in the Biological Element goal, use relevant, established protocols.	Mon 2.1	Use the following protocols as appropriate:	– MSCP annual report. Includes information about post-fire habitat recovery monitoring conducted for the MSCP; photo points established near Rancho Jamul (County of San Diego 2006).	MN/ MO	On-going	2	2	40						
280	Research and Monitoring	Mon 2.0	Consistency with Appropriate Management and Monitoring Protocols.	When defining the details of the methodology for tasks in the Biological Element goal, use relevant, established protocols.	Mon 2.1	Use the following protocols as appropriate:	d) Sensitive Habitats. – Final report for Creating an Index of Biological Integrity for Coastal Sage Scrub: A tool for habitat quality assessment and monitoring (Diffendorfer et al. 2004).	MN/ MO	On-going		2	24						24
281	Research and Monitoring	Mon 2.0	Consistency with Appropriate Management and Monitoring Protocols.	When defining the details of the methodology for tasks in the Biological Element goal, use relevant, established protocols.	Mon 2.1	Use the following protocols as appropriate:	– Adaptive management for southern California grasslands (Chadden, A., E. Dowksza, and L. Turner 2004).	MN/ MO	On-going		1	24						24

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			Subject	Statement															
282	Research and Monitoring	Mon 2.0	Consistency with Appropriate Management and Monitoring Protocols.	When defining the details of the methodology for tasks in the Biological Element goal, use relevant, established protocols.	Mon 2.1	Use the following protocols as appropriate:	e) Rare Plants. Survey methods should be consistent with those used for the baseline biodiversity study (USGS 2004a).	MN/ MO	On-going		1	24							24
283	Research and Monitoring	Mon 2.0	Consistency with Appropriate Management and Monitoring Protocols.	When defining the details of the methodology for tasks in the Biological Element goal, use relevant, established protocols.	Mon 2.1	Use the following protocols as appropriate:	Although no rare plant monitoring protocol is available for the South County MSCP, see MSCP rare plant monitoring: field monitoring methods (City of San Diego 2005).	MN/ MO	On-going		1	24							24
284	Research and Monitoring	Mon 2.0	Consistency with Appropriate Management and Monitoring Protocols.	When defining the details of the methodology for tasks in the Biological Element goal, use relevant, established protocols.	Mon 2.1	Use the following protocols as appropriate:	f) Sensitive Wildlife. Habitat surveys and monitoring reports on bats, arroyo toad, and southwestern pond turtle throughout the San Diego MSCP study area (includes management recommendations) (County of San Diego u.d.).	MN/ MO	On-going		1	24							24
285	Research and Monitoring	Mon 2.0	Consistency with Appropriate Management and Monitoring Protocols.	When defining the details of the methodology for tasks in the Biological Element goal, use relevant, established protocols.	Mon 2.1	Use the following protocols as appropriate:	g) Dove and Quail – Annual censusing should follow national and California protocols.	MN/ MO	On-going		1	24							48
286	Research and Monitoring	Mon 2.0	Consistency with Appropriate Management and Monitoring Protocols.	When defining the details of the methodology for tasks in the Biological Element goal, use relevant, established protocols.	Mon 2.1	Use the following protocols as appropriate:	h) General Surveys. General wildlife surveys and non-native species surveys should be consistent with methods used in USGS (2004a).	MN/ MO	On-going		1	24							24
287	Research and Monitoring	Mon 2.0	Consistency with Appropriate Management and Monitoring Protocols.	When defining the details of the methodology for tasks in the Biological Element goal, use relevant, established protocols.	Mon 2.1	Use the following protocols as appropriate:	i) Wildlife movement. Wildcat Canyon Road Enhancement Project Before-After-Control-Impact Study. Final preconstruction report (EDAW 2005). Wildlife Corridor Monitoring Study, prepared for the Multiple Species Conservation Program (CBI 2003b).	MN/ MO	On-going		1	24							24
288	Research and Monitoring	Mon 2.0	Consistency with Appropriate Management and Monitoring Protocols.	When defining the details of the methodology for tasks in the Biological Element goal, use relevant, established protocols.	Mon 2.1	Use the following protocols as appropriate:	j) Adaptive management. Designing monitoring programs in an adaptive management context for regional multiple species conservation plans (USGS 2004b).	MN/ MO	On-going	1	1	24							
289																			
290	Fire Management	Fire 1.0	Pre-fire Fire Management.	Develop and implement pre-fire management measures to sustain ecosystem health and minimize impacts.	Fire 1.1	Meet biennially with CDF representatives to discuss fire-related issues relevant to HCWA. Map areas of concern and update map as needed.		MN	every 2 years		2	8							
291	Fire Management	Fire 1.0	Pre-fire Fire Management.	Develop and implement pre-fire management measures to sustain ecosystem health and minimize impacts.	Fire 1.2	Develop a wildfire management plan (WFMP). Review WFMP every 5 years, and update if needed.		D	every 5 years		2	16	24						
292	Fire Management	Fire 1.0	Pre-fire Fire Management.	Develop and implement pre-fire management measures to sustain ecosystem health and minimize impacts.	Fire 1.2	Develop a wildfire management plan (WFMP). Review WFMP every 5 years, and update if needed.	a) Assess road conditions and maintain road surfaces and width to allow access by wildland firefighting engines.	MO	As-needed				16						
293	Fire Management	Fire 1.0	Pre-fire Fire Management.	Develop and implement pre-fire management measures to sustain ecosystem health and minimize impacts.	Fire 1.2	Develop a wildfire management plan (WFMP). Review WFMP every 5 years, and update if needed.	b) Mow grasses and thin or reduce vegetation adjacent to public vehicle access to minimize risks of ignition.	MN	As-needed	8	8	8	8	80	40	80			160

Appendix F Operations and Maintenance Requirements to Implement the HCWA LMP

Item No.	Element	Code	GOAL		Code	Task	Subtasks / Action Items	Management Type*	Schedule	Sr. Biology Super. (Wildlife)	Assoc. Biologist	Wildlife Biologist	Wildlife Habitat Super. I	Wildlife Habitat Assist.	Tractor Oper. Laborer	Fish & Wildlife Tech.	Fish & Wildlife Interpret / II	Scientific/Seasonal Aid	
			Subject	Statement															
294	Fire Management	Fire 1.0	Pre-fire Fire Management.	Develop and implement pre-fire management measures to sustain ecosystem health and minimize impacts.	Fire 1.2	Develop a wildfire management plan (WFMP). Review WFMP every 5 years, and update if needed.	c) Address coordination needs with Caltrans and the Department for fuel management along SR 94, Honey Springs Road, and Rancho Jamul Drive.	MN	As-needed	1	24								
295	Fire Management	Fire 1.0	Pre-fire Fire Management.	Develop and implement pre-fire management measures to sustain ecosystem health and minimize impacts.	Fire 1.2	Develop a wildfire management plan (WFMP). Review WFMP every 5 years, and update if needed.	d) Incorporate plans for management of habitat through prescribed burns at specific locations.	MN	As-needed	1	40								
296	Fire Management	Fire 1.0	Pre-fire Fire Management.	Develop and implement pre-fire management measures to sustain ecosystem health and minimize impacts.	Fire 1.2	Develop a wildfire management plan (WFMP). Review WFMP every 5 years, and update if needed.	e) Incorporate methods for fire response that would consider effects on natural and cultural resources within HCWA.	MN	One-time	1	24								
297	Fire Management	Fire 1.0	Pre-fire Fire Management.	Develop and implement pre-fire management measures to sustain ecosystem health and minimize impacts.	Fire 1.3	Participate in preparing Community Wildfire Protection Plans (CWPPs) for areas that encompass HCWA.		MN	On-going	8	16								
298	Fire Management	Fire 1.0	Pre-fire Fire Management.	Develop and implement pre-fire management measures to sustain ecosystem health and minimize impacts.	Fire 1.4	Train a Department biologist to serve the role of resource specialist or agency representative through the Incident Command System.		MN	On-going	2	24								
299	Fire Management	Fire 2.0	Fire Suppression.	Conduct wildfire suppression activities in ways that sustain ecosystem health and processes, and minimize impacts.	Fire 2.1	Establish staging areas on roads and already-disturbed areas.		MN	On-going	1	8								
300	Fire Management	Fire 2.0	Fire Suppression.	Conduct wildfire suppression activities in ways that sustain ecosystem health and processes, and minimize impacts.	Fire 2.2	Prohibit bulldozer use within 100 feet of stream centers, in riparian areas. Avoid dropping retardant within 200 feet of any riparian areas.		MN	On-going		2								
301	Fire Management	Fire 2.0	Fire Suppression.	Conduct wildfire suppression activities in ways that sustain ecosystem health and processes, and minimize impacts.	Fire 2.3	Avoid bulldozer use within 100 feet of cultural resource sites, populations of listed plant species, and occupied Quino checkerspot butterfly habitat.		MN	On-going		2								
302	Fire Management	Fire 2.0	Fire Suppression.	Conduct wildfire suppression activities in ways that sustain ecosystem health and processes, and minimize impacts.	Fire 2.4	Coordinate fire suppression activities and cooperate with CDF and local fire districts (including the National Wildlife Refuge, BLM, and rural fire departments).		MN	On-going	1	2								
303	Fire Management	Fire 3.0	Post-fire Fire Management.	Conduct post-fire activities and erosion control to enhance natural plant recovery and succession, restore ecosystem health and processes, and minimize impacts.	Fire 3.1	Immediately after wildfire suppression activities, restore roads, fences, trails, and landscape contours to pre-fire conditions and mitigate for any damage (refer to Bio 1.2 and 1.4)		RE/MA	As-needed	2	8	24	24						
304	Fire Management	Fire 3.0	Post-fire Fire Management.	Conduct post-fire activities and erosion control to enhance natural plant recovery and succession, restore ecosystem health and processes, and minimize impacts.	Fire 3.2	Complete emergency watershed work as soon as possible and before the first heavy rainfall.		RE	As-needed	1	2	4		16					16

Appendix F Operations and Maintenance Requirements to Implement the HCWA LMP

Item No.	Element	Code	GOAL		Code	Task	Subtasks / Action Items	Management Type*	Schedule	Sr. Biology Super. (Wildlife)	Assoc. Biologist	Wildlife Biologist	Wildlife Habitat Super. I	Wildlife Habitat Assist.	Tractor Oper. Laborer	Fish & Wildlife Tech.	Fish & Wildlife Interpret / II	Scientific/Seasonal Aid
			Subject	Statement														
305	Fire Management	Fire 3.0	Post-fire Fire Management.	Conduct post-fire activities and erosion control to enhance natural plant recovery and succession, restore ecosystem health and processes, and minimize impacts.	Fire 3.3	Revegetate only in critical areas that are at risk for conversion to non-native habitats, or to reduce invasion of non-native, exotic plant species.		RE	As-needed	1	2							
306	Fire Management	Fire 3.0	Post-fire Fire Management.	Conduct post-fire activities and erosion control to enhance natural plant recovery and succession, restore ecosystem health and processes, and minimize impacts.	Fire 3.4	Repair culverts and stream crossings and restore drainage and road surfaces in areas damaged by firefighting activities and post-fire storm runoff.		RE/MA	As-needed	1	2	2	8		16			
307	Fire Management	Fire 3.0	Post-fire Fire Management.	Conduct post-fire activities and erosion control to enhance natural plant recovery and succession, restore ecosystem health and processes, and minimize impacts.	Fire 3.5	Monitor invasion of weeds in areas disturbed by fire activities and the effectiveness of erosion control methods, and take corrective actions as needed.		MO	As-needed		2	16						32
308																		
309	Management Coordination	Crd 1.0	Plan Revisions.	Collect and manage HCWA monitoring data in a manner that facilitates MSCP reporting and future LMP revisions.	Crd 1.1:	Standardize methods of data collection and data management.	a) Develop a protocol for data collection and data management, including geographic information system (GIS) data, to ensure consistency even if there is a personnel change in the Department.	D	One-time		24							
310	Management Coordination	Crd 1.0	Plan Revisions.	Collect and manage HCWA monitoring data in a manner that facilitates MSCP reporting and future LMP revisions.	Crd 1.1:	Standardize methods of data collection and data management.	b) Ensure that the protocol is consistent with the County's comprehensive MSCP database and reporting procedures.	D	One-time		24							
311	Management Coordination	Crd 1.0	Plan Revisions.	Collect and manage HCWA monitoring data in a manner that facilitates MSCP reporting and future LMP revisions.	Crd 1.2:	Prepare annual or semiannual status reports. Make data and reports available to CDFG and other agencies and possibly the public.		D	Annual	2	24							
312	Management Coordination	Crd 1.0	Plan Revisions.	Collect and manage HCWA monitoring data in a manner that facilitates MSCP reporting and future LMP revisions.	Crd 1.3:	Revise LMP every 5 years. Prepare appropriate CEQA documentation.		D	5 years	2	8							
313	Management Coordination	Crd 2.0	Regional Conservation Coordination.	Coordinate with all interested parties involved with conservation in the region to ensure consistency with regional planning efforts.	Crd 2.1:	Discuss conservation goals; threats; management, monitoring, restoration, and reintroduction; results of management tasks and scientific research; and potential future projects.	a) Meet with federal, state, and county agencies.	MN	On-going	16	16							
314	Management Coordination	Crd 2.0	Regional Conservation Coordination.	Coordinate with all interested parties involved with conservation in the region to ensure consistency with regional planning efforts.	Crd 2.1:	Discuss conservation goals; threats; management, monitoring, restoration, and reintroduction; results of management tasks and scientific research; and potential future projects.	b) Meet with NGOs.	MN	On-going	16	16							
315	Management Coordination	Crd 2.0	Regional Conservation Coordination.	Coordinate with all interested parties involved with conservation in the region to ensure consistency with regional planning efforts.	Crd 2.1:	Discuss conservation goals; threats; management, monitoring, restoration, and reintroduction; results of management tasks and scientific research; and potential future projects.	c) Meet with the scientific community and other land managers using adaptive management strategies.	MN	On-going	24	24							

Appendix F Operations and Maintenance Requirements to Implement the HCWA LMP

Item No.	Element	Code	GOAL		Code	Task	Subtasks / Action Items	Management Type*	Schedule	Sr. Biology Super. (Wildlife)	Assoc. Biologist	Wildlife Biologist	Wildlife Habitat Super. I	Wildlife Habitat Assist.	Tractor Oper. Laborer	Fish & Wildlife Tech.	Fish & Wildlife Interpret / II	Scientific/Seasonal Aid
			Subject	Statement														
316	Management Coordination	Crd 2.0	Regional Conservation Coordination.	Coordinate with all interested parties involved with conservation in the region to ensure consistency with regional planning efforts.	Crd 2.1:	Discuss conservation goals; threats; management, monitoring, restoration, and reintroduction; results of management tasks and scientific research; and potential future projects.	d) Meet with the public to provide them with an opportunity to ask questions and express concerns.	MN	On-going	24	24							
317	Management Coordination	Crd 2.0	Regional Conservation Coordination.	Coordinate with all interested parties involved with conservation in the region to ensure consistency with regional planning efforts.	Crd 2.2:	Coordinate with relevant regional plans, to ensure that management actions and reporting for HCWA are consistent.	a) Ensure consistency with South County MSCP subarea plan.	MN	On-going	2	8							
318	Management Coordination	Crd 2.0	Regional Conservation Coordination.	Coordinate with all interested parties involved with conservation in the region to ensure consistency with regional planning efforts.	Crd 2.2:	Coordinate with relevant regional plans, to ensure that management actions and reporting for HCWA are consistent.	b) Avoid conflicts with County of San Diego General Plan and Jamul/Dulzura Subregional Plan. Review and comment on proposed projects that may affect HCWA.	MN	On-going	2	8							
319	Management Coordination	Crd 2.0	Regional Conservation Coordination.	Coordinate with all interested parties involved with conservation in the region to ensure consistency with regional planning efforts.	Crd 2.2:	Coordinate with relevant regional plans, to ensure that management actions and reporting for HCWA are consistent.	c) Ensure that the County trails program and Jamul-Dulzura Community Trail and Pathway Plan are consistent with the goals of the LMP. Evaluate goals for trail placement as appropriate.	MN	On-going	2	16							
320	Management Coordination	Crd 2.0	Regional Conservation Coordination.	Coordinate with all interested parties involved with conservation in the region to ensure consistency with regional planning efforts.	Crd 2.2:	Coordinate with relevant regional plans, to ensure that management actions and reporting for HCWA are consistent.	d) Ensure that Otay River Watershed Management Plan (WMP) and Special Area Management Plan (SAMP) are consistent with goals of this LMP. Evaluate and implement watershed goals and policies as appropriate.	MN	On-going	1	8							
									Total Hours	503	2231	3084	1103	1912	980	1778	1032	6459
									No. of Personnel	0.26	1.16	1.61	0.57	1.00	0.51	0.93	0.54	4.31
									Grand Total Hours	19082								
									Grand Total No. of Personnel	10.88								

* D - Document, EN - Enhancement, LK - Linkage, MA - Maintenance, MN - Management, MO - Monitoring, OU - Outreach, RE - Restoration, SP - Special Project

Hollenbeck Canyon Wildlife Area Land Management Plan Mitigated Negative Declaration and Initial Study



Public Outreach Summary and Response to Public Comments

A Public Scoping meeting was held on June 28, 2006. Comments received were taken into consideration during development of the LMP. The Hollenbeck Canyon Wildlife Area (HCWA) Draft Land Management Plan and Mitigated Negative Declaration were released by the Department of Fish and Game (DFG) on October 10, 2006. The public review and comment period extended from October 12, 2006, to November 13, 2006. A Public Meeting was held on October 19, 2006 at the Rancho Jamul Ecological Reserve Conservation Education Center, Jamul, California. The Initial Study/Negative Declaration (ND) was posted at the Jamul Public Library, the DFG South Coast Regional Office and on the Department's internet web page at www.dfg.ca.gov. It was also circulated to the following public agencies for review: Resources Agency; Regional Water Quality Control Board, Region 9; Department of Parks and Recreation; Native American Heritage Commission; Office of Historic Preservation; Department of Forestry and Fire Protection; Department of Conservation; Caltrans, District 11; and the County of San Diego. Two public agencies responded with comments (Native American Heritage Commission and County of San Diego).

Individuals and/or interest groups, who commented on the Land Management Plan (LMP) and Negative Declaration (ND), along with the subject area of their comments, are listed in the attached table (Table A). Comments came in the form of mailed letters, e-mails, and verbal comments or submitted comment cards received at the October 19, 2006 Public Meeting.

The Department's Land Management Plan Team categorized the 7 comment letters/testimonies received into four subject areas. These include: Public Use (Hunting dog training, hunting dog training ponds, and public access); Construction issues, Native American Heritage issues and Inter-agency cooperation issues.

The Public Use Element in the Land Management Plan and Section II. Property Description, H. "Existing Public Use Features" discusses allowed public uses and associated wildlife area regulations. Through the Land Management Planning effort, the Department analyzed multiple aspects of various activities in determining whether or not a public use is compatible: including whether it is a wildlife-dependent activity, whether or not it is safe for all users, whether it benefits or impacts natural or cultural resources, and whether or not it increases management and/or maintenance costs on

the property.

Public Comments and DFG Responses:

1. Comments on Public Uses:

Seven specific uses were identified in the comments. Each use is separated out and responded to distinctly by DFG's Land Management Plan team.

A. Comments on Public Access:

1. Restrictions of use as set forth in the source of acquisition funding and the LMPs conformance to these restrictions should be set forth and discussed in these LMPs.

DFG Response:

The Department acknowledges and appreciates this comment. The acquisition was completed through funding provided by Proposition 12 (Safe Neighborhood Parks, Clean Water, Clean Air, and Coastal Protection (Villaraigos-Keeley Act) Bond Fund), and did not require use restrictions based on that source of funds. No change to the plan is required.

2. HCWA page 117: Avoid the use of barbed wire fencing, even when used to close trail segments. This is not a compatible use with trail users. DPR would advise placement of split-rail fencing or other method of blocking trail such as signage.

DFG Response:

The Department acknowledges and appreciates this comment. Although not specifically mentioned, barbed wire is not intended nor planned for use on the area. Most barbed wire fences are identified for removal or replacement to protect wildlife and allow better wildlife movement. Trails and access points will be fenced with other than barbed wire as funding allows.

3. This open space is one of the few trails open to horseback riding. It needs to continue to be available to the horse community.

DFG Response:

The Department acknowledges and appreciates this comment. The text of the LMP and Title 14 Regulations includes allowance for horseback riding at HCWA on designated trails. No change to the LMP will be made based on this comment.

B. Comments Regarding Hunting

1. Title 14 California Code of Regulations issues: Request to change the text of the LMP to refer to California Code of Regulations Title 14 rather than specifying months hunting dog training is allowed at HCWA in the event that Title 14 may be changed in the future; request to change the text of the LMP to refer to California Code of Regulations Title 14 rather than specifying birds allowed for hunting dog training. Allow all species to be hunted as allowed under current law and control under Regional Manager Authority. Modify Title 14 to allow hunting of any/all species on any/all lands purchased where Public Use is, or was, one of the purposes of acquisition or management.

DFG Response:

General Title 14 public use regulations (including hunting regulations) are site specific in response to conditions and situations unique to each site, both for Ecological Reserves (ER) and Wildlife Areas (WA) throughout the state. This is the purpose for Title 14, Sections 550, 551 for WAs and Section 630 for ERs. The purpose of acquisition is included in the Land Management Plan (LMP) and is the premise establishing allowable uses in the LMP and Title 14 regulations.

Not every site is conducive to hunting of all legal species, nor is every site conducive to equestrian use, bicycles, boating, etc. Each site is evaluated to a limited extent prior to acquisition, and then assessed again once escrow closes. Evaluations occur again during the Land Management Plan process and during

regular Title 14 regulation cycles. Both the LMP and Title 14 have adaptive management aspects, meaning that they can be modified based on changing conditions or in response to new knowledge or information.

The LMP effort generally includes a biological component (habitat assessment and some focal species surveys) to help determine appropriate uses and designated areas for those. Site evaluations also include measures needed to protect habitat, site security issues, management needs, monitoring needs, staffing and available funding resources, goals for site usage to retain a quality wildlife experience, and public access and health and safety issues.

The Department has assessed the local conditions on the wildlife area and determined that potential impacts could be more easily avoided if area specific regulations were adopted at HCWA. The Department developed the regulations for HCWA to protect existing populations of native species and to be consistent with the “no non-native species introduction policy” on the adjacent Rancho Jamul Ecological Reserve (RJER).

Current restrictions on various bird species reduces the potential impacts associated with the introduction of breeding population of non native species onto the wildlife area and will be retained. Seasonal restrictions on hunting dog training avoids impacting ground nesting birds found in the hunting dog training areas and will be retained. In addition, California Code of Regulations Title 14 supercedes the authority of the LMP. If Title 14 is changed in the future, those future regulations would apply to HCWA. The LMP will be subsequently updated to reflect any future specific regulations that apply to HCWA, such as allowable dates of hunting dog training. The LMP has been changed to outline this process and authority. The Regional Manager has the authority to make further restrictions regarding hunting on the wildlife area to protect wildlife and habitat on the wildlife area.

2. Explain how hunters (shotgun blasts) and hunting dogs off-leash during hunting season will have no affect on wildlife and plant life when they track off-trail.

DFG Response:

The Department acknowledges and appreciates this comment. Allowed uses are not based on a no effect determination, but on a less than significant effect determination. Hunting occurs outside of the breeding and nesting seasons of sensitive animal species, and the impacts to wildlife and habitat are minimal, as identified in the Department's Environmental Documents on hunting (California Department of Fish & Game (CDFG). 2004c. Resident Game Bird Hunting Final Environmental Document. Calif. Dept. Fish and Game. 182 pp. and 2004b Resident Small Game Mammal Hunting Final Environmental Document. The Resources Agency, Department of Fish and Game. 139 pp.).

3. Add hunting for coyotes, squirrels, crows, and deer. Expand upland game bird hunting in HCWA AND RJER. Use hunting as a management tool.

DFG Response:

The Department acknowledges and appreciates this comment. The LMP has been changed to include coyotes and crows in the list of huntable species. The Department believes that the squirrel population is currently too low to provide a sustainable hunt. Population surveys for deer will be conducted to determine if there is a sufficient population that would allow for a sustainable hunting population. Should future Department evaluations show that the squirrel population has increased and reached sustainable levels, and/or if deer are present in sufficient numbers, either or both species could be added to Title 14 and a revised LMP in the future. Opportunities to harvest additional species will be assessed as population information is updated, potential safety issues are resolved and habitat quality allows.

One of the initial purposes of the acquisition of HCWA was to provide additional hunting opportunities. Should the possibility to expand hunting arise in the future, considering a balance of all goals and uses, the Department will work to provide additional hunting opportunities. RJER was acquired mainly to provide for habitat restoration however hunting is allowed on a more limited basis there

than at HCWA. Hunting may be used as a management tool should population levels of species become excessive, however hunting is currently regulated to prevent over harvest rather than to cull populations.

4. Request to keep HCWA open to equestrian use, hiking, and mountain biking but close it to hunting.; close Hollenbeck to hunting except for special events

DFG Response:

The Department acknowledges this comment. DFG intends to continue to provide opportunities for hunting and hunting dog training within HCWA. One of the initial purposes of the acquisition of HCWA was to provide additional hunting opportunities. DFG also intends to continue to provide multiple wildlife-dependent recreational opportunities including wildlife viewing while hiking, horseback riding, or mountain bike riding within HCWA. Wildlife viewing is a wildlife dependent activity, whereas the act of riding a bike or a horse is not always for the purpose of viewing wildlife. The Department will monitor these and all activities to ensure maximum compatibility with our LMP goals and objectives. Most of these existing authorized uses, including hunting, were already taking place on the land prior to the State's ownership and the Department's management of HCWA.

5. Concern regarding potential injuries to horses and non-hunting users due to gun accidents.

DFG Response:

The Department acknowledges and appreciates this comment. The LMP includes safety goals and signage goals to communicate with visitors to identify hunting seasons and regarding potential risks. During implementation of the LMP, entrance signs will be posted to advise all visitors that they enter at their own risk and to be cautious and alert due to the many potential hazards within HCWA. All hunters are required to carry proper licenses and stamps appropriate to their hunting activities. Hunters are expected to hunt ethically, carefully and follow all restrictions and regulations. The Department has not received any

complaints or reports of gun accidents or illegal behavior by hunters within the HCWA. If illegal or careless hunting behavior is taking place, please report it immediately to the Caltip hotline 1-888-DFG-CALTIP or 1-888-334-2258.

C. Comments Regarding Hunting Dog Training and Training Areas:

1. Request to edit MND/IS regarding control of dogs. Commenter would like DFG to add “whistle and/or hand signal” to voice command.

DFG Response:

The Department acknowledges and appreciates this comment. The Department has determined the existing regulation is adequate.

2. Comments related to dog training: Request to add the word “hunting” before each occurrence of the word “dog.”

DFG Response:

The Department acknowledges and appreciates this comment. The text of the MND/IS has been modified to indicate that wherever hunting dog training facilities or activities are referenced, the word “hunting” has been inserted. Page 35 of the LMP has been modified to indicate that “dog training” refers to “hunting dog training”

3. Comments related to ponds: Request to edit the MND/IS to identify multiple stock ponds. Revise goals to include development of more than one training pond and that pond size be a minimum of one acre and up to two acres. Request that 5 ponds be restored and new ponds developed, and that a third hunting dog training area be developed for water training.

DFG Response:

The Department acknowledges and appreciates these comments. The LMP (pg. 100, 112, 123, 137, 143, Appendix F) and MND/IS (pg. 2, 6, 29, 40) have been modified to reflect the existence of several dry ponds and provides the possibility for one or more to be restored for hunting dog training opportunities. The revised

text states that habitat evaluations and an environmental review will be completed prior to the restoration of other abandoned ponds. The Department does not intend to enlarge the existing dry ponds at this time; however the one to two acre size preference by hunting dog trainers will be taken into account when decisions about the ponds are made.

4. Comment requests the development of hunting dog training fields adjacent to proposed training ponds listed in LMP goals. Request to show hunting dog training area on Figure 4.

DFG Response:

The Department acknowledges and appreciates these comments. Figure 4 in the MND/IS and figure 11 in the LMP have been modified to show the general location of the additional proposed hunting dog training area adjacent to the proposed training ponds. The area will be further defined as part of the specific project plan for the dog training area.

5. Mitigate loss of access to training ponds if future negative impact on MSCP species occurs.

DFG Response:

The Department acknowledges and appreciates this comment. Under CEQA, no mitigation for loss of access to training ponds is required. While DFG intends to work with hunting dog trainers to provide land and water areas for hunting dog training (see also response to Comments 1.B.2 and 1.B.3), the Department is not under legal obligation to provide access to training ponds as compared with legal requirements under the Endangered Species Act, for example. No change to the LMP will be made based on this comment.

6. Request to move dog training to Rancho Jamul Ecological Reserve.

DFG Response:

The Department has allowed special event hunting dog training in the past at

RJER, and may allow special events in the future, however the greater public access at HCWA provides a better opportunity for hunting dog training and is appropriate for the purpose for which the wildlife area was established.

7. Field Trial issues: Request to remove categorical exclusion of field trials, dog trials should be allowed with Department approval.

DFG Response:

The Department acknowledges and appreciates these comments. The Department has determined that the activity is not wildlife dependent. In addition, the potential effects of dog trials would likely constitute a “project” and therefore require full CEQA review of the activity. Therefore we cannot allow this use at this time.

8. Request to remove reference to hunting license for dog training.

DFG Response:

The Department acknowledges and appreciates this comment. Visitors using live birds or shotguns with hunting licenses are permitted to train hunting dogs in designated areas from September through February. Those training hunting dogs without using live birds or shotguns are not required to carry a hunting license. Text of the LMP has been modified to reflect this clarification.

2. Construction Issues

A. Comment Regarding Lack of Specific Information Concerning Direct and Indirect Impacts of the Proposed Construction Projects.

1. Conclusions that impacts are less than significant when mitigation is incorporated cannot be supported.

DFG Response:

The Department respectfully disagrees with this comment. The LMP was

prepared as a guide for the California Department of Fish and Game in the management, maintenance, and restoration of biological resources in the HCWA. As a “guidance” document, the LMP identifies management goals the Department will implement in the future. Future construction projects identified in the LMP are listed on page 2 of the MND/IS. They are:

- Create a pond for hunting dog training by augmenting normal rainfall by pumping well water into an abandoned approximately 0.4-acre stock pond near the former Honey Springs Ranch home site. As restoration of other abandoned stock ponds is pursued, an evaluation of the habitat in the surrounding area will be conducted and the restoration will be subject to environmental review pursuant to CEQA.
- Install approximately 2,300 feet of 2-inch water line from the nearest well to serve the former stock pond.
- Create a new approximately 1-acre unpaved parking area in a disturbed area near the former Honey Springs Ranch home site. Install a vehicle gate and horse gate near the new parking lot to provide additional access along an existing road to the neighboring hunting dog training pond and trails in this area. Authorized members of the Public will be provided an entry code to access the pond for hunting dog training.
- Install a horse gate in the northern boundary fence where a trail enters the site.

The identification of direct and indirect impacts in the MND/IS was based on the available information about construction activities contained in the LMP. The hunting dog pond is an existing structure located in a disturbed area, and the adjacent unpaved parking area is also within a disturbed area. The water line to serve the pond will be installed within an existing roadbed. The horse gate will be located in chamise chaparral habitat. No threatened or endangered species are located in these areas. The preparation of design level plans for each of the construction projects will include site specific impact analysis and mitigation measures if determined necessary.

Pages 31-38 of the MND/IS, include biological and cultural mitigation measures

that would reduce potential impacts to a less than significant level. These measures specify that biological and cultural resource surveys be conducted for construction related projects, implementation of Best Management Practices, restoration of disturbed habitat, performing construction during non-breeding seasons of sensitive species, and placing new facilities in disturbed habitat whenever possible. The Department believes that these mitigation measures are sufficient to insure that any impacts that may be associated with the construction projects will be reduced to a less than significant level. Nevertheless, subsequent environmental review will be conducted for specific construction projects at the time they are designed. If it is found that these mitigation measures are not adequate to address potential impacts of the proposed project, additional measures will be incorporated to eliminate or reduce the impacts to a less than significant level.

B. Comments regarding construction specifics

1. MND/IS lacks specific information regarding the qualitative and quantitative direct and indirect impacts of the proposed construction projects on the property. Without this information, the conclusion that impacts are less than significant when mitigation is incorporated cannot be supported.

DFG Response:

Please see response to Comment 2.A.1.

2. General Aesthetic Issues including: elimination of portable toilets from Rancho Jamul Road parking area, replace existing fencing with similar new fencing, paint buildings using surrounding area colors, build ranch style facilities, signs should be of fitting style and color, no additional lighting, low-sodium lights for construction, and leave parking lots unpaved.

DFG response:

The Department considers all of these recommendations to be reasonable and will refer to them in planning maintenance and capital outlay projects. Portable toilets will not be regularly placed at the HCWA's Rancho Jamul Road parking area, but may be placed during special events and removed afterwards.

3. Native American Heritage Issues

A. Comments regarding Native American Historical Commission issues

1. Contact the appropriate California Historic Resources Information Center (CHRIS). The record search will determine:
 - a. If a part of the entire APE has been previously surveyed for cultural resources.
 - b. If any known cultural resources have already been recorded in or adjacent to the APE.
 - c. If the probability is low, moderate, or high that cultural resources are located in the APE.
 - d. If a survey is required to determine whether previously unrecorded cultural resources are present.

DFG Response:

The Department acknowledges and appreciates this comment. The Department contracted with a qualified archaeologist, Dr. Susan Hector, for the preparation of the Hollenbeck Canyon Wildlife Area Archaeological Management Section of the LMP. In addition, A Record Search was obtained from the South Coastal Information Center as part of that effort. Numerous cultural sites are identified on the property and will be avoided during construction activities. The projects identified in the LMP are all in previously surveyed areas and it is not anticipated that they will have any significant impacts on cultural resources. Any future proposed projects in areas not previously surveyed will require a full cultural investigation and an impact analysis under CEQA.

2. If an 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.

- a. The final report containing site forms, site significance, and mitigation measures 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 public disclosure.

DFG Response:

The Department acknowledges and appreciates this comment. All sites have previously been recorded and information properly kept in confidential addendums, and will not be available for public disclosure.

3. Contact the Native American Heritage Commission (NAHC) for:
 - a. A Sacred Lands File (SLF) search of the project area and information on tribal contacts in the project vicinity that may have additional cultural resource information. Please provide this office with the following citation format to assist with the Sacred Lands File search request: USGS 75 minute quadrangle citation with name, township, range and section;
 - b. The NAHC advises the use of Native American Monitors to ensure proper identification and care given cultural resources that may be discovered. The NAHC recommends that contact be made with Native American Contacts on the attached list to get their input on potential project impacts, particularly the contacts on the list.

DFG Response:

The Department acknowledges and appreciates this comment. EDAW Consulting contacted NAHC and received a reply from Carol Gaubatz of NAHC that a significant cultural sacred site was listed for the area and provided a listing of Native American contacts who may have knowledge of sites. EDAW contacted those listed by mail and phone to request comments or concerns

about the project and received replies indicating there were no significant issues with the project.

4. Lack of surface evidence of archeological resources does not preclude their subsurface existence.
 - a. Lead agencies should include in their mitigation plan provisions for the identification and evaluation accidentally discovered archeological resources, per California Environmental Quality Act (CEQA) §15064.5(f). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American, with knowledge in cultural resources, should monitor all ground-disturbing activities.
 - b. Lead agencies should include in their mitigation plan, provisions for the disposition of recovered artifacts, in consultation with culturally affiliated Native Americans.

DFG Response:

The Department acknowledges and appreciates this comment. The Department has included such provisions in the plan. Please see page 37 of the MND/IS and pages 33-35 and 126-135 of the LMP.

5. Lead agencies should include provisions for discovery of Native American human remains or unmarked cemeteries in their mitigation plans.
 - a. CEQA Guidelines, Section 15064.5(d) requires the lead agency to work with the Native Americans identified by this Commission if the initial Study identifies the presence or likely presence of Native American human remains within the APE. CEQA Guidelines provide for agreements with Native American, identified by the NAHC, to assure the appropriate and dignified treatment of Native American human remains and any associated grave liens.
 - b. Health and Safety Code §7050.5, Public Resource Code §5097.98 and §15064.5(d) of the CEQA Guidelines mandate procedures to be followed in the event of an accidental discovery of any human remains

in a location other than a dedicated cemetery.

DFG Response:

The Department acknowledges and appreciates this comment. No likelihood of presence of Native American human remains was identified within the Project Area. The Department has included provisions in the plan in case any are incidentally discovered in the future.

6. Lead agencies should consider avoidance, as defined in §15370 of the CEQA Guidelines, when significant cultural resources are discovered during the course of project planning.

DFG Response:

The Department has included such provisions in the plan.

4. Comments on Interagency and Non-Government Organization Cooperation

A. Comments regarding interagency cooperation issues:

1. Inter-jurisdictional cooperation and coordination is essential so that the San Diego County Department of Parks and Recreation (DPR) and DFG can resolve the conflicts that are created between the County Trails Program and the LMPs. DPR and DFG staff should meet to resolve these issues.

DFG Response:

The Department acknowledges and appreciates this comment. The MND/IS identifies the inconsistency of trails and includes a mitigation measure (see Land Use and Planning discussion page 42). The Department will continue ongoing discussions with the County of San Diego on trail issues.

2. The LMP states that it is consistent with the County of San Diego MSCP. However, it fails to include the fact that MSCP allows for passive recreation, specifically multi-use trails. In addition, hunting is not a

compatible use on County of San Diego MSCP Preserve lands.

DFG Response:

The Department acknowledges this comment. The Department indicated on page 6 of the MND/IS that the purchase of the property was evidence of our commitment to NCCP planning efforts and noted that the property was located within the MSCP planning area. However, this property is not managed under the Framework Management Plan for Preserve lands. The Framework Management Plan only pertains to those lands listed under section 10.9 of the MSCP implementing agreement, which are owned by the County and identified as areas to be preserved, or lands acquired as mitigation pursuant to the MSCP. HCWA is not included in this list of lands. Hunting has been determined by the Department to be a compatible, wildlife-dependent activity at HCWA.

3. County Department of Parks and Recreation (County DPR) is working with California State Parks on rerouting significant sections of the California Riding and Hiking Trail. This reroute is vital to County's regional trail system and is necessary to ensure public safety. Both RJER and Hollenbeck Canyon have significant sections of the trail. Sections along Otoy Lakes Road and Highway 94 must be rerouted and RJER can easily provide the reroutes utilizing existing ranch roads and trails.

DFG Response:

Please see response to comment 4.A.1.

4. DFG should coordinate with County DPR staff on monitoring for Quino checkerspot butterfly to avoid duplication of effort.

DFG Response:

The Department is certainly willing to work with County staff to monitor sensitive species and avoid duplication of effort. Avoidance of duplication of effort is assured, however, by the fact that County DPR staff or contractors must obtain permission to survey Quino checkerspot butterflies on DFG lands. Such surveys would fall outside of normal public activities permitted on the area, and thus

requires special authorization.

B. Comments regarding coordination with Non-Governmental Organizations (NGOs)

1. Request to include San Diego County Wildlife Federation as one of the example NGO's (LMP page 146).

DFG Response:

The Department acknowledges and appreciates this comment. The LMP has been changed to include the San Diego County Wildlife Federation as an example NGO.

2. Establish point of contact with Rancho Jamul Estates – send notices of scheduled hunting days

DFG response:

The Department will include Rancho Jamul Estates on all lists of NGOs developed for public notifications. We will also post general hunting schedule periods at all access points into the wildlife area and provide a copy of the notices to the entrance kiosk at Rancho Jamul Estates.

5. General Comments on the LMP

- A. Figure 14 of HCWA LMP lacks sufficient detail to be informational for reader.

DFG Response:

The Department acknowledges and appreciates this comment. The purpose of the figure was to show that there were a number of sensitive species occurring on the property and provide their general distribution in the planning area at the time the plan was prepared. The Department believes that the detail provided was sufficient to convey this information.

B. Discuss how planting non-native plants such as cereal grass and safflower to attract game species such as dove and quail is compatible with the MSCP Subarea Plan, specifically Land Uses Allowed within the Preserve (Section 1.9) and the MSCP Framework Management Plan.

DFG Response:

This property is not managed under the Framework Management Plan. Please see response to Comment 4.A.2.

C. HCWA LMP Bio 2.2.3a: Text should refer to MSCP Framework Management Plan and MSCP Monitoring Protocols and acknowledge that afore-mentioned monitoring protocols are currently being updated.

DFG Response:

Please see Comments 4.A.2. However, the monitoring protocols used at HCWA will follow the most recent adopted protocols for the targeted species by regulatory agencies or by the MSCP, whichever is appropriate.

D. Eliminate illegal alien traffic.

DFG Response:

The Department acknowledges and appreciates this comment. The Department opposes any illegal activity on State land and has included in the LMP goals, continued coordination with Homeland Security – Border Patrol. No change to the LMP will be made based on this comment.

E. Concern about HCWA being entered by off-road vehicles.

DFG Response:

The Department prohibits off-road vehicles within HCWA. Violations have taken place and some entrances have been modified to prevent entrance by off-road vehicles. Violators can be prosecuted to the extent of the law if apprehended. Areas that have been disturbed are intended to be restored. This issue has been addressed under Public Use Element Goals (Pub 1.11) therefore; no change to

the LMP will be made based on this comment.

F. Request to provide a no-hunting buffer zone around Rancho Jamul Estates.

DFG Response:

A no hunting zone (LMP Figure 11) currently serves as a buffer around the Rancho Jamul Estates, and hunters are legally required to remain 150 yards away from occupied dwellings while hunting. If hunters are coming too close to the homes, the Department should be notified at 1 888 DFG-CalTIP.

Additionally, the Department will work with homeowners or the association to place signs to assist in informing hunters of the buffer if existing signage is insufficient.

LIST OF PERSONS, ORGANIZATIONS, AND PUBLIC AGENCIES THAT COMMENTED ON THE DRAFT MND/IS

FEDERAL AGENCIES:

None

STATE AGENCIES:

Native American Heritage Commission

COUNTY, CITY, AND OTHER LOCAL AGENCIES:

County of San Diego, Department of Parks and Recreation

ORGANIZATIONS:

San Diego Retriever and Field Trial Club, Inc.

San Diego Hunting Retriever Club, Inc.

North American Versatile Hunting Dog Association

San Diego County Wildlife Federation

INDIVIDUALS:

Peter Shenas

Robert Hobbs

Robert Pianavilla

Nancy Owens

Howard Whitfield

Veronica Hoban

Table A. Summary of Comments
Hollenbeck Canyon Wildlife Area – Land Management Plan and Mitigated Negative Declaration

#	LMP (Pg)	MND (Pg)	Comment	County of San Diego	Native American Heritage Commission	San Diego Retriever (Erwin)	San Diego Retriever (Stewart)	N. Amer Hunt Dog Assoc (Smith)	SDC Wildlife Federation	Hobbs	Whitfield	Hoban	Pianavilla	Owens	Shenas
1.A.1	156		Uses restricted by funding source	X											
1.A.2		29	Avoid barbed wire fencing	X											
1.A.3	148	41	Conflict with Community Trails Plan	X											
1.B.1	43	8	Change dog training period from Sept-Feb to Title 14 regs			X		X							
1.B.1	38, 43	8	Change regs to allow use of other game bird species for dog training			X		X							
1.B.1	38	7	Change Title 14 to allow hunting of any/all species as allowed under current law. Control through Regional Manager authority						X						
1.B.2		34	Explain how hunting and dogs off leash have no affect on wildlife	X								X			
1.B.3	40	7	Add hunting for coyotes, squirrels, crows, deer							X					
1.B.3	38, 121	7	Expand upland game bird hunting in HCWA & RJER										X		
1.B.3	121	7	Hunting as a management tool						X						
1.B.4		7	Close HCWA hunting								X				
1.B.4	44, 124	7	Close HCWA to hunting except for special events									X			

Table A. Summary of Comments
Hollenbeck Canyon Wildlife Area – Land Management Plan and Mitigated Negative Declaration

#	LMP (Pg)	MND (Pg)	Comment	County of San Diego	Native American Heritage Commission	San Diego Retriever (Erwin)	San Diego Retriever (Stewart)	N. Amer Hunt Dog Assoc (Smith)	SDC Wildlife Federation	Hobbs	Whitfield	Hoban	Pianavilla	Owens	Shenas
1.B.4	9, 37, 38, 39, 41, 44	2, 8	Allow equestrian, hiking, biking in HCWA								X				
1.B.4	120, 122, 132	8	Maintain horse trails											X	
1.B.5	37, 119, 121, Append. F.14	7	Concern about hunting gun accidents												
1.C.1	43	5	Add “whistle and/or hand signal” to voice command			X			X						
1.C.2	9, 28, 35, 36, 43 122, 123,	2, 8, 30, 33, 34, 40	Add “hunting” when the word “dog” appears			X			X						
1.C.3	100, 112, 123, 137, 143	2,6,40	Reword to address multiple ponds			X	X		X						
1.C.3	100, 112, 123, 137, 143	2, 6, 40	Repair a minimum of 5 dry ponds are located near old homes north of honey Springs Rd. and develop new ponds in this area			X	X	X	X						
1.C.3	100, 112, 123, 137, 143	2, 8, 30, 33, 34, 40	Support existing dog training, request third area to be developed for water training.				X								
1.C.3	100, 112, 123, 137, 143	40	Improve conditions for all animals – fill ponds, guzzlers, feed plots										X		
1.C.4	123	Fig. 4	Provide dog field work area adjacent to ponds					X							
1.C.4	Fig 11	Fig. 4	Show dog training area contiguous to training ponds			X		X							
1.C.5			Mitigate loss of access to training ponds if future negative impact on MSCP species occurs			X	X		X						
1.C.6			Request to move dog training to								X				

Table A. Summary of Comments

Hollenbeck Canyon Wildlife Area – Land Management Plan and Mitigated Negative Declaration

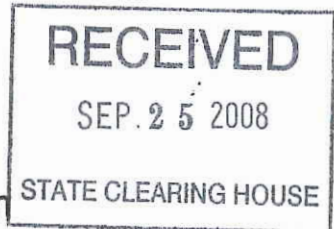
#	LMP (Pg)	MND (Pg)	Comment	County of San Diego	Native American Heritage Commission	San Diego Retriever (Erwin)	San Diego Retriever (Stewart)	N. Amer Hunt Dog Assoc (Smith)	SDC Wildlife Federation	Hobbs	Whitfield	Hoban	Pianavilla	Owens	Shenas
			RJER												
1.C.7	37, 43	8	Remove categorical exclusion of field trials			X			X						
1.C.7	37, 43	8	Dog trials to be allowed with Dept. approval			X		X	X						
1.C.8	43		Remove reference to hunting license for dog training			X									
2.A.1			MND lacking information	X											
2.A.1			Conclusions of no significant impacts cannot be supported	X											
2.B.2		29	No port-a-potties at entrance to Rancho Jamul Estates or near Hwy 94												X
2.B.2	135, 136	29	New fencing similar existing fencing												X
2.B.2	135	29	Paint buildings using surrounding area colors												X
2.B.2	135	29	Build ranch style facilities												X
2.B.2	135	29	Signage should be of fitting style and color												X
2.B.2	110, 211	29	No additional lighting												X
2.B.2	110	29	Low-sodium lights for construction												X
2.B.2	9, 136	2, 4, 6, 29	Leave parking lot unpaved												X
3.A.1	134	37	California Historic Resources Information System		X										
3.A.2	135	36	Archaeological Inventory Survey		X										
3.A.3	133	37	Native American Heritage Commission notification		X										

Table A. Summary of Comments

Hollenbeck Canyon Wildlife Area – Land Management Plan and Mitigated Negative Declaration

#	LMP (Pg)	MND (Pg)	Comment	County of San Diego	Native American Heritage Commission	San Diego Retriever (Erwin)	San Diego Retriever (Stewart)	N. Amer Hunt Dog Assoc (Smith)	SDC Wildlife Federation	Hobbs	Whitfield	Hoban	Pianavilla	Owens	Shenas
3.A.4	37, 130, Appendix E	36	Subsurface existence of artifacts		X										
3.A.5	130, Appendix E	36	Provisions for discovery of human remains or graves		X										
3.A.6	130, Appendix E	36	Consideration of avoidance techniques		X										
4.A.1	185, 186		Interagency cooperation	X											
4.A.2	11	41, 43	MSCP consistency	X											
4.A.3	42	8	California Hiking and Riding Trail	X											
4.A.4	138		Coordinate monitoring efforts	X											
4.B.1	147		Add SDCWF to NGOs			X									
4.B.2	Append. F.14, F.17		Publicize hunt periods Allow hunting in RJER									X			
4.B.2	124, Append. F.17		Establish point of contact with Rancho Jamul Estates – send notices of scheduled hunting days												X
5.A			Figure 14 lacks sufficient detail to be informational to reader	X											
5.B	80		Planting of non-native plants compatibility with MSCP	X											
5.C	139, 164		MSCP Framework Management Plan and MSCP Monitoring Protocols	X											
5.D	95		Eliminate illegal alien traffic										X		
5.E	95, 108, 136		Concern about off road vehicles									X			X
5.F	45, Figure 11	7	Provide No Hunting Buffer Zone around Rancho Jamul Estates												X

**State of California
DEPARTMENT OF FISH AND GAME
Land Management and Monitoring Program
South Coast Region**



FINAL MITIGATED NEGATIVE DECLARATION

Project: Land Management Plan for the Hollenbeck Canyon Wildlife Area

Lead Agency: California Department of Fish and Game

Availability of Documents: The Final Mitigated Negative Declaration and Initial Study Checklist are available for public review at:

- California Department of Fish and Game
4949 Viewridge Avenue
San Diego, CA 92123
- San Diego County Library
Rancho San Diego Branch
11555 Via Rancho San Diego
El Cajon, CA 92019
- California Department of Fish and Game website
<http://www.dfg.ca.gov/news/pubnotice/>

PROJECT DESCRIPTION:

The proposed project is the approval and implementation of an initial Hollenbeck Canyon Wildlife Area (HCWA) Land Management Plan (LMP). The HCWA provides habitat for "special status" species, game species and other native species.

Maintenance activities included in the LMP are:

- Removal of eucalyptus trees from the central segment of Jamul Creek and from the unnamed tributary near the former Honey Springs Ranch home site.
- Restoration of approximately 900 feet of an unnamed tributary to Hollenbeck Canyon where erosion has created a gully approximately 30 feet deep.
- Restoration of old dirt roads and single-track trails designated for closure.
- Actively manage up to 100 acres of non-native grassland in the western portion of HCWA for conversion to native grassland. Management may include experimental designs using a combination of grazing, controlled burns, thatch removal, seeding, or other techniques.
- Continued maintenance of selected non-native grassland areas by sowing cereal wheat to attract doves for hunting.
- Maintenance of existing trails, gates, parking areas, and hunting dog training areas.
- The monitoring of plant and animal populations, public use, and related scientific research.

Construction activities included in the LMP are:

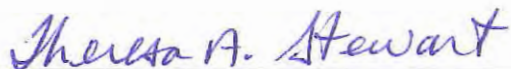
- Create ponds for hunting dog training by repairing, enhancing and filling abandoned stock ponds near the former Honey Springs Ranch home site.
- Install approximately 2,300 feet of 2-inch water line from the nearest well to serve the former stock ponds.
- Create a new approximately 1-acre unpaved parking area in a disturbed area near the former Honey Springs Ranch home site. Install a vehicle gate and horse gate near the new parking lot to provide additional access along an existing road to the neighboring hunting dog training ponds and trails in this area. A combination lock will allow access by members of the public authorized to use the ponds for hunting dog training.
- Install a horse gate in the northern boundary fence where a trail enters the site.

The ongoing operation of the HCWA includes the public uses incorporated in the LMP. Public uses that would be permitted under the LMP include hunting, hiking and equestrian trails, mountain biking, environmental education, and hunting dog training.

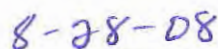
A copy of the Initial Study is attached. Questions or comments regarding this Initial Study/Mitigated Negative Declaration should be submitted in writing to:

Karen L. Miner, Senior Environmental Scientist
Lands Program Supervisor
California Department of Fish and Game
4949 Viewridge Avenue
San Diego, CA 92123
(858) 627-3939

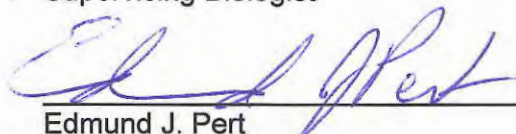
Pursuant to Section 21082.1 of the California Environmental Quality Act, the California Department of Fish and Game (DFG) has independently reviewed and analyzed the Initial Study and Negative Declaration for the proposed project and finds that these documents reflect the independent judgment of DFG. DFG, as lead agency, also confirms that the project mitigation measures detailed in these documents are feasible and will be implemented as stated in the Mitigated Negative Declaration and Initial Study.



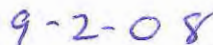
Theresa A. Stewart
Supervising Biologist



Date



Edmund J. Pert
Regional Manager



Date

ENVIRONMENTAL CHECKLIST

The Hollenbeck Canyon Wildlife Area (HCWA) Land Management Plan (LMP) is a project as defined by the California Environmental Quality Act (CEQA) that requires environmental analysis. This Environmental Checklist has been prepared by the California Department of Fish and Game (Department) in conformance with the requirements of the State CEQA Guidelines.

The Department conducted a public meeting on June 28, 2006 to initiate the planning process with the public and receive comments from interested parties. Approximately 55 people attended the meeting which was held at Department headquarters facilities at the neighboring Rancho Jamul Ecological Reserve (RJER). Several persons presented verbal comments, and 11 written comments were received. The comments generally addressed the issues of hunting, public access, upstream water sources, relationship to the County of San Diego Multiple Species Conservation Program (MSCP), wildlife linkages, access for disabled persons, source of funds used to purchase the property, current and future use of all-terrain vehicles, coordination with County of San Diego Trails Master Plan, and compatibility of passive management with active uses. The issues raised have been addressed in the LMP and in this Environmental Checklist analysis. Table 1 provides the page numbers where these issues are addressed in the LMP and the Environmental Checklist. Copies of the letters received and a transcript of the public comments are available at the Department's offices at 4949 Viewridge Avenue, San Diego, CA 92123.

Table 1

Topic	LMP	Environmental Checklist
Public Access	148, 156	2, 4-6, 24-26
Hunting	35, 37-41, 43, 54, 80, 103, 104, 115-125, 143	3, 6-8
Hunting Dog Training	9, 28, 35, 43, 44	6, 8, 30, 36, 40
relationship to the County of San Diego Multiple Species Conservation Program (MSCP)	4-6, 64, 67, 74, 86-92, 111, 112, 117, 125, 140	3, 32-34, 41, 43
wildlife linkages	4, 9, 85-88, 93, 117	3, 5, 33, 34, 39, 42
access for disabled persons	118	-
current and future use of all-terrain vehicles	36-37, 42-43, 92	-
coordination with the County of San Diego Trails Master Plan	148	3, 35, 44
compatibility of passive management with active uses	35, 120	3, 36, 42

Environmental Checklist Form

1. **Project Title:** Land Management Plan for the Hollenbeck Canyon Wildlife Area

2. **Lead agency name and address:**

California Department of Fish and Game
4949 Viewridge Avenue
San Diego, CA 92123

3. **Contact person and phone number:**

Karen L. Miner, Senior Environmental Scientist
Lands Program Supervisor
(858) 627-3939

4. **Project location:**

The 5,189-acre HCWA is located within the County of San Diego Jamul/Dulzura Subregional Plan area. The Jamul/Dulzura Subregion covers an area of approximately 168 square miles located south of Loveland Reservoir and the Sweetwater River, north of the Mexican border, and southeast of the cities of La Mesa and El Cajon, and the unincorporated Rancho San Diego community.

HCWA is immediately adjacent to State Route (SR) 94 and the RJER. The community of Jamul is to the northwest and the community of Dulzura is to the southeast (see Figure 1). The HCWA site takes its name from Hollenbeck Canyon that traverses the center of the site (see Figure 2). The aerial photograph (Figure 3) illustrates the physical features of the site and surrounding land uses. This figure also illustrates the 3,210-acre "original acquisition area" acquired in 2001 and the 1,979-acre "Honey Springs Ranch Acquisition Area" that was acquired in 2003.

Although SR 94 borders the entire southwestern boundary of the wildlife area, there is no public access into the property from this major roadway. Access into the northern portion of the wildlife area is from Rancho Jamul Drive, which traverses the northern end of the property. Limited parking along the shoulder of Rancho Jamul Drive, and a small parking lot near SR 94 is used for special events. Toward the southern portion of the property, a gravel public parking lot is located immediately north of Honey Springs Road, approximately 500 feet east of SR 94. Parking for cars and horse trailers is available in this lot.

5. **Project sponsor's name and address:**

California Department of Fish and Game
4949 Viewridge Avenue
San Diego, CA 92123

6. **General plan designation:**

County of San Diego: General
Agriculture and Specific Plan Area

7. **Zoning:**

County of San Diego
General Agriculture (A-72)
Specific Planning Area (S-88)
Rural Residential (RR)

8. **Description of project:**

The proposed project is the approval and implementation of an initial HCWA LMP. The HCWA provides habitat for “special status” species, game species and other native species. The Department has managed the HCWA to protect wildlife and habitat since 2001 and allowable on-site uses are wildlife-dependent and compatible with the mission of a Wildlife Area. Uses that are detrimental to wildlife or not wildlife dependent are prohibited.

The HCWA LMP is consistent with the MSCP/Natural Communities Conservation Plan (NCCP). The MSCP was developed to conserve the diversity and function of the ecosystem through the preservation and adaptive management of large blocks of interconnected habitat and smaller areas that support rare vegetation communities. Maintaining ecosystem functions and persistence of extant populations of sensitive species is the biological goal of the MSCP. The Multi-Habitat Planning Area (MHPA) identified by the MSCP traverses the HCWA and the adjacent RJER, as well as nearby U.S. Forest Service (USFS) and Bureau of Land Management (BLM) lands. The MHPA includes areas known to support high quality biological resources as well as areas that have been identified as important linkages that connect larger areas of open space. The MHPA identified within HCWA both supports high quality biological resources and secures an important linkage connecting Otay Mountain/Jamul Mountains to Sycuan Peak.

The purpose of the LMP is to establish management goals and objectives that are compatible with wildlife area management principals. Appropriate public uses of the property are identified that are compatible with the Department’s mission. The LMP’s management guidelines include:

- 1) Adaptive management of habitats, species, and programs to achieve the Department’s mission to protect and enhance wildlife values.
- 2) Appropriate public uses of the property.
- 3) A descriptive inventory of wildlife and native plant habitats that occur on or use the property.
- 4) An overview of the property’s operation and maintenance, and personnel requirements to implement management goals, as well as a budget planning aid for annual regional budget preparation.
- 5) A description of potential and actual environmental impacts and subsequent mitigation, which may occur during management.

This Initial Study analyzes the whole of the proposed project, including the following project components:

- Approval of the HCWA LMP.
- Maintenance activities to sustain the HCWA and its habitats, including control of non-native, invasive species and restoration of disturbed areas. Specific activities included in the LMP are:
 - Removal of eucalyptus trees from the central segment of Jamul Creek and

from the unnamed tributary near the former Honey Springs Ranch home site.

- Restoration of approximately 900 feet of an unnamed tributary to Hollenbeck Canyon where erosion has created a gully approximately 30 feet deep.
- Restoration of old dirt roads and single-track trails designated for closure.
- Actively manage up to 200 acres of non-native grassland in the western portion of HCWA for conversion to native grassland. Management may include experimental designs using a combination of grazing, controlled burns, thatch removal, seeding, or other techniques.

- Continued maintenance of selected non-native grassland areas by sowing cereal wheat to attract doves for hunting.

- The ongoing operation of the HCWA includes the public uses incorporated in the LMP. Public uses that would be permitted under the LMP include hunting, hiking and equestrian trails, mountain biking, environmental education, and hunting dog training (see Figure 4).

- Construction of the following improvements within the HCWA (see Figure 4):
 - Create ponds for hunting dog training by repairing, enhancing and filling abandoned stock ponds near the former Honey Springs Ranch home site.
 - Install approximately 2,300 feet of 2-inch water line from the nearest well to serve the former stock ponds.
 - Create a new approximately 1-acre unpaved parking area in a disturbed area near the former Honey Springs Ranch home site. Install a vehicle gate and horse gate near the new parking lot to provide additional access along an existing road to the neighboring hunting dog training ponds and trails in this area. Install a horse gate in the northern boundary fence where a trail enters the site.

- Maintenance of existing trails, gates, parking areas, and hunting dog training areas.

- The monitoring of plant and animal populations, public use, and related scientific research.

- Ongoing coordination with public agencies and private entities consistent with the objectives of the LMP.

- The dissemination of public information regarding the HCWA.

- Regular updating of HCWA regulations.

- Enforcement of all applicable laws and regulations.

Public uses that would be permitted under the LMP include the following

- Hunting - Resident small game (e.g. dove, quail, and rabbits) are hunted on the reserve. Potential opportunities include crow, non-game mammals (e.g. coyote, bobcat, and ground squirrel). In addition, pheasant and wild turkey, although these species are not currently present, may be hunted in the future. Table 2 lists the hunting periods. Currently, the daily range of hunters is from 3 to 8 hunters on weekdays, 10 to 20 on non-opener weekend days, and 30 to 40 on opening days. Some areas are closed to hunting for buffer and management purposes, including areas adjacent to the private Daley Ranch compound and other residences in the northwestern portion of HCWA, the area surrounding a private inholding in the central portion of HCWA, and state housing area south of Honey Springs Road.

Hunting is by shotgun, falconry, air rifles larger than .20 caliber, or archery only; no gunpowder rifles or pistols are allowed due to the proximity of residential areas. Shotguns and archery are allowed for hunting only; no target practice is allowed. Falconry is allowed but is not generally used due to the high number of raptors present that could attack hunting falcons. “Put and take” pheasant hunts do not currently occur on HCWA as they do on RJER; however, they may be conducted in the future.

**Table 2
Hunting Seasons Applicable to HCWA**

Species	Season*	Total Days*
Dove	Early September (early season)	15
	Late November – early December (late season)	45
Quail	Mid-October – late January	105 (3.5 months)
	Late August – mid-September (archery only)	20
Rabbits	Early September – late January	120 (4 months)
Coyote	Early September – late January	120 (4 months)
Crow	Early December – late January	60 (2 months)

*Dates and number of days vary annually

- Wildlife viewing, environmental education, and nature study - The quality and diversity of habitat and wildlife species provide extensive opportunities for nature study and wildlife viewing. Some school field trips and other groups are hosted at the adjacent RJER, which is intended to have a greater focus on educational programs; these groups may also visit HCWA.
- Trail use - There are approximately 21.4 miles of double-track and single-track trails open to all uses. From the parking area at Honey Springs Road at an elevation of about 750 feet, the trails climb into the hills, reaching elevations of

about 1,800 feet near the northeastern portion of HCWA. In addition to recreational use, the trails are used for management, research, and Department activities and by Border Patrol staff.

The *San Diego County Community Trails Master Plan* has been adopted by the County to establish a system of interconnected regional and community trails and pathways. These trails and pathways are intended to address an identified public need for recreation and transportation, and to provide health and quality of life benefits associated with hiking, biking, and horseback riding throughout the County's biologically diverse environments. Existing HCWA and RJER trails connect with several of the existing and proposed County trail system.

The California Hiking and Riding Trail connects to and overlays a portion of the trail system in HCWA. That segment of trail was formerly a part of the state-designated trail. Equestrians and others may access HCWA from adjacent lands to the east on the California Hiking and Riding Trail, although the former trail easements were dissolved. The State discontinued the trail and no longer maintains it. The County of San Diego is investigating taking over management of the trail. If the County does not take over management, it would become part of the normal trail system without special designation.

Equestrian use of the trails is about 5 to 10 riders per day during the week and 10 to 20 on weekend days. Some of these riders are adjacent residents who can access the land on horseback; however, there are no access points from private land). To protect the trails, equestrian use is allowed only on compacted, dry roads with a 3-day wait after a significant rain event. Organized group rides are required to get permits from the Department.

Hiking and other pedestrian use of the trails is somewhat greater than equestrian use, with about 10 to 20 hikers per day on weekdays and 20 to 40 per day on weekends. Mountain biking activity on the trails is similar in amount to equestrian use, with 5 to 10 riders on weekdays (generally in the morning and early evening) and 10 to 20 riders on weekend days. Hikers are allowed off-trail, while equestrians and bike riders are required to remain on designated routes. Mountain bike use is allowed only on dry trails with a 3-day wait after a significant rain event.

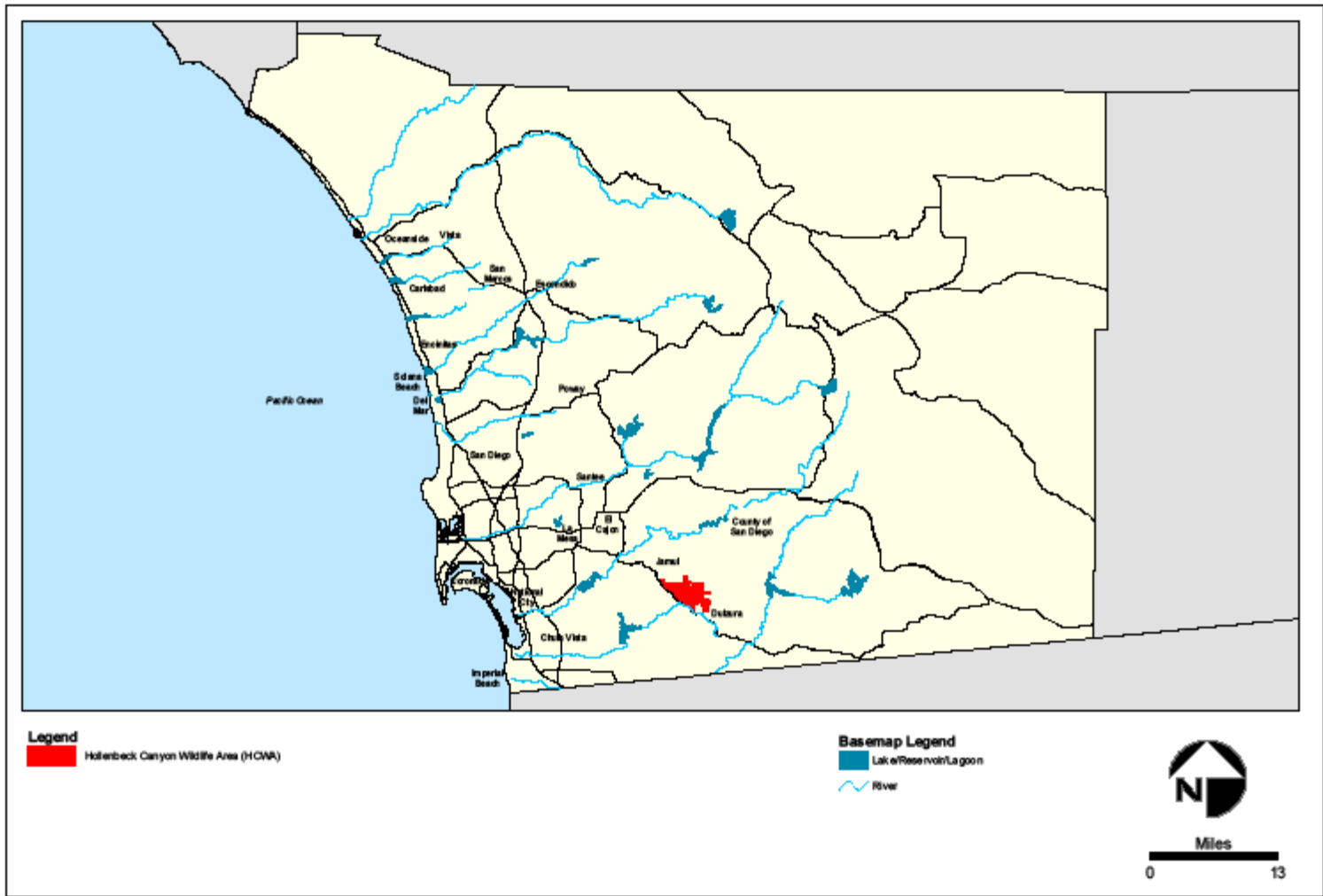
- Hunting dog training and use - Visitors may bring hunting dogs onto HCWA for either training or hunting. Although leashes are not required during hunting dog training, hunting dogs must be under immediate control by their owners. Visitors are permitted to train hunting dogs in designated areas from September through February. Two training areas have been designated. The larger is a 500-acre area at the northwest corner of HCWA along SR 94, with parking on Rancho Jamul Drive, which crosses the training area. The smaller area is north of the junction of SR 94 and Honey Springs Road, near the main parking area. About 5 to 10 people per week use these areas for hunting dog training. Hunting dog trainers may release pigeons and male game birds for training purposes. Hunting dog field trials may be permitted upon issuance of a special use permit.
- Research - ongoing biological research of various plant and animal species

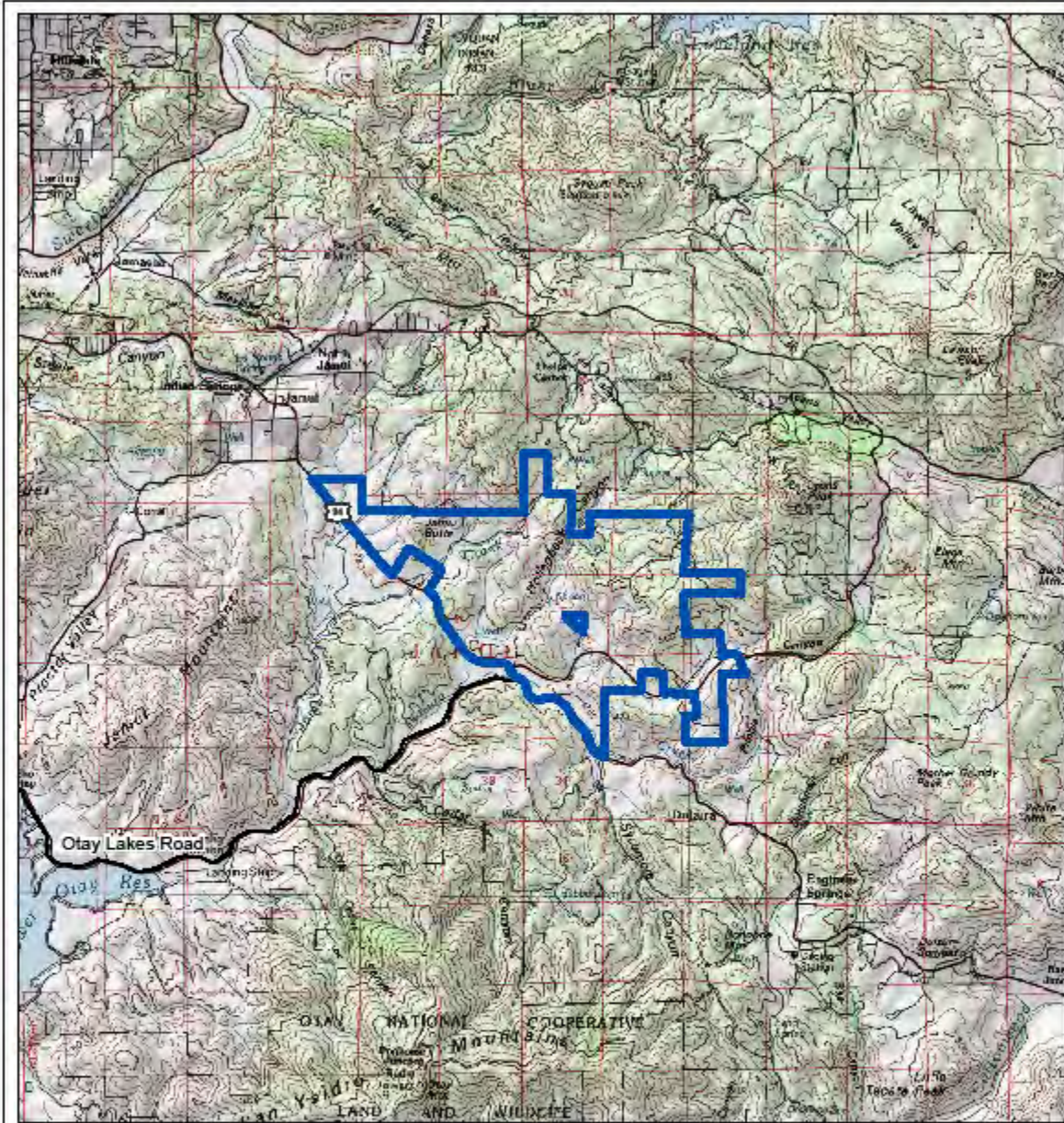
supply important information to guide future management and stewardship of resources. Mountain lion, deer, Quino checkerspot butterfly, and California gnatcatcher are among the species being studied. Quail and dove are also counted on a regular basis.

- Unauthorized activity - unauthorized activities include motorized vehicle and motorcycle use, and trail creation. Citations are issued and fines can be levied by County court system.
- Closed area/periods - the section of HCWA between (south of) Honey Springs Road and SR 94, an area of approximately 468 acres, is currently closed to the public. No entry is allowed to this area except to Department or other authorized personnel for an authorized reason. There is one unit of state housing in this area near Honey Springs Road and SR 94. A second, smaller area of approximately 35 acres, north of Honey Springs Road, is also closed to public access. This closed area includes a private inholding and a surrounding area that is closed to minimize unauthorized entry to the private inholding.

Staff and/or volunteers responsible for gate openings and closures may be instructed by the HCWA manager to keep gates closed and post temporary closure signs during high fire danger, severe weather, and for up to 3 days following heavy rain events.

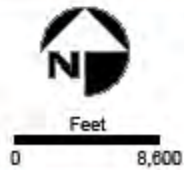
9. **Surrounding land uses and setting: Briefly describe the project's surroundings:**
The unincorporated community of Jamul is located north of the HCWA (see Figures 1 and 2). A single-family residential area is located adjacent to the HCWA just north of Jamul Butte (see Figures 2 and 3). The area northeast of the HCWA is largely vacant although a few scattered residences are located near existing roads. A cluster of estate residences are located immediately east of the HCWA along Honey Springs Road. Another cluster of residences are located between the southern boundary of HCWA and SR 94. The Daley Ranch home site is located adjacent to SR 94 and Jamul Creek. The RJER is located southwest of the HCWA.
10. **Other public agencies whose approval is required (e.g., permits, financing approval, or participation agreement).**
No other public agency approval is required for the adoption of the HCWA LMP.





USGS 100,000 El Cajon Quadrangle

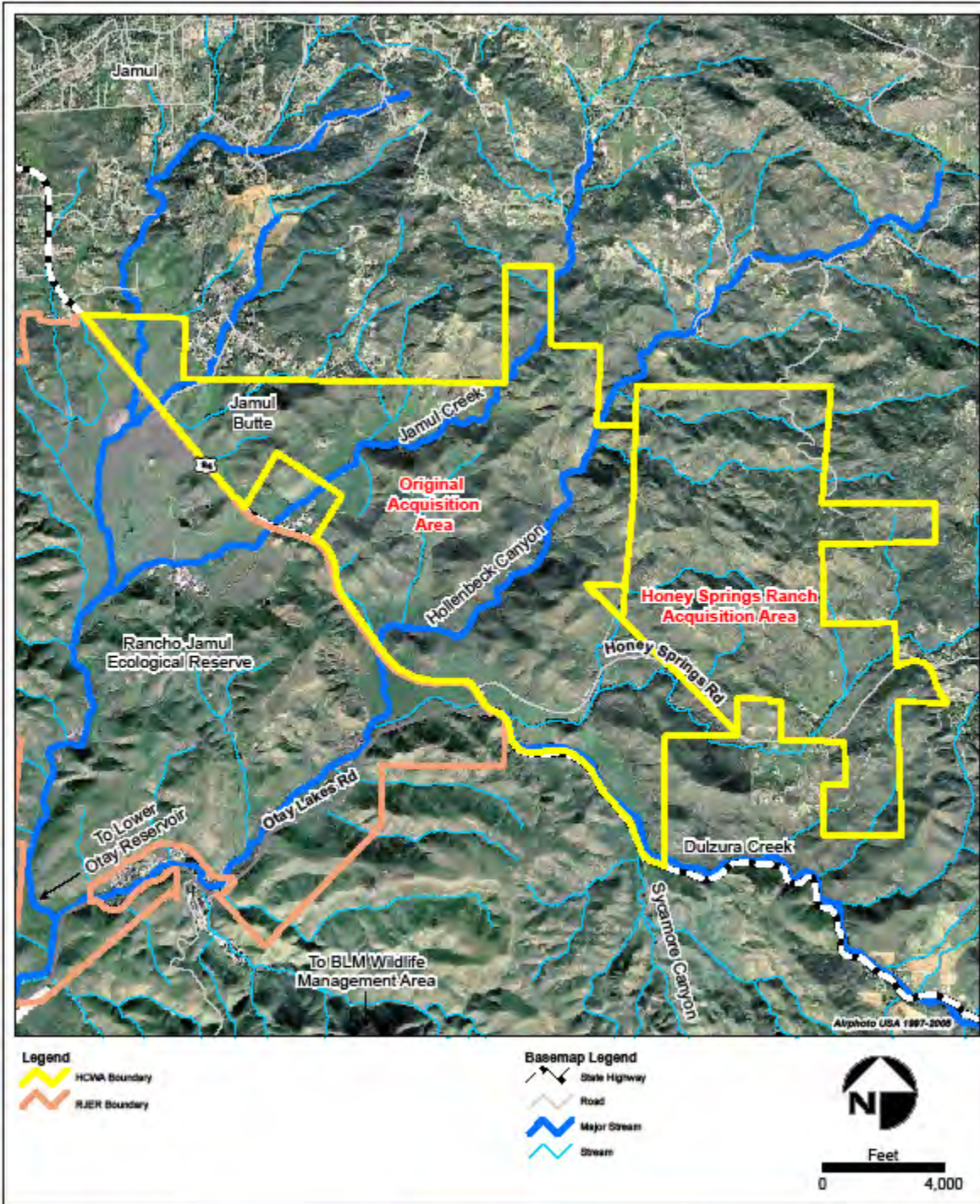
Basemap Legend
 HCWA Boundary



EDAW

USGS Topographic Quadrangle

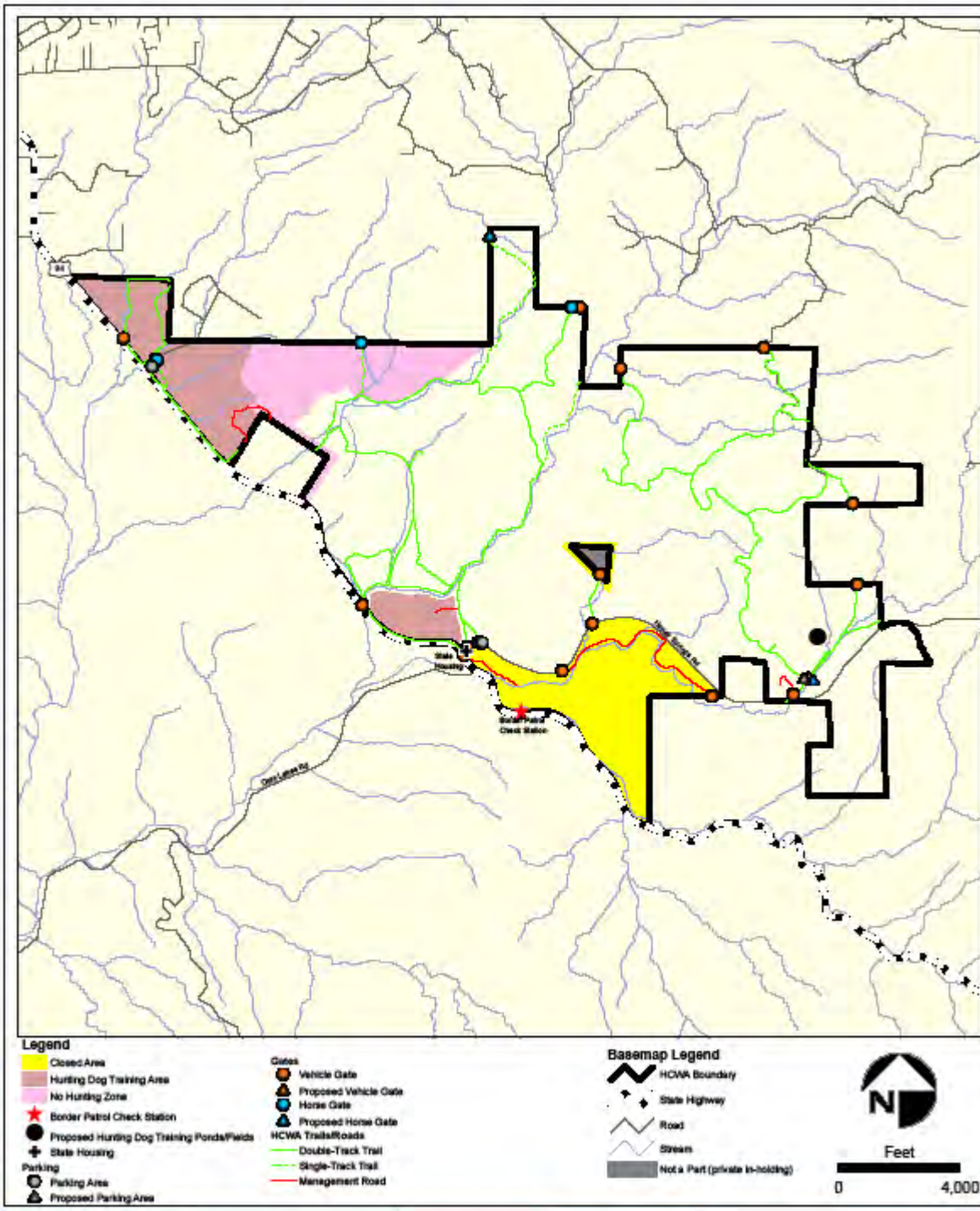
Figure 2



EDAW

Land Acquisition Map

Figure 3



EDAW

Public Use

Figure 4

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:


If implemented as written, this LMP would not result in a "Potentially Significant Impact" involving the environmental factors listed below, as documented in the Environmental Checklist/Initial Study on the following pages.

<input type="checkbox"/>	Aesthetics	<input type="checkbox"/>	Agriculture Resources	<input type="checkbox"/>	Air Quality
X	Biological Resources	X	Cultural Resources	<input type="checkbox"/>	Geology /Soils
<input type="checkbox"/>	Hazards & Hazardous Materials	<input type="checkbox"/>	Hydrology / Water Quality	X	Land Use / Planning
<input type="checkbox"/>	Mineral Resources	<input type="checkbox"/>	Noise	<input type="checkbox"/>	Population / Housing
<input type="checkbox"/>	Public Services	<input type="checkbox"/>	Recreation	<input type="checkbox"/>	Transportation/Traffic
<input type="checkbox"/>	Utilities / Service Systems	<input type="checkbox"/>	Mandatory Findings of Significance	<input type="checkbox"/>	NONE

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

 Theresa A. Stewart, Supervising Biologist 9-23-08
Date

EVALUATION OF ENVIRONMENTAL IMPACTS:

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

- 9) The explanation of each issue should identify:
 - a) The significance criteria or threshold, if any, used to evaluate each question; and
 - b) The mitigation measure identified, if any, to reduce the impact to less than significance

ENVIRONMENTAL ANALYSIS

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
I. AESTHETICS -- Would the project:				
a) Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
II. AGRICULTURE RESOURCES -- In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
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III. AIR QUALITY -- Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:

- | | | | | |
|---|--------------------------|--------------------------|--------------------------|--------------------------|
| a) Conflict with or obstruct implementation of the applicable air quality plan? | <input type="checkbox"/> | <input type="checkbox"/> | X | <input type="checkbox"/> |
| b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation? | <input type="checkbox"/> | <input type="checkbox"/> | X | <input type="checkbox"/> |
| c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)? | <input type="checkbox"/> | <input type="checkbox"/> | X | <input type="checkbox"/> |
| d) Expose sensitive receptors to substantial pollutant concentrations? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | X |
| e) Create objectionable odors affecting a substantial number of people? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | X |

IV. BIOLOGICAL RESOURCES -- Would the project:

- | | | | | |
|--|--------------------------|---|--------------------------|--------------------------|
| a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service? | <input type="checkbox"/> | X | <input type="checkbox"/> | <input type="checkbox"/> |
| b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game or US Fish and Wildlife Service? | <input type="checkbox"/> | X | <input type="checkbox"/> | <input type="checkbox"/> |

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	X	<input type="checkbox"/>	<input type="checkbox"/>
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	<input type="checkbox"/>	<input type="checkbox"/>	X	<input type="checkbox"/>
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X

V. CULTURAL RESOURCES -- Would the project:

a) Cause a substantial adverse change in the significance of a historical resource as defined in '15064.5?	<input type="checkbox"/>	X	<input type="checkbox"/>	<input type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to '15064.5?	<input type="checkbox"/>	X	<input type="checkbox"/>	<input type="checkbox"/>
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
d) Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X

VI. GEOLOGY AND SOILS -- Would the project:

- | | | | | | |
|--|--------------------------|--------------------------|--------------------------|--------------------------|---|
| a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving: | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | X |
| i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | X |
| ii) Strong seismic ground shaking? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | X |
| iii) Seismic-related ground failure, including liquefaction? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | X |
| iv) Landslides? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | X |
| b) Result in substantial soil erosion or the loss of topsoil? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | X |
| c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | X |
| d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | X |
| e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | X |

VII. HAZARDS AND HAZARDOUS MATERIALS -- Would the project:

- | | | | | | |
|---|--------------------------|--------------------------|--------------------------|--------------------------|---|
| a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | X |
|---|--------------------------|--------------------------|--------------------------|--------------------------|---|

- | | | | | | |
|--|--------------------------|--------------------------|-------------------------------------|--------------------------|--------------------------|
| b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | X |
| c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | X |
| d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | X |
| e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | X |
| f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | X |
| g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | X |
| h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

VIII. HYDROLOGY AND WATER QUALITY

-- Would the project:

- | | | | | | |
|---|--------------------------|--------------------------|--------------------------|--------------------------|---|
| a) Violate any water quality standards or waste discharge requirements? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | X |
|---|--------------------------|--------------------------|--------------------------|--------------------------|---|

b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
j) Inundation by seiche, tsunami, or mudflow?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

IX. LAND USE AND PLANNING -- Would the project:

- | | | | | |
|---|--------------------------|-------------------------------------|--------------------------|-------------------------------------|
| a) Physically divide an established community? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c) Conflict with any applicable habitat conservation plan or natural community conservation plan? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

X. MINERAL RESOURCES -- Would the project:

- | | | | | |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

XI. NOISE -- Would the project result in:

- | | | | | |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

- | | | | | | |
|---|--------------------------|--------------------------|--------------------------|--------------------------|---|
| e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | X |
| f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | X |

XII. POPULATION AND HOUSING -- Would the project:

- | | | | | | |
|---|--------------------------|--------------------------|--------------------------|--------------------------|---|
| a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | X |
| b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | X |
| c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | X |

XIII. PUBLIC SERVICES

a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

- | | | | | | |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|---|
| Fire protection? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | X |
| Police protection? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | X |
| Schools? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | X |
| Parks? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | X |
| Other public facilities? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | X |

XIV. RECREATION --

- | | | | | | |
|--|--------------------------|--------------------------|--------------------------|--------------------------|---|
| a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | X |
| b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | X |

XV. TRANSPORTATION/TRAFFIC -- Would the project:

- | | | | | | |
|--|--------------------------|--------------------------|--------------------------|--------------------------|---|
| a) Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | X |
| b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | X |
| c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that result in substantial safety risks? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | X |
| d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | X |
| e) Result in inadequate emergency access? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | X |
| f) Result in inadequate parking capacity? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | X |
| g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | X |

XVI. UTILITIES AND SERVICE SYSTEMS -

- Would the project:

- | | | | | |
|---|--------------------------|--------------------------|--------------------------|---|
| a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | X |
| b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | X |
| c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | X |
| d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | X |
| e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | X |
| f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | X |
| g) Comply with federal, state, and local statutes and regulations related to solid waste? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | X |

XVII. MANDATORY FINDINGS OF SIGNIFICANCE --

- | | | | | |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| <p>a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?</p> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| <p>b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?</p> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| <p>c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?</p> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

EXPLANATIONS TO CHECKLIST ANSWERS

I. AESTHETICS

a), b), c), and d). No Impact.

There are no designated scenic vistas in the area surrounding HCWA and none of the local roadways are designated as scenic routes by the California Scenic Highway Program. However, the County of San Diego Scenic Highway Element designates SR 94 and Honey Springs Road from SR 94 to Lyons Valley Road as Third Priority Scenic Routes. The project would not adversely affect a scenic vista, natural resources, historic buildings, or SR 94 and Honey Springs Road because no new structures will be constructed, no designated historic structures would be removed, and the existing landform within the HCWA would remain in its natural state. Infrastructure development would be limited to refilling abandoned stock ponds with water, creating a new approximately 1-acre unpaved parking area with a vehicle gate and horse gate in a disturbed area near the former Honey Springs Ranch home site, adding interpretive and boundary signage on trails, installing a new horse gate where a trail enters the site, and repairing or removing existing fencing. No outdoor lighting would be installed on the site. The scenic features of the site's landform will remain intact because grading would be limited to the periodic maintenance of roads used by Department staff, and the limited restoration of eroded dirt roads and trails. As a land management plan, the proposed project would preserve existing native vegetation and natural visual resources. To maintain style, replacement materials for fencing and building repair should match closely existing materials. Portable toilets should be placed in ranch style screening and away from adjacent landowners where feasible.

II. AGRICULTURAL RESOURCES

a), b), and c). No Impact.

Cattle were grazed on the site in the past and agricultural activities were conducted in some of the low-lying areas. No current farming or ranching operations occur on the property and the site is not under a Williamson Act contract. The HCWA would conserve the existing land and vegetation resources found on the site and no clearing of vegetation or uses of the land is proposed that would hinder future agriculture uses. Agriculture activities are not proposed by the LMP. The proposed LMP would not impact prime or unique farmland, or farmland of statewide or local importance.

III. AIR QUALITY

a), b), and c). Less Than Significant Impact.
d) and e). No Impact.

San Diego County is in non-attainment for the 1-hour concentrations under the California Ambient Air Quality Standard (CAAQS) for Ozone (O₃). San Diego County is also in non-attainment for the annual geometric mean and for the 24-hour concentrations of particulate matter less than or equal to 10 microns (PM₁₀) under the CAAQS. VOC sources include any source that burns fuels (e.g., gasoline, natural gas, wood, oil); solvents; petroleum processing and storage; and pesticides. Sources of PM₁₀ 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.

Operation of the HCWA project would not result in emissions of significant quantities of criteria pollutants listed in the CAAQS or toxic air contaminants as identified by the California Air Resources Board. Increases in vehicular trips would be minimal because the LMP proposes no new activities or uses that would attract a substantial number of additional visitors to the site and the proposed expansion of site activities such as a hunting dog training area would not generate a substantial number of automobile trips. Further, there are no substantial grading operations associated with the project. There are no sensitive receptors such as schools in the project vicinity and the activities at the HCWA would not produce odors. Consequently, the project would not result in a cumulatively considerable net increase of PM₁₀, or any O₃ precursors. Consequently, the project would not conflict or obstruct with the implementation of the RAQS nor the SIP on a project or cumulative level.

IV. BIOLOGICAL RESOURCES

- a), b), c). Less Than Significant With Mitigation Incorporated.
- d). Less Than Significant.
- e) and f). No Impact.

Twenty-three vegetation types and one additional land cover type (i.e., areas that do not support vegetation) have been mapped within the HCWA. Scrublands (Diegan coastal sage scrub, chamise chaparral, disturbed chamise chaparral, scrub oak chaparral, southern mixed chaparral, and coastal sage scrub-chaparral) cover 77% of the site. Native and non-native grasslands have been mapped on 17% of the site. Riparian habitats (southern coast live oak, southern arroyo-willow, sycamore woodland, sycamore-oak riparian forest, southern willow scrub, mulefat scrub) occupy nearly 5% of the site. Upland woodlands (coast live oak and eucalyptus) occur on less than 1% of the site, as does open water and developed lands. Less than 1% of the site is classified as disturbed habitat.

A total of 215 floral species are documented as occurring within the HCWA. Of these 215 species, 168 (78%) are native species and the remaining 47 (22%) are non-native species. The two largest plant families in the county are also the families with the most species present on HCWA with 41 taxa observed in the Asteraceae family and 20 taxa observed in the Poaceae family. Similar to the patterns observed for the native taxa, the highest number of non-native taxa also belongs to the Asteraceae (9 observed) and Poaceae (12 observed) families. The high number of native species within HCWA reflects the large amount of contiguous natural habitat within HCWA that would promote plant species diversity. In addition, a number of areas of HCWA are underlain by clay, gabbro, and metasedimentary soils, which would also contribute to plant diversity by providing a mosaic of different substrates for plant establishment.

The HCWA has an abundant diversity of invertebrate species that utilize a variety of habitats. Fifty-two insect species were observed during surveys. Twenty-eight native species of ants, including several species of harvester ant (*Pogonomyrmex rugosus*, *Messor andrei*, and *M. stoddardii*) have been identified on-site and no non-native species of ants were observed. Twenty-three species of butterflies were recorded, including red admiral (*Vanessa atalanta*), perplexing hairstreak (*Calloprhys dumetorum perplexa*), Felder's orangetip (*Anthocaris cethura*), and Quino checkerspot (*Euphydryas editha quino*). Additionally, one wasp species, the tarantula wasp (*Pepsis formosa*), and one aquatic macroinvertebrate species, the swamp crayfish (*Procambarus clarkii*), were also identified.

The HCWA does not have permanent water bodies that support fish, and no focused surveys for fish have been conducted. The western mosquitofish (*Gambusia affinis*) is known to occur within the spring-fed creek on HCWA.

Four amphibian species have been detected within HCWA, including the garden slender salamander (*Batrachoseps major*), Pacific tree frog (*Pseudacris regilla*), California tree frog (*P. cadaverina*), and western toad (*Bufo boreas*). The garden slender salamander was the most commonly captured amphibian during pitfall surveys and was captured primarily in grassland habitat. These salamanders are also found in coastal sage scrub, chaparral, oak woodlands, and wooded riparian canyons. The 2 species of frogs that have been detected, the Pacific and California treefrogs, generally require the presence of water (shallow pools, flowing streams, or marshes) during some or all of their life cycle. Thus, they are more often associated with riparian vegetation but may also be found in adjacent upland habitats such as grasslands, coastal sage scrub, and chaparral.

The high diversity of reptiles within HCWA is supported by the presence of large, contiguous blocks of undeveloped native habitat. A total of 21 species are known to occur, including 10 lizard species and 11 snake species.

Approximately 84 native bird species and 2 introduced bird species have been identified through diurnal surveys, point counts, and incidental observations throughout the HCWA. Generalist avian species widely distributed and common throughout HCWA include birds such as the turkey vulture (*Cathartes aura*), phainopepla (*Phainopepla nitens*), American crow (*Corvus brachyrhynchos*), Bewick's wren (*Thryomanes bewickii*), mourning dove (*Zenaidura macroura*), black phoebe (*Sayornis nigricans*), Anna's hummingbird (*Calypte anna*), house finch (*Carpodacus mexicanus*), western kingbird (*Tyrannus verticalis*), blue grosbeak (*Passerina caerulea*), and lesser goldfinch (*Carduelis psaltria*). Wintering species common throughout HCWA include the white-crowned sparrow (*Zonotrichia leucophrys*) and yellow-rumped warbler (*Dendroica coronata*).

Birds associated with coastal sage scrub and chaparral habitats on HCWA include the California towhee (*Polioptila crissalis*), California quail (*Callipepla californica*), greater roadrunner (*Geococcyx californianus*), wrentit (*Chamaea fasciata*), western scrub jay (*Aphelocoma californica*), southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*), Bell's sage sparrow (*Amphispiza belli belli*), and coastal California gnatcatcher (*Polioptila californica californica*). Summer visitors include Costa's hummingbird (*Calypte costae*). Mature chaparral on-site supports a variety of species, including birds such as the blue-gray gnatcatcher (*Polioptila caerulea*) and California thrasher (*Toxostoma redivivum*). Migratory species that have been detected within these habitats include Allen's hummingbird (*Selasphorus sasin*), Say's phoebe (*Sayornis saya*), and hermit thrush (*Catharus guttatus*). Additionally, raptors such as the golden eagle (*Aquila chrysaetos*) may forage in scrub, chaparral, and grassland habitats on HCWA.

Riparian species found in marsh, riparian scrub, riparian woodland, and/or riparian forest on HCWA include three species of woodpeckers (*Colaptes auratus*, *Melanerpes formicivorus*, and *Picoides nuttallii*), oak titmouse (*Baeolophus inornatus*), bushtit (*Psaltriparus minimus*), common yellowthroat (*Geothlypis trichas*), and red-winged blackbird (*Agelaius phoeniceus*). Migratory species found within this habitat include Lawrence's goldfinch (*Carduelis lawrencei*), American goldfinch (*C. tristis*), ruby-crowned kinglet (*Regulus calendula*), northern rough-winged swallow (*Stelgidopteryx serripennis*), Lazuli bunting (*Passerina amoena*), black-headed grosbeak (*Pheucticus melanocephalus*), barn swallow (*Hirundo rustica*), black-chinned hummingbird (*Archilochus alexandri*), Pacific-slope flycatcher (*Empidonax difficilis*), ash-throated flycatcher (*Myiarchus cinerascens*), Hutton's vireo (*Vireo huttoni*), and yellow warbler (*Dendroica petechia*).

Areas dominated by mature oaks on HCWA support bird species such as the house wren (*Troglodytes aedon*), western bluebird (*Sialia mexicana*), and Cassin's kingbird (*Tyrannus vociferans*). Migratory species include Swainson's thrush (*Catharus ustulatus*), hooded oriole (*Icterus cucullatus*), Bullock's oriole (*I. bullocki*), western wood-peewee (*Contopus sordidulus*), western tanager (*Piranga*

ludoviciana), and cedar waxwing (*Bombycilla cedrorum*). The relatively large size of HCWA and oak woodland on-site provides suitable habitat for nesting and perching raptors including the red-tailed hawk (*Buteo jamaicensis*) and American kestrel (*Falco sparverius*). Also present and potentially nesting within the oak woodland habitat on-site are the white-tailed kite (*Elanus leucurus*), red-shouldered hawk (*Buteo lineatus*), and Cooper's hawk (*Accipiter cooperii*). Owl species detected within the LMP area and potentially nesting in the oak woodland habitat on-site include the barn owl (*Tyto alba*).

Grassland specialists include the western meadowlark (*Sturnella neglecta*) and grasshopper sparrow (*Ammodramus savannarum*). Grassland is also used as foraging habitat by a variety of raptors, particularly the white-tailed kite, northern harrier (*Circus cyaneus*), and red-tailed hawk. The northern harrier is known to also nest within grassland habitats. Two harrier nests/territories were documented by the Wildlife Research Institute (2002).

Approximately 41 mammal species have been detected within the HCWA, including insectivores, bats, rabbits, rodents, carnivores, and ungulate species. HCWA supports a high diversity of bat species including 13 of the 16 species commonly found in San Diego County. These bats roost and forage in a wide diversity of habitats, depending upon species-specific requirements.

Mammal species within HCWA are common residents of chaparral, coastal sage scrub, and/or grassland habitat. Species found within these habitats include the black-tailed jackrabbit (*Lepus californicus*), desert cottontail (*Sylvilagus audubonii*), California ground squirrel (*Spermophilus beecheyi*), Botta's pocket gopher (*Thomomys bottae*), San Diego pocket mouse (*Chaetodipus fallax fallax*), California pocket mouse (*C. californicus*), and San Diego kangaroo rat (*Dipodomys simulans*). Other small mammals identified on-site include 10 species of mice and voles, including desert woodrat (*Neotoma lepida*) and dusky-footed woodrat (*N. fuscipes*), and two species of shrew, *Notiosorex crawfordi* and *Sorex ornatus*. Only one non-native small mammal species was identified on-site, the house mouse (*Mus musculus*), which does not pose a threat to native fauna.

The small mammal assemblage and mule deer (*Odocoileus hemionus*) that are present on HCWA provide a solid prey base for the medium to large carnivores. The most common predators are the coyote (*Canis latrans*), gray fox (*Urocyon cinereoargenteus*), bobcat (*Lynx rufus*), and mountain lion (*Felis concolor*). Although the long-tailed weasel (*Mustela frenata*), raccoon (*Procyon lotor*), and striped skunk (*Mephitis mephitis*) also eat small mammals, they have a more diverse diet preference and will scavenge for invertebrates, frogs, lizards, birds, eggs, acorns, and fruit. The ringtail (*Bassariscus astutus*) is another opportunistic species known to occur in the HCWA.

San Diego thornmint, a federally threatened, state-endangered, MSCP-covered species, is the only listed plant species that was observed on HCWA during surveys. Several patches, totaling approximately 2,020 individuals, occur on the grassland/clay lens in the north-central portion of HCWA.

This population occurs on a mesa between Jamul Creek (to the west) and Hollenbeck Canyon (on the east) on soils mapped as Bonsako stony clay. This small outcrop of this soil series measures approximately 5 to 10 acres in area and is the only locality for this soil type mapped for this USGS quad. As such, this small area represents a very unusual and rare edaphic, ecological island.

One federally threatened, state-endangered plant species, Otay tarplant is known to occur in the vicinity of HCWA. Otay tarplant is also an MSCP-covered species that is documented from the RJER. This species has not been documented from HCWA, though it has the potential to occur in the grasslands and the open sage scrub areas underlain by clay soils. The adjacent RJER population represents a bit of a range extension for this species, and there are no known populations east of RJER.

One state-listed, MSCP-covered plant species known within the vicinity of HCWA is San Diego butterweed, designated as a state rare species. San Diego butterweed is a gabbro endemic and is known from McGinty Mountain just north of HCWA. This species has not been documented from HCWA but could occur in areas of gabbro soil.

Two federally listed animal species, the federally endangered Quino checkerspot butterfly and the federally threatened coastal California gnatcatcher, are known to occur on-site. One federally threatened, state-endangered species, the bald eagle (*Haliaeetus leucocephalus*) was detected on-site as an incidental observation. Five additional threatened or endangered wildlife species have a potential to occur within the HCWA area. These include the federally endangered arroyo toad (*Bufo californicus*) and southwestern willow flycatcher (*Empidonax traillii extimus*), the federally endangered, state-threatened least Bell's vireo (*Vireo belli pusillus*), the state-endangered peregrine falcon (*Falco peregrinus*), and the state-threatened Swainson's hawk (*Buteo swainsonii*).

The federally endangered Quino checkerspot butterfly has been detected in at least four different areas throughout HCWA. Although it is not covered by the MSCP, it is proposed to be covered through an amendment (County of San Diego 2005). Within the original acquisition area, at least 20 individuals were observed near San Diego thornmint populations at the northern end of the HCWA. The primary larval host plant for Quino, dot-seed plantain (*Plantago erecta*), along with various nectar sources occur throughout the HCWA. Thus this species is expected to occur in all suitable habitats within HCWA.

The coastal California gnatcatcher a federally threatened and MSCP-covered species is also known to occur within the HCWA. Approximately eight pairs and two individuals were detected during 2002 monitoring surveys, near the southwestern portion of the property, just north of SR 94.

The federally threatened, state-endangered, and MSCP-covered bald eagle was detected during baseline surveys. However, these observations occurred incidentally. Suitable foraging and breeding habitat does not occur on HCWA. The closest known nest site occurs within Lake Henshaw in Santa Ysabel, San Diego County.

Within the HCWA, camera and track station surveys have shown that Dulzura Creek, including the tributary along Hollenbeck Canyon, and Jamul Creek are important movement corridors for a variety of medium and large sized mammals. The wildlife moves in and out of the wildlife area through 4 culverts that cross underneath SR 94, which has been identified as a barrier to wildlife movement, and the culverts act as a chokepoint in this area. Only one of these (at the southern branch of Jamul Creek) is large enough to accommodate the movement of mule deer. Other species moving through the culverts include mountain lions, bobcats, coyotes, grey foxes, skunks, raccoons, and opossums. In addition to Dulzura and Jamul Creeks, Little Cedar Creek to the south is considered a valuable movement corridor as well, facilitating north-south movement between the San Ysidro Mountains and the Jamul Mountains, Proctor Valley, and San Miguel Mountains via Jamul Creek.

Habitat protection and enhancement are primary goals of the HCWA, and all activities will comply with state and federal endangered species regulations as well as the County of San Diego MSCP requirements. No clearing or removal of sensitive natural habitat, including protected wetlands, is proposed by the LMP; therefore, the LMP would not have a substantial direct effect on any sensitive species. The low level of proposed human activities, and the generally passive nature of the activities, such as hiking and horseback riding, hunting, hunting dog training would not result in substantial indirect effects on sensitive species. The identified habitat linkages and wildlife corridors will be retained intact and no barriers to wildlife movement will be constructed.

The LMP ecosystem approach will preserve endangered species and their habitats, and natural riparian areas will be protected. The goals of the HCWA include preserving the MSCP identified regional wildlife corridors that connect to preserved areas on adjacent lands. Disturbed areas will be restored with native species and non-native vegetation such as eucalyptus trees will be removed.

The proposed construction of the hunting dog training parking area and water line to fill the hunting dog training ponds would not result in significant direct biological effects because these activities would occur within a disturbed area. Once filled, the ponds would be available for use during the legal hunting dog training period at HCWA. The low intensity of the hunting dog training activity would not result in significant direct or indirect effects. No sensitive species have been documented in the vicinity of the proposed ponds, and no significant impacts have been associated with hunting dog training activities in the other two areas where hunting dog training is currently allowed.

The proposed horse gate at the northern property line is located in an area vegetated with chamise chaparral. Installation of the gate would not result in a significant impact because a very small area is required to construct the gate, and the short period of time required to construct a gate.

The proposed unpaved parking area, vehicle gate, and horse gate, near the former Honey Springs Ranch home site, are located in a disturbed area. The parking area is located in an area of bare ground with adjacent ornamental landscaping. The horse gate and vehicle gates would be installed on an existing road, to allow additional access by equestrians in this portion of the property, and to provide for limited vehicle access to the new hunting dog training ponds, respectively.

The continuation of the current level of hunting activity would not result in a significant biological impact because (1) the hunting predominantly occurs outside the breeding period of sensitive avian species, and (2) no significant adverse effects have been detected to date as a result of the hunting activity. In addition, based on on-going monitoring, future hunting would be limited, if needed, to avoid adverse impacts on sensitive biological resources.

Habitat protection and enhancement are primary goals of the HCWA, and all management and maintenance activities will comply with state and federal endangered species regulations as well as the County of San Diego MSCP requirements. The goals of the HCWA include preserving the MSCP identified regional wildlife corridors that connect to preserved areas on adjacent lands. The identified habitat linkages and wildlife corridors would be retained intact and no barriers to wildlife movement would be constructed.

The following management activities would result in a net benefit to sensitive natural resources in the HCWA - active and passive restoration, habitat enhancement, species re-introduction, and sensitive species conservation. Although the primary goal of the HCWA is to protect sensitive biological resources, management actions such as surveys and monitoring, erosion and sediment control, restoration activities, species re-introduction projects, invasive non-native plant eradication, non-native wildlife control, and game management could adversely impact biological resources within the HCWA.

All management and research activities will be assessed for potential direct or indirect impacts prior to implementation of each management activity. The majority of impacts that could result from management activities are expected to be temporary (e.g., noise and dust resulting from the use of heavy equipment). To the extent feasible, all future management activities will incorporate appropriate avoidance measures such as temporary fencing to protect riparian areas from grazers, prescribed burn protocols, appropriate use of herbicides and pesticides, etc. into the design of the management activity. These impact avoidance measures will minimize the potential for biological resource impacts.

However, some impacts to biological resources may be unavoidable. Implementation of the following mitigation measures would reduce these impacts to a less than significant level.

- Surveys and monitoring will be performed by a qualified biologist.
- Surveys and monitoring will follow protocols established by the Department and the U.S. Fish & Wildlife Service.
- Best management practices (BMPs) will be implemented whenever erosion or sedimentation could result from management activities.
- Any habitat impact resulting of the use of heavy equipment will be restored to its original condition.
- Activities that would directly or indirectly affect habitat occupied by sensitive species shall be conducted during the non-breeding season of the species in the project area.
- New facilities will be placed in disturbed habitat whenever possible.
- Temporary staging areas will be revegetated following the completion of construction.
- Hand tools rather than mechanized equipment will be used whenever feasible.
- All unavoidable impacts to sensitive habitats will be minimized and/or mitigated to a less than significant.

Potential direct and indirect impacts may also result from the public's use of HCWA. The uses that may result in impacts include: (1) the overuse of trails, open areas, or parking lots; (2) unauthorized use of closed areas; (3) conflicts among users; and (4) accidents involving wildlife (e.g. road kill). These impacts will be reduced to a less than significant level by implementation of the following mitigation measures:

- Managing visitation to an appropriate level.
- Preventing unauthorized activities through daily observation of visitor activities.
- Promptly repairing damaged trails, parking areas, etc.
- Installing educational signs and/or display cases to educate and inform the public regarding rules and regulations governing the use of the HCWA and access restrictions.
- Regularly monitoring public use effects on existing ecosystems.
- Closing trails where use is determined to have, or potentially have, an adverse effect on sensitive biological or cultural resources.

None of the maintenance activities proposed in the LMP would result in the removal of sensitive vegetation communities by clearing and grading, or construction activities that would produce excessive noise levels or high levels of dust generation. Consequently, the proposed maintenance activities would not result in significant direct or indirect impacts to the biological resources within the HCWA.

V. CULTURAL RESOURCES

a) and b). Less Than Significant With Mitigation Incorporated.

c) and d). No Impact.

Cultural resource surveys within the HCWA identified a total of 43 cultural resources that include a prehistoric component. Of these cultural resources, there are 37 sites and 6 isolates. The site types are eight habitation sites, seven temporary camps, five lithic scatters, and 17 bedrock milling sites. The six isolates consist of flakes, manos, ceramics, and projectile points. In addition, there are seven prehistoric resources immediately adjacent to the HCWA outside the wildlife area boundaries. They consist of one habitation site, four temporary camps, one lithic scatter, and one bedrock milling site.

The surveys identified nine cultural resources within the HCWA that include a historic component. They include historic foundations, a historic sign, historic trash scatters, historic structures, and two home sites. They are described as late 19th to early 20th century resources of early settlers. In addition, there is one historic resource immediately adjacent to the HCWA outside the wildlife area boundaries. CA-SDI-7446 was identified as Geary's Homestead. In 1890, Daniel Geary homesteaded this area and built his home at this knoll on a prehistoric site.

A search of the Sacred Lands files held by the California Native American Heritage Commission identified sacred lands within the HCWA. No details of the nature of the resource were provided.

A cultural resource management plan study completed for the Department in 2002 prioritized the protection of CA-SDI-7441, -9273, -9689, -14,439, and -14,443 as a top priority. These sites should not be accessible nor should any development or access improvements be made to these locations. Revegetation programs should be implemented to hide CA-SDI-16,270, -16,271, -16,272, and -16,273. In addition, corrals and split-wood fences located on Jamul Creek should be protected and preserved since they provide context to the ranching that existed there for so many years. Implementation of the cultural resource management plan will reduce potential impacts to a less than significant level.

Of the 5,189 acres within the HCWA, approximately 2,997 acres have not yet been surveyed for cultural resources. If additional access points are added, additional surveys must be completed prior to any ground disturbance by clearing or grading. The highest priorities for additional surveys are the Jamul Creek area and the fallow fields along SR 94 north of the Daley family complex.

Public use of the HCWA, and grading activities associated with maintenance and management could adversely affect historic or archaeological resources. Potential impacts would be reduced to less than significant level by the implementation of the following mitigation measures.

- Fencing or other barriers will be placed around identified cultural resource sites that could be disturbed by human encroachment such as hiking and hunting activities.
- All grading and construction activities, and active human use areas, will be sited to avoid known cultural resource sites to the extent feasible.
- A cultural resource investigation shall be conducted before any grading or public use occurs in an area that has not been surveyed for cultural resources.
- Cultural resource investigations will be conducted under the guidance of a qualified cultural resource professional, as defined by the Secretary of Interior's Professional Qualifications Standards.
- Cultural resource investigations and treatments shall be conducted in accordance with federal and state of California regulations and standards concerning cultural resources.

- A final report for each investigation will be filed at RJER, and with the South Coastal Information Center, which manages the Historical Resources Inventory database for San Diego County, under the direction of the California Office of Historic Preservation.

VI. GEOLOGY AND SOILS

a), b), c), d), and e). No Impact.

The San Ysidro Mountains to the south of HCWA and the Jamul Mountains and San Miguel Mountains to the west were part of a series of volcanic islands off the coast of California. Volcanic ash and breccia from these volcanoes metamorphosed to become the fine-grained rock of the Santiago Peak Volcanic Formation. To the east of these islands, a granitic and gabbroic batholith was uplifted to form the Peninsular Range. HCWA lies near the contact of these two formations. Granitic boulders and granitic outcrops are present throughout the wildlife area.

HCWA is located where the coastal plains grade into the foothill mountains, and is traversed by Jamul Creek, Hollenbeck Canyon, and Dulzura Creek, all of which flow down the watershed into Lower Otay Lake. The site has gentle to moderately steep hills and open valleys varying in elevation from a low of 750 to a high of 2,600 feet, and it contains a diverse mixture of vegetative communities and habitat features.

The majority of the HCWA is composed of Cieneba soils, which characterize the eastern side of HCWA (see Table 3). The next largest soil cover within the HCWA is the Vista series, which is predominant in the central portion of the wildlife area. In the northwestern portion, the dominant soil series is Las Posas, with Visalia, Ramona, Greenfield, Fallbrook, and small portions of Grangeville fine, sandy loam, and Cieneba surrounding Las Posas.

Many of the low-lying areas within the wildlife area, either directly along the drainages or adjacent to these areas, are underlain by soils of the Ramona, Visalia, and Greenfield series. The central and upper reaches of Hollenbeck Canyon, however, as well as segments of other tributaries, are characterized by the Vista and Cieneba soil series, similar to the adjacent uplands. Descriptions of the soil types present on the LMP area are provided in Table 3 on the following page.

Some of the soils (e.g. Grangeville, Friant, and Escondido) are subject to severe erodibility while others are well drained. The runoff potential of the soil series varies from fairly low to very high. Most of the soils are suitable for trails and paths although the Friant soils are poorly suited for trails and paths.

The HCWA does not include the construction of facilities that require landform alterations, nor would the proposed use of the site result in soil erosion or the loss of topsoil. No septic systems or waste water disposal systems are proposed because a limited number of people would utilize the area; porta-johns will be utilized as needed throughout the year. Therefore, the proposed project would not expose people or property to geologic hazards including seismic ground shaking or failure, liquefaction, landslides, unstable soils or geologic unit, subsidence, or expansive soils. No landform alterations would be required for the implementation of the HCWA, nor would the proposed use of the site result in soil erosion or the loss of topsoil. Existing eroded areas, including a deep gully along one of the creeks that cross the HCWA, would be restored and stabilized to prevent future erosion.

Table 3
Characteristics of Soil Types Present within the HCWA

Soil Series	Structure	Slope	Additional Description	Suitability for Public Use
Cieneba	Very shallow to shallow, coarse sandy loams.	Various (rolling slopes to mountainous uplands).	Very excessively drained soils. Occur at elevations of 500 to 3,000 feet.	Suitable for creating trails and paths.
Vista	Moderately deep and deep, coarse sandy loams.	5 to 6 percent.	Well-drained. Occur on upland areas at elevations of 300 to 500 feet.	Well suited to creating trails, paths, and roads.
Fallbrook	Sandy loams.	2 to 30 percent.	Occur on upland areas at elevations of 200 to 2,500 feet.	Suited to trails, paths, and moderately suitable road locations.
Ramona	Deep sandy loams with a sandy clay subsoil.	0 to 30 percent.	Well-drained soils associated with terraces and alluvial fans. Occur at elevations of 200 to 1,800 feet.	Suitable for trails and paths.
Greenfield	Very fine sandy loams.	0 to 15 percent.	Occur on alluvial fans and alluvial plains at elevations of 400 to 800 feet.	Suitable for trails and paths.
Las Posas	Stony, fine sandy loams with a clay subsoil.	2 to 65 percent.	These soils have moderate erodibility and high runoff potential.	Areas with slopes up to 15 percent are suitable for trails and paths; however, these soils are largely unsuitable for roads, picnic areas, or heavy use.
Visalia	Sandy loams.	Unknown.	Alluvial deposits, well drained, fairly low runoff potential, and severe erodibility.	Well suited to trails and paths, and moderately suitable as road locations.
Grangeville	Fine sandy loams.	0 to 2 percent.	Formed in alluvial fans, poorly drained, fairly low runoff potential, and severe erodibility.	Moderately suitable for paths, trails, and road locations.
Acid Igneous Rock Land	Loamy, coarse sand in texture.	Various (ranging from low hills to very steep mountains)	These shallow soils occur within rough terrain.	Cannot be graded easily. More valuable providing habitat for wildlife than developing paths, trails, and roads.
Friant	Rocky, fine sandy loams.	9 to 70 percent.	Shallow, well-drained, upland mountainous soil with a very high runoff potential and severe erodibility.	Poorly suited for paths, trails, and roads.

Soil Series	Structure	Slope	Additional Description	Suitability for Public Use
Escondido	Very fine, sandy loams	5 to 30 percent.	Upland soils forming gently rolling areas. Fairly high runoff potential and severe erodibility.	Poor suitability for heavy use, good to fair suitability for paths, and fair to poor suitability for roads.

VII. HAZARDS AND HAZARDOUS MATERIALS

- a), b), c), d), e), f), and g). – No Impact.
- h). Less than significant impact.

The HCWA does not contain any known or suspected hazardous materials, nor have such materials been used on the site in the past. The management and operation of the HCWA as identified in the LMP would not require the use or storage of any hazardous materials on-site. The site is not located within an airport land plan area nor is it within two miles of a public airport or private airstrip. Implementation of the LMP would not physically interfere with the County’s adopted emergency response plan or evacuation plan because the amount of traffic generated by the LMP would not have a noticeable effect on traffic volumes on SR 94.

The LMP would not increase the potential for wildfire hazards because the intensity of human use at the site would be very low. Potential adverse impacts associated with the implementation of the LMP’s Fire Management Element will be avoided and/or reduced to a less than significant level by:

- Development, review, and approval of site-specific fire management plans for all fuel manipulation activities.
- All fire management activities will be conducted by qualified Department and fire agency staff, or volunteers under the direction of Department and fire agency staff.
- Fuel management will be accomplished by mechanical clearing or burning conducted outside of the nesting and breeding periods for all sensitive animal species.
- Permits for controlled burns will be obtained from the California Department of Forestry (CDF). CDF permits require compliance with all CDF regulations and the permit requirements will be observed during a controlled burn.
- Fuel management activities will be conducted in a manner that will not contribute to fragmentation of habitat linkages.
- Following a fire, all burned areas will be monitored to assess invasion by non-native plant species. Remedial seeding or other measures will be conducted as needed. Weed-dominated habitats and non-native grasslands dry out earlier than native perennial species and are easily ignited.
- Areas damaged from fire suppression activities will be promptly revegetated or repaired.

VIII. HYDROLOGY AND WATER QUALITY

- a), b), c), d), e), f), g), h), and j). - No Impact.
- i). - Less than significant impact.

HCWA lies within the 93,000-acre Otay River Watershed and is traversed or bordered by three major drainages and numerous tributaries, which flow towards the south and southeast, eventually merging on the adjacent HCWA and flowing into the Lower Otay Reservoir. The northernmost drainage, Jamul Creek, is a seasonal tributary that drains the northern portion of the wildlife area. Two branches of Jamul Creek exit HCWA and enter into Rancho Jamul Ecological Reserve through culverts underneath SR 94.

The project site is located in the Jamul (10.33), Lee (10.34), and Hollenbeck (10.35) Hydrologic Subareas as identified in the *Water Quality Control Plan for the San Diego Basin (9)* prepared by the California Regional Water Quality Control Board, San Diego Region (1994). These Subareas are within the Dulzura Hydrologic Area (10.30) of the Otay Hydrologic Unit (10.00). Identified beneficial uses of these inland surface waters include municipal, domestic water, industrial process, and agriculture water supply, contact and non-contact water recreation, warm fresh water, and wildlife habitat. The Clean Water Act *Section 303(d) List of Impaired Water Bodies* does not include any water bodies associated with the Jamul, Lee, and Hollenbeck Hydrologic Subareas.

Implementation of the proposed HCWA project would not violate any water quality standard or waste discharge permit because the project will not result in the discharge of water or wastewater. The project will not deplete or affect groundwater because groundwater will not be utilized for any of its activities except refilling the abandoned stock ponds and the existing home that will be used as a Department housing unit. The HCWA would not alter any of the existing drainage courses by grading, construction of new buildings or paved areas. The drainage pattern of the on-site creeks would not be altered, and the project would not increase the rate or amount of surface runoff. No housing units or other facilities would be constructed within a 100-year flood hazard area. Given its location, the project site is not subject to seiche, tsunami, or mudflow.

- i). Less than Significant Impact.

The HCWA proposes to refill abandoned stock ponds in the eastern portion of the project site with groundwater to provide for hunting dog training. Dams and reservoirs in California are regulated by the Department of Water Resources, Division of Safety of Dams, as described in the California Water Code Sections 6002, 6003, and 6004. The mission of the Division of Safety of Dams is to avoid dam failure and to prevent the loss of life and the destruction of property. The Division does not regulate or have jurisdiction over dams less than 25 feet in height with a storage capacity less than 50 acre-feet. Therefore, under these regulations, the small earthen stock ponds in HCWA are not regulated by the Division of Safety of Dams. There are no downstream structures subject to risk from dam failure. The water volume of the ponds would be small (<2 acre-feet), and the proposed project would not create a risk of dam failure. As restoration of other abandoned stock ponds is pursued, the applicability of the California Water Code Section will be determined, and the appropriate regulations implemented.

IX. LAND USE AND PLANNING

- a) and c). – No Impact.
- b). – Less than significant with mitigation incorporated.

The HCWA would not divide an established community because it is located in a rural area. Implementation of the HCWA LMP is consistent with the provisions of the *County of San Diego General Plan, Jamul/Dulzura Subregional Plan*. The LMP is also consistent with the “Metro-Lakeside-Jamul Segment” of the *County of San Diego MSCP Subarea Plan*. As noted in Section IV above, the Subarea Plan identifies a portion of the MHPA that crosses the HCWA in a northeast-southwest direction as a MHPA. The HCWA LMP was specifically developed to comply with the goals of the MSCP, County of San Diego Subregional Plan, and land management plans for adjacent areas.

The proposed LMP is not entirely consistent with the *Jamul-Dulzura Community Trail and Pathway Plan* adopted by the County of San Diego. Some of the trails shown on the *Jamul-Dulzura Community Trail and Pathway Plan* as public trails and pathways are not included in the HCWA trail system. In some instances, the alignments of individual trail segments are in different locations on the two trail plans. The Department shall resolve the conflict between the *Jamul-Dulzura Community Trail and Pathway Plan* and the HCWA LMP through discussions with the County of San Diego and amending the two plans as mutually agreed upon to achieve consistency between the plans. Amending the plans to achieve consistency would reduce the impact to a less than significant level.

X. MINERAL RESOURCES

a) and b). – No Impact.

There are no known locally-important mineral resources within the HCWA and none are delineated on the County General Plan or other land use plan. Activities proposed within the HCWA would not involve the extraction of mineral resource, nor is mineral extraction a permitted use within a wildlife area. The proposed project would not conflict with mineral resource protection plans or result in the loss of a known mineral resource.

XI. NOISE

a), b), c), d), e), and f). No Impact.

Implementation of the LMP and operation of the HCWA would not result in any construction or human activity that would cause an increase noise levels that exceed the standards established in the County of San Diego General Plan Noise Element and Noise Ordinance. None of the activities proposed by the LMP would result in groundborne vibration or noise levels. Consequently there would be no short-term or long-term increase in ambient noise levels. Aircraft noise is not a factor at the HCWA because there are no airports or private airstrips within a 2-mile radius of the site.

XII. POPULATION AND HOUSING

a), b), and c). No Impact.

The population of the Jamul/Dulzura subregion is approximately 9,000 people. It has several small rural or semi-rural communities including Jamul, Steele Canyon, Dulzura, and Barrett Junction. Jamul, the largest of these communities, and its surrounding hills and valleys accommodate a majority of the Subregion's population. Generally the Subregion is still rural in character since it has no sewer system and imported water service. The County's draft General Plan 2020 forecasts the buildout population will be approximately 21,400 people.

Implementation of the proposed project would not induce growth to the area because no housing or commercial activities would be constructed, nor would public services be extended to the area. No existing housing units would be removed nor would people be displaced.

XIII. PUBLIC SERVICES

a) and b). No Impact.

The intensity and frequency of public use in the HCWA has been historically very low. The LMP will not require any fire, police, or other public services beyond those currently available. No new housing will be provided and no additional school or park services will be required.

The LMP will not increase the potential for wildfire hazards because the intensity of human use at the site will be very low. Potential adverse impacts with the implementation of the LMP's Fire Management Element will be avoided and/or reduced to a less than significant level by:

- Development, review, and approval of site-specific fire management plans for all fuel manipulation activities
- All fire management activities will be conducted by qualified Department and fire agency staff, or volunteers under the direction of Department and fire agency staff.
- Fuel management will be accomplished by mechanical clearing or burning conducted outside of the nesting and breeding periods for all sensitive animal species.
- Permits for controlled burns will be obtained from the California Department of Forestry (CDF). CDF permits require compliance with all CDF regulations and the permit requirements will be observed during a controlled burn.
- Fuel management activities will be conducted in a manner that will not contribute to fragmentation of habitat linkages.
- Following a fire, all areas burned will be monitored to assess invasion by non-native plant species. Remedial seeding or other measures will be conducted as needed. Weed-dominated habitats and non-native grasslands dry out earlier than native perennial species and are easily ignited.
- Areas damaged from fire suppression activities will be promptly revegetated or repaired.

XIV. RECREATION

a) and b). No Impact.

The HCWA will not increase the usage of existing parks or recreational facilities because no new housing would be constructed. The proposed project would provide limited recreational use within the HCWA. The number of recreational users will be managed, as needed, to ensure that use does not exceed the carrying capacity of the natural resources or degrade existing natural features or recreational facilities. No new construction of active recreational facilities or other structures is proposed.

XV. TRANSPORTATION / TRAFFIC

a), b), c), d), e), f), and g). No Impact.

Human use of the HCWA is very low, and the proposed project would not build any new structures or introduces uses that would generate a substantial number of new automobile trips. The only traffic related improvement proposed is a new, 1-acre unpaved parking area. No roadway improvements are proposed and the current emergency access to the site will be unaffected. No vehicular use is permitted on the dirt access roads through the site (except for maintenance and emergency access). No alternative transportation systems exist at the site and none are proposed. Air traffic patterns will not be affected by the project.

SR 94 and Otay Lakes Road provide access to the site. SR 94 is classified as a Major Road (4 lanes) between the communities of Jamul and Dulzura, but is constructed as a 2-lane road. The 2004 traffic counts for this roadway reports 12,900 average daily trips (ADT) west of Honey Springs Road and 8,300 ADT east of Honey Springs Road. The level of service (LOS) on these segments is "D" and "C," respectively. Otay Lakes Road west of SR 94 is classified as a 4-lane Collector, but is constructed as a 2-lane road. The 2004 traffic count on this road is 3,100 ADT with LOS "B." Traffic generated by the LMP will not affect the LOS on these roadways and will not result in a substantial increase in traffic on these roadways.

XVII. UTILITIES AND SERVICE SYSTEMS

a), b), c), d), e), f), and g). No Impact.

A very small number of people use the HCWA, and the proposed project would not generate any new demand for public utilities or services. No new septic or wastewater systems are proposed. No storm drain facilities exist and none are proposed; the project will not result in an increase of storm water runoff. Potable water is currently provided by on-site wells and no new water facilities are required. A minimal amount of solid waste is currently generated at the site and no increase is anticipated as a result of implementing the LMP.

XVII. MANDATORY FINDINGS OF SIGNIFICANCE

a), b), and c). No Impact.

The Department currently manages the HCWA to protect rare, threatened or endangered native plants, wildlife, aquatic organisms, and specialized terrestrial or aquatic habitat types. Other activities include scientific study, research, and education. Although public use and enjoyment of the site is encouraged, the uses must remain consistent with the primary goal of natural resources protection and compatible wildlife dependant uses.

The HCWA LMP is consistent with the MSCP/NCCP. The MSCP was developed to conserve the diversity and function of the ecosystem through the preservation and adaptive management of large blocks of interconnected habitat and smaller areas that support rare vegetation communities. Maintaining ecosystem functions and persistence of sensitive species is the biological goal of the MSCP. A biological resource core area identified by the MSCP traverses HCWA, the adjacent RJER, as well as nearby USFS and BLM lands.

The HCWA LMP will not result in adverse effects to the existing habitat, wildlife species or cultural resources. It 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 animal community, reduce the number or restrict the range of a

rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory.

b. – No Impact.

The LMP does not authorize any substantive physical changes and future projects, if any, will require subsequent environmental analysis when the specifics of a project are established. There are no impacts that are individually limited, but cumulatively considerable.

c. – No Impact.

Implementation of the LMP would not have environmental effects that would cause substantial adverse effects on human beings, either directly or indirectly.

INFORMATION SOURCES:

1. California Department of Fish and Game, *Hollenbeck Canyon Wildlife Area Land Management Plan*. – DRAFT - July 2006.
2. County of San Diego,
 - *Regional Land Use Element*, 1/11/95.
 - *Jamul/Dulzura Subregional Plan*, 1/11/95.
 - *Open Space Element*, 1/11/95.
 - *Seismic Safety Element*, 4/24/91.
 - *Scenic Highway Element*, 12/10/86.
 - *San Diego County Community Trails Master Plan*, 1/12/2005.
 - *Multiple Species Conservation program Subarea Plan*, 10/22/97.
 - *General Plan 2020 Community Information Sheet* found at <http://www.sdcounty.ca.gov/cnty/cntydepts/landuse/planning/GP2020/comm/jamul.htm>
3. San Diego Regional Water Quality Control Board
 - *Regional Water Quality Control Board Basin Plan*, March 1994, as amended
 - *Clean Water Act Section 303(d) List of Impaired Waters, 2002 Update*, October 2001.
4. San Diego Association of Governments, *Average Daily Traffic Volumes*, 7/31/06.

Form A
Notice of Completion & Environmental Document Transmittal

SCH # **2006101083**

Mail to: State Clearinghouse, P. O. Box 3044, Sacramento, CA 95812-3044 (916) 445-0613
 For Hand Delivery/Street Address: 1400 Tenth Street, Sacramento, CA 95814

Project Title: Hollenbeck Canyon Wildlife Area Land Management Plan
Lead Agency: California Department of Fish and Game **Contact Person:** Terri Stewart
Mailing Address: 4949 Viewridge Avenue **Phone:** 619-467-4209
City: San Diego **Zip:** 92123 **County:** San Diego

Project Location:
County: San Diego **City/Nearest Community:** Jamul **Total Acres:** 5,248
Cross Streets: State Route 94 and Honey Springs Road **Zip Code:** 91935
Assessor's Parcel No.: _____ **Section:** 7, 16-21, 28-31, 33 **Twp.:** 17 South **Range:** 01 and 02 **Base:** San Bernardin
Within 2 Miles: State Hwy #: 94 **Waterways:** Jamul Creek and Dutzira Creek
Airports: n/a **Railways:** n/a **Schools:** n/a

Document Type:
 CEQA: NOP Draft EIR Supplement to EIR (Note prior SCH # below) Final Document
 Early Cons Neg Dec Subsequent EIR (Note prior SCH # below) Draft EIS Other _____
 Mit Neg Dec Other _____
 NEPA: NOI EA Draft EIS FONSI
 Other: Joint Document Final Document Other _____

Local Action Type:
 General Plan Update Specific Plan Rezone Annexation
 General Plan Amendment Master Plan Use Permit Redevelopment
 General Plan Element Planned Development Land Division (Subdivision, etc.) Other Land Management Plan
 Community Plan Site Plan

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 OCT 12 2006
 STATE CLEARINGHOUSE

Development Type:
 Residential: Units _____ Acres _____ Water Facilities: Type _____ MGD _____
 Office: Sq. ft. _____ Acres _____ Employees _____ Transportation: Type _____
 Commercial: Sq. ft. _____ Acres _____ Employees _____ Mining: Mineral _____
 Industrial: Sq. ft. _____ Acres _____ Employees _____ Power: Type _____ MW _____
 Educational _____ Waste Treatment: Type _____ MGD _____
 Recreational _____ Hazardous Waste: Type _____
 Other: Wildlife Area

Project Issues Discussed in Document:
 Aesthetic/Visual Fiscal Recreation/Parks Vegetation
 Agricultural Land Flood Plain/Flooding Schools/Universities Water Quality
 Air Quality Forest Land/Fire Hazard Septic Systems Water Supply/Groundwater
 Archeological/Historical Geologic/Sediment Sewer Capacity Wetland/Riparian
 Biological Resources Minerals Soil Erosion/Compaction/Grading Growth Inducement
 Coastal Zone Noise Solid Waste Land Use
 Drainage/Absorption Population/Housing Balance Toxic/Hazardous Cumulative Effects
 Economic/Jobs Public Services/Facilities Traffic/Circulation Other _____

Present Land Use/Zoning/General Plan Designation:
 Wildlife area/General Agriculture/General Agriculture and Specific Plan Area

Project Description: (please use a separate page if necessary)
 The proposed project is the approval and implementation of an initial Hollenbeck Canyon Wildlife Area (HCWA) Land Management Plan (LMP). The HCWA provides habitat for "special status" species, game species and other native species.

State Clearinghouse Contact: (916) 445-0613
 State Review Began: 10-12-2006

SCH COMPLIANCE 11-13-2006

Please note State Clearinghouse Number (SCH#) on all Comments
2006101083

SCH#: 2006101083
 Please forward late comments directly to the Lead Agency

AQMD/APCD 27
 (Resources: 10/14)

- Project Sent to the following State Agencies**
- | | |
|---|--|
| <input checked="" type="checkbox"/> Resources | State/Consumer Svcs |
| <input type="checkbox"/> Boating & Waterways | General Services |
| <input type="checkbox"/> Coastal Comm | Cal EPA |
| <input type="checkbox"/> Colorado Rvr Bd | ARB - Airport Projects |
| <input type="checkbox"/> Conservation | ARB - Transportation Projects |
| <input type="checkbox"/> Fish & Game # | ARB - Major Industrial Projects |
| <input type="checkbox"/> Delta Protection Comm | Integrated Waste Mgmt Bd |
| <input type="checkbox"/> Forestry & Fire Prot | SWRCB: Clean Wtr Prog |
| <input type="checkbox"/> Historic Preservation | SWRCB: Wtr Quality |
| <input checked="" type="checkbox"/> Parks & Rec | SWRCB: Wtr Rights |
| <input type="checkbox"/> Reclamation Board | <input checked="" type="checkbox"/> Reg. WQCB # 7 |
| <input type="checkbox"/> Bay Cons & Dev Comm | <input checked="" type="checkbox"/> Toxic Sub Ctrl-CTC |
| <input checked="" type="checkbox"/> DWR | Yth/Adlt Corrections |
| <input type="checkbox"/> OES (Emergency Svcs) | Corrections |
| <input type="checkbox"/> Bus Transp Hous | Independent Comm |
| <input type="checkbox"/> Aeronautics | Energy Commission |
| <input checked="" type="checkbox"/> CHIP | <input checked="" type="checkbox"/> NAHC |
| <input checked="" type="checkbox"/> Caltrans # 11 | Public Utilities Comm |
| <input type="checkbox"/> Trans Planning | State Lands Comm |
| <input type="checkbox"/> Housing & Com Dev | Tahoe Rgl Plan Agency |
| <input type="checkbox"/> Food & Agriculture | |
| <input type="checkbox"/> Health Services | |
| | Conservancy |
| | Other: _____ |

Notice of Determination

Appendix D

To:

Office of Planning and Research
For U.S. Mail: P.O. Box 3044 Sacramento, CA 95812-3044
Street Address: 1400 Tenth St. Sacramento, CA 95814

County Clerk
County of:
Address:

From:

Public Agency: Dept. of Fish and Game
Address: 4949 Viewridge Avenue San Diego, CA 92123
Contact: Karen L. Miner
Phone: 858 627-3939

Lead Agency (if different from above):
Address:
Contact:
Phone:

SUBJECT: Filing of Notice of Determination in compliance with Section 21108 or 21152 of the Public Resources Code.

State Clearinghouse Number (if submitted to State Clearinghouse): 2006101083

Project Title: Land Management Plan for the Hollenbeck Canyon Wildlife Area

Project Location (include county): Jamul, San Diego County

Project Description:

The proposed project is the approval and implementation of an initial Hollenbeck Canyon Wildlife Area (HCWA) Land Management Plan (LMP). The HCWA provides habitat for "special status" species, game species, and other native species.

This is to advise that the California Department of Fish and Game has approved the above described project on 9-23-08 and has made the following determinations regarding the above described project:
(Lead Agency or Responsible Agency)

- 1. The project [] will [X] will not have a significant effect on the environment.
2. [] An Environmental Impact Report was prepared for this project pursuant to the provisions of CEQA. [X] A Negative Declaration was prepared for this project pursuant to the provisions of CEQA.
3. Mitigation measures [X] were [] were not made a condition of the approval of the project.
4. A mitigation reporting or monitoring plan [X] was [] was not adopted for this project.
5. A statement of Overriding Considerations [] was [X] was not adopted for this project.
6. Findings [] were [X] were not made pursuant to the provisions of CEQA.

This is to certify that the final EIR with comments and responses and record of project approval, or the negative Declaration, is available to the General Public at: CDFG Regional Office, 4949 Viewridge Avenue, San Diego 92123

Signature (Public Agency) [Signature] Title Deputy Director

Date 9-23-08 Date Received for filing at OPR

Authority cited: Sections 21083, Public Resources Code. Reference Section 21000-21174, Public Resources Code.

Revised 2005

