

Appendix 3

Biological Resources Assessment



Santa Monica Mountains

North Area Plan and Community Standards District Update

Biological Resources Assessment



Prepared for:



Los Angeles County
Department of Regional Planning

Prepared by:



October 2018

Santa Monica Mountains North Area Plan and Community Standards District Update Biological Resources Assessment

Prepared for
County of Los Angeles
Department of Regional Planning

Prepared by
Aspen Environmental Group



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LIST OF ACRONYMS

AIS	Aerial Information Systems, Inc.
BCC	Bird of Conservation Concern
CCH	California Consortium of Herbaria
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CFP	California Fully Protected
CNDDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CRPR	California Rare Plant Rank
CSD	Community Standards District
CSSC	California Species of Special Concern
CST	Candidate for State Listing as Threatened
DPS	Distinct Population Segment
ESA	Endangered Species Act
ESRI	Environmental Systems Research Institute
FE	Federally Listed as Endangered
FT	Federally Listed as Threatened
GIS	Geographic information system
LCP	Local Coastal Program
MRCA	Mountains Recreation and Conservation Authority
MRT	Mountains Restoration Trust
NAP	North Area Plan
NHD	National Hydrography Dataset
NPS	National Park Service
NWI	National Wetlands Inventory
RWQCB	Regional Water Quality Control Board
SEA	Significant Ecological Area
SMMNAP	Santa Monica Mountains North Area Plan
SMMRCD	Santa Monica Mountains Resource Conservation District
SR	State Designated Rare
SE	State-Listed Endangered
ST	State-Listed Threatened
UCLA	University of California, Los Angeles
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USDI	U.S. Department of the Interior
USFWS	United States Fish and Wildlife Service
USGS	U.S. Geological Survey
WL	California Watch List Species

Executive Summary

The Santa Monica Mountains are home to a variety of sensitive plants and wildlife, unique geologic features, important wildlife linkages, and aquatic features. The “North Area” of the range, the focus of the Biological Resources Assessment, encompasses approximately 21,500 acres of the north-central Santa Monica Mountains, linking the range with the Simi Hills to the north. Several State and federally listed species, as well as numerous California Species of Special Concern and rare plants, are known from the North Area, including most of the global range of three plants, one of southern California’s last populations of red-legged frog, and the North Area formerly supported some of the last nesting pairs of

golden eagle and prairie falcon in the Los Angeles area.

Iconic southern California landscapes such as valley oak savannah, sycamore-lined canyons, volcanic rock outcrops, and wildflower-rich meadows are still found in the North Area, both on and off protected lands. The North Area supports very large blocks of undisturbed open space separating urban development along U.S. 101 from protected open space in the main body of the Santa Monica Mountains and Simi Hills. However, development over the next few decades could potentially degrade these areas further and expand the urban footprint; or, with careful planning, these habitats will be relatively undisturbed and their resources left intact, while still allowing for responsible development.

The County of Los Angeles, Department of Regional Planning (County) is updating the Santa Monica Mountains North Area Plan (SMMNAP) and Community Standards District (CSD). The guiding principle of the existing SMMNAP is to ***“let the land dictate the type and intensity of use.”*** To support the County’s update to its NAP and CSD, this assessment documents the plants and wildlife of the North Area and presents a strategy for protecting sensitive resources as the region continues to urbanize.

The assessment describes the biological resources in the North Area, highlighting sensitive habitats, species, features and important ecosystem functions that are vulnerable to the effects of human activities. Human-wildland interactions and conservation challenges encountered in the North Area are described to help



THE NORTH AREA SUPPORTS
SOME OF THE MOST IMPORTANT
BIOLOGICAL RESOURCES IN
SOUTHERN CALIFORNIA.

IT IS HOME TO:

- OVER 400 BIRDS, 23 REPTILES, 10 AMPHIBIANS, 41 MAMMALS, AND OVER 900 VASCULAR PLANT SPECIES
- RARE AND LISTED SPECIES INCLUDING LYON’S PENTACHAETA AND CALIFORNIA RED-LEGGED FROG
- SPECIES FOUND NOWHERE ELSE ON EARTH, INCLUDING SANTA MONICA MOUNTAINS DUDLEYA AND AGOURA HILLS DUDLEYA
- SENSITIVE VEGETATION COMMUNITIES INCLUDING OAK WOODLANDS AND RIPARIAN FORESTS

guide policies that minimize adverse effects to natural resources, and that foster responsible stewardship for those living at the wildland interface. Finally, this assessment presents a biological sensitivity ranking system that identifies the conservation priorities for lands within the North Area.

A five-step approach was used to gather information for the biological assessment. This approach is summarized in the graphic below. It included evaluation and determination of habitat sensitivity based on a review of a wide variety of sources including federal, State, and County planning documents, supporting technical studies, various database records, interviews with local experts, and other biological studies conducted throughout the North Area.

Five-Step Approach to Biological Resources Assessment and Habitat Sensitivity Ranking



The Biological Resources Assessment resulted in a novel habitat sensitivity ranking system that identifies conservation priorities for lands within the North Area. The ranking system developed for the North Area is similar to the Santa Monica Mountains Local Coastal Program in providing a tiered system with different protections afforded to each habitat rank. Each ranking includes criteria along with the corresponding level of protection to provide property owners with a planning tool to identify the requirements for developing property with biologically sensitive resources. This approach facilitates responsible development and resource protection in the Santa Monica Mountains North Area and supports the overall goal of the SMMNAP to effectively protect the invaluable natural resources of the region for generations to come.

Four Habitat Sensitivity Rankings (S1, S2, S3, and S4) are recommended for the North Area. The proposed Habitat Sensitivity Rankings for the North Area are summarized below.

S1 Habitat: Habitat of Limited Distribution, Particular Rarity, or Important Habitat Function

- Lands that support the rarest and most sensitive resources often play essential roles in ecosystem function and are worthy of the highest-level conservation.
- Development is highly restricted in areas with S1 habitat.

S2 Habitat: Intact, but Broadly Distributed Habitat

- Lands that support intact native vegetation communities, and which may include some rare species, but are widespread in the North Area.
- Development may occur in areas with S2 habitat provided avoidance and, minimization and mitigation requirements/measures are implemented.

S3 Habitat: Disturbed, Non-Native, and Cleared Habitat

- Lands that support non-native and ruderal vegetation, disturbed, or cleared habitat that are expected to have lower habitat function than other natural lands.
- Development will be less restricted in areas with S3 habitat.

S4 Habitat: Developed and Agricultural Lands

- Lands that support existing residential or commercial development, other facilities, or agricultural practices.
- Development is least restricted in areas with S4 habitat.

In addition, the Biological Resources Assessment includes a list of Habitat Sensitivity Indicators (including both species and vegetation communities) to assist landowners, planners, and biologists in identifying the presence of sensitive habitat and the applicability of the S1 or S2 rankings on specific properties. The presence of an S1 or S2 indicator on a property would require further consideration during a project's planning and review process.

Biological Resources Assessment

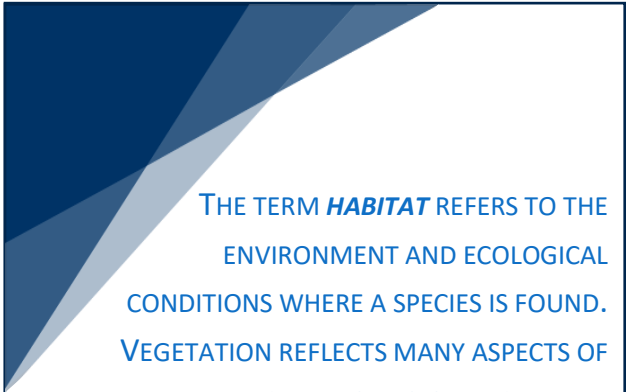
1. INTRODUCTION

This Biological Resources Assessment establishes a framework for categorizing and identifying biological resources while maintaining the County's objective to streamline and facilitate future development in the North Area. This report will support preparation of the update to the Santa Monica Mountains North Area Plan (SMMNAP) and Community Standard District (CSD) and in the environmental evaluation of the SMMNAP and CSD. The results of the biological assessment will serve as a guide for where and when protective measures are needed for biological resources.

The purpose of this Biological Resources Assessment is two-fold: (1) to provide a description of the biological resources of the North Area, including unique and sensitive resources, and (2) to develop habitat sensitivity rankings, which identify the areas and features most in need of protection in order to guide development in the North Area in a sustainable, balanced manner that minimizes impacts to the exceptional natural resources of the North Area.

1.1 Approach to Biological Resources Assessment and Habitat Sensitivity Rankings

The goal of the North Area Plan (NAP) is to maximize the conservation of the area's natural environment, to recognize the opportunities and constraints that the land imposes, to accommodate new uses that minimize impacts on the natural environment, and to ensure that new development is compatible with and enhances the quality of existing communities. It provides for a wide range of public and private recreational opportunities (County of Los Angeles, 2000). In effect, it seeks to "let the land dictate the type and intensity of use." To meet this guiding principle and to achieve the goals of the NAP, the best available information on the biological resources of the North Area was compiled and synthesized to develop a Habitat Sensitivity Ranking system that identifies the conservation priorities for lands within the North Area. The biological sensitivity ranking system developed for the North Area is similar to that of the Santa Monica Mountains Local Coastal Program (LCP) in that it provides a



THE TERM **HABITAT** REFERS TO THE ENVIRONMENT AND ECOLOGICAL CONDITIONS WHERE A SPECIES IS FOUND. VEGETATION REFLECTS MANY ASPECTS OF HABITAT, INCLUDING REGIONAL CLIMATE, PHYSICAL STRUCTURE, AND BIOLOGICAL PRODUCTIVITY AND FOOD RESOURCES (FOR MANY WILDLIFE SPECIES). THUS, VEGETATION IS A USEFUL OVERARCHING DESCRIPTOR FOR HABITAT. HOWEVER, HABITAT VALUE DEPENDS ON A VARIETY OF ECOLOGICAL FACTORS SUCH AS PATCH SIZE, DISTURBANCE LEVEL, AND PROXIMITY TO DEVELOPMENT OR OTHER HABITAT TYPES.

tiered system, with different protections afforded to each rank. The Habitat Sensitivity Ranking System supports the creation of land use policies that direct development to the most appropriate areas while preserving and protecting the most sensitive resources.

The information presented in this report was compiled from agency planning documents and supporting studies for jurisdictions within the Santa Monica Mountains, database records, and interviews with local experts, as well as field studies and habitat assessments conducted throughout the North Area. Comprehensive vegetation mapping data were obtained from the National Park Service (NPS) (CDFG et al., 2006; AIS and ESRI, 2007). The process used to document the biological resources of the North Area and to develop the Habitat Sensitivity Ranking System included five steps as summarized below:

Step 1: Compile Vegetation and landform classification and mapping

- Obtain and review existing sources of vegetation data and identify important landforms
 - Use vegetation and landform data from the NPS as the base layer to assess habitat sensitivity
 - Map vegetation and landform data for the North Area
- Field-verify selected areas for accuracy and update maps to reflect land use changes as needed

Step 2: Review Existing Literature and Available Databases

- Review information from multiple sources including federal, State, and County planning and resource documents; species lists from California Department of Fish and Wildlife
- Collate information and map resource data
- Assess accuracy and precision of data through field visits and aerial photography
- Interview local biological resources experts to obtain additional information regarding the North Area

Step 3: Consider the Accuracy and Precision of the Best Available Data

- Identify appropriate data layers for mapping
- Determine how the data can be used to predict sensitivity
- Consider value and quality of data (and data sources) for developing sensitive habitat or species lists

Step 4: Evaluate Rarity or Sensitivity and Assign Habitat Sensitivity Rankings

- Consider existing legal protections for resources
- Evaluate distribution and quality of resource in the North Area relative to the larger region
- Weigh factors to identify which communities or resources are most/least sensitive
- Develop and define hierarchical ranking system
- Rank species/habitats based on rarity or sensitivity
- Provide rationale for ranking, including methodology

Step 5: Finalize Habitat Sensitivity Rankings and Habitat Sensitivity Indicators

- Present Habitat Sensitivity Rankings and Habitat Sensitivity Indicators
- Describe how the system should be considered when planning development in the North Area

1.2 Report Organization

The results of five-step approach are outlined throughout this report. Section 2 provides an overview of the species, vegetation, and ecological conditions within the North Area, including species of highest conservation concern. Planning for these resources can impact proposed development – and guide conservation priorities – and current information on their status and distribution is constantly being updated.

Section 3 provides information on living and coexisting with wildlife, sensitive habitats, and other biological resources to ensure that generations to come can experience the natural beauty and biodiversity of the North Area. In addition to highlighting the important biological resources of the North Area, Sections 2 and 3 provide the context for the development of the sensitivity rankings presented in Section 4.



Equestrian and hiking trail near Chesebro Road

Section 4 includes a detailed description of how the five-step approach led to the development of the habitat sensitivity rankings. This section also describes the four rankings proposed for the North Area and identifies habitat sensitivity indicators that help to identify sensitive resources. Recommendations on the level of protection warranted at each Habitat Sensitivity Ranking level are also found in Section 4, which provides a guide for landowners, planners, and other interested parties on how to determine habitat sensitivity for a given parcel. The data that support the Habitat Sensitivity Rankings developed herein represent the best available

information for the North Area, however, implementation of the Habitat Sensitivity Ranking System would require site-specific verification during the development application process.

2. THE SANTA MONICA MOUNTAINS NORTH AREA

2.1 General Description of Planning Area

The Santa Monica Mountains North Area includes 33 square miles of unincorporated Los Angeles County lands from the U.S. 101 freeway corridor south to the Coastal Zone boundary (see Figure 1 in Attachment 1). The planning area consists of five discrete land types: urbanized areas, rural residential, ranches, vineyards, and open space. The North Area includes portions of the Santa Monica Mountains National Recreation Area administered by the NPS, California State Park lands, and other protected areas. Approximately 35 percent of the North Area consists of conservation and park lands (see Figures 1 and 2 in Attachment 1).

The North Area boundaries are jurisdictional and do not follow specific ecological divisions. Therefore, the description of biological resources presented in this report includes the known resources of the North Area as well as those in adjacent areas of the greater Santa Monica Mountains and Simi Hills. Many of the vegetation communities or habitats and the species that occur in these areas span jurisdictional boundaries in the region. Disturbance or conservation at one location can ripple across boundaries and affect resources in other jurisdictions; therefore, approaches to land use planning should consider the ecology of the Santa Monica Mountains to ensure landscape-level conservation goals and responsible growth are realized.

2.1.1 Ecoregion

The North Area is located within the South Coast ecoregion and supports some of the most important biological resources in southern California. This rich expanse of coastal landscape is dominated by the Santa Monica Mountains and characterized by deep canyons, expansive oak woodlands, coastal scrub, and a wide variety of plants and wildlife, some of which are found nowhere else in the world. Although highly rural in character, the North Area is located adjacent to large urban centers and small communities are intermingled with large tracts of open land. This wildland-urban interface presents a unique set of challenges and opportunities for residents to coexist with and conserve the wealth of species and habitats in the North Area.

2.1.2 Topography

The North Area is within the Santa Monica Mountains, an east-west trending mountain range within the Transverse Ranges, which spread over 40 miles between Point Mugu in Ventura County and Glendale in Los Angeles County. Most of the range is bounded to the south by Santa Monica Bay, with the eastern portion stretching inland to divide the Los Angeles Basin from the San Fernando Valley to the north. The western portion of the range separates the Conejo Valley to the north from the Malibu coast.

Much of the North Area consists of steep vegetated slopes in excess of 25 percent grade (see Figure 2 in Attachment 1), and elevations range from 550 feet to 2,508 feet above sea level. The North Area supports many well-known features including Ladyface Mountain located south of Agoura Road at Kanan Dume Road, Sugar Loaf Peak near Paramount Ranch, the iconic Saddle Rock (visible for miles),

and Turtle Rock located near the Rocky Oaks Park off Mulholland Drive at Kanan Dume Road. Prominent ridgelines and sandstone rock outcrops are also present near Old Topanga Road.

The unique geology of the region is not only visually appealing, it also provides the distinctive outcrops and soil parent material that support rare plant communities. Some of the mountains are volcanic in nature, and over time have developed into unique soil conditions and rock outcrops that support some of the rarest plants on earth. The complex topography of the North Area also includes many small valleys and canyons supporting narrow plains, deeply incised channels, and thickly wooded hillsides supporting a broad variety of native plants and wildlife.

2.1.3 Climate

Natural conditions in the North Area are dictated by climate; climate can greatly influence the abundance and distribution of many plants and wildlife. The Santa Monica Mountains experience a classic Mediterranean climate, with hot, dry summers and cool wet winters. A Mediterranean climate is globally rare, occurring in only six places on Earth. Most of the annual precipitation comes in the form of winter rains. Mean annual precipitation in the region varies from about 12 to approximately 14 inches, although some mountain faces may experience substantially more rainfall. Annual rainfall totals often vary with some years experiencing little to no rain while El Niño conditions may result in multiple extreme rain events. Long-term monitoring data for Los Angeles County shows the region rarely receives the average annual precipitation, instead the region cycles through periods of above-average rainfall to periods of drought conditions (CCWMP, 2004). Snow is uncommon in the region, occurring only rarely during unusually cold winter storms. While coastal fog is common in the mornings, most of the North Area receives less fog compared to coastal areas and coastal-facing slopes.

2.1.4 Hydrology

The mountainous regions of the North Area support numerous creeks, streams, and drainages (see Figure 3 in Attachment 1). The major watersheds in the North Area include Malibu Creek (including Las Virgenes Creek and Medea Creek), Arroyo Calabasas, Topanga Canyon, Las Trancas Creek, Zuma Creek, and Los Alisos Creek. These watersheds support riparian habitat and are home to numerous birds, amphibians, fish, and other wildlife, some of which are special-status species. Stream flow in the region varies and is often directly related to large-scale precipitation events. Several streams provide year-round surface water including Las Virgenes, Medea, and Topanga. Historically, many of the smaller creeks and streams of the North Area may have supported larger flows or year-round water; however, development and ground water pumping may have affected surface flows in some locations. Conversely, some intermittent or ephemeral creeks and streams in the North Area now support flows for extended periods because of over irrigation and urban run-off.

Many drainages in the North Area are located downstream of the urbanized Conejo Valley and routinely convey urban and agricultural run-off. While this runoff can provide a consistent source of water, it also contains residual fertilizers, pesticides, motor oil, soaps, and other pollutants. A fairly consistent pattern of ecological degradation has been observed in streams that drain urban areas across the globe, and ecologists have termed this phenomenon the “Urban Stream Syndrome.” Symptoms include more

frequent and larger flow events, higher concentrations of nutrients (e.g., fertilizers) and contaminants, changes to channel banks and stability, and reduced biodiversity predominantly consisting of human-tolerant (usually nonnative and invasive) species (Walsh et al., 2005). Urban streams in the North Area have seen a decline of native species and some streams have lost populations of California tree frog (*Pseudacris cadaverina*) altogether. However, several local drainages feature natural hydrology, at least at their upper reaches, such as Las Virgenes Creek, and support several rare species, including California red-legged frog.

In addition to the many creeks and drainages, the North Area supports numerous seeps and springs where groundwater surfaces through cracks and fissures. Some of these are in existing stream channels or weep from the sandstone and volcanic slopes of the North Area. Others underlie grassy meadows within chaparral or coastal sage scrub and maintain moist soil late into the spring and early summer. These features are extremely important to wildlife and are often associated with a high diversity of rare plants, lichens, or bryophytes. These microhabitats are also found in the far western Santa Monica Mountains into Ventura County; many microhabitats are threatened by fragmentation, urban encroachment, fuel modification and recreational uses.

2.1.5 Wildfires

Wildfires are a characteristic and defining feature of the North Area and periodically burn large tracts of land in the North Area. Major recent fires include the Calabasas (1996) and Topanga (2005) fires. Although fire is an important and natural process in the coastal scrub and chaparral ecosystems, wildfires pose a risk to public safety. Total fire suppression policy has been practiced in the North Area for many decades. Wildfires can also have damaging effects on natural resources depending on their intensity and frequency. Scrub and chaparral are tolerant of a moderate frequency of wildfire and will regenerate on a burned site within several years after a fire (except when over-frequent re-burning converts these shrublands to non-native grasslands). Early successional plant species, including native and non-native grasses and herbs, will often appear shortly after the fire and may be common for several years. The ecological effects of fire on oaks and other vegetation vary depending on the frequency and intensity of fires. Wildfires are an inevitable and ecologically important process within oak woodland ecosystems (McCreary, 2004) and have generally been considered to play a role in oak recruitment. However, severe and frequent fires can kill even mature oaks. Oak trees in the North Area have been lost to historic and recent wildfires and the survival of some oak trees may be at risk from altered fire regimes. Increased fire frequency on the same site may change the type of vegetation to early successional species such as native and non-native grasses and herbs. In addition, changes in vegetation communities from wildfires may dramatically affect habitats for plant and animal species and may influence the distribution of species in the North Area.

Despite the perception that wildland fire is devastating to animals, fires generally kill and injure a relatively small proportion of wild animal populations. The habitat changes caused by fire affect wildlife populations and communities much more profoundly than fire itself. Fires often cause a short-term increase in productivity, availability, or nutrient content of forage and browse. These changes can contribute to substantial increases in herbivore populations, however, potential increases are moderated by the animals' ability to thrive in the altered, often simplified, structure of the post-fire

environment. Large, high-intensity fires that denude a landscape of many shrubs and trees reduce habitat quality for species that require dense cover and improve it for species that prefer open sites.

Large wildfires can affect water quality through increased rates of erosion and sedimentation from denuded hillsides, increased water temperature from decreased vegetative stream shade, changes in water chemistry and increases in chemical pollutants, and impacts to aquatic biota as a result of the use of fire retardants in fire suppression. These impacts have become more severe as fire extent and frequency have increased.

2.2 Local Setting

The mountainous topography and limited road system has shaped development in the region. Many of the small cities, rural communities, and homes occur along the small valleys and rolling foothills of the Santa Monica Mountains. Many of these communities occur along the network of roads that cross the Santa Monica Mountains including Topanga Canyon, Malibu Canyon, Kanan Dume Road, Mulholland Highway, and Westlake Boulevard. In a few locations roads lead to small mountain communities and isolated home sites. Many of these communities occur in or near park lands or natural areas supporting a wide variety of sensitive biological resources that characterize the Santa Monica Mountains North Area.

The following discussion describes the local setting within the North Area. Refer to Figure 1 (Existing Land Protection Designations) and Figure 2 (Unincorporated County Lands and Designations) for a graphical depiction of the North Area boundaries (all figures are in Attachment 1).

2.2.1 The Western Boundary of the North Area to Las Virgenes Canyon Road

The westernmost portion of the North Area is bounded by the Ventura County line to the west, the City



Approximately 35% of the North Area is park land

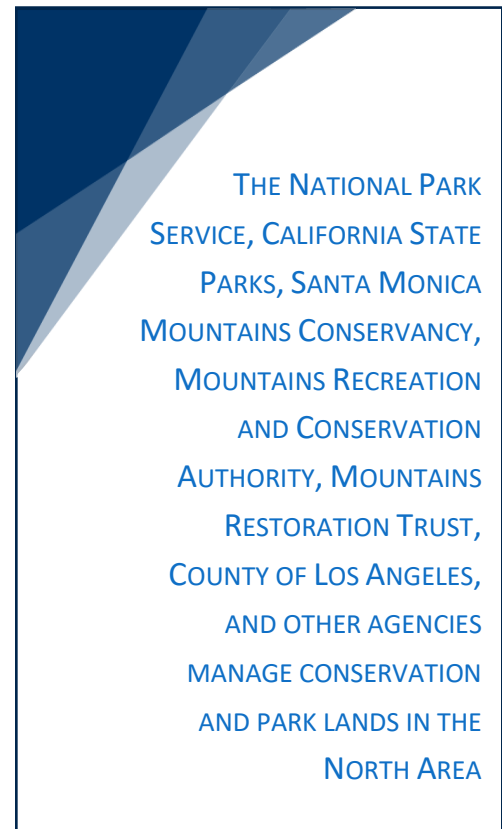
of Westlake Village to the north, and the Coastal Zone to the south. Small areas of residential development occur along Country Ranch Road and Westlake Boulevard (Decker Road; SR 23), with most of the western portion consisting of natural lands. Several protected areas overlap the westernmost portion of the North Area including lands administered by the NPS and the Mountains Recreation and Conservation Authority (MRCA). The western portion of the North Area supports several large occurrences of redshank chaparral, a regionally rare vegetation community with limited

distribution in the County. Critical habitat for the endangered Lyon's pentachaeta (*Pentachaeta lyonii*) also occurs in the westernmost North Area.

The portion of the North Area west of Kanan Dume Road includes large swaths of open space, with areas of rural development along Mulholland Highway, Triunfo Canyon, and Lobo Canyon. There are a number of vineyards and orchards in this area, particularly in the vicinity of Kanan Dume Road and Mulholland Highway and in Triunfo Canyon. The expansion of vineyards in this area has converted native scrub and chaparral communities. Approximately 94 acres of vineyards and orchards currently occur in the North Area. Protected areas west of Kanan Dume Road include unnamed sites managed by the NPS, MRCA, and the Santa Monica Mountains Conservancy. Other protected areas include Rocky Oaks (NPS), Triunfo Canyon Open Space (MRCA), and Triunfo Creek Park (Santa Monica Mountains Conservancy). An occurrence of Lyon's pentachaeta and a unit of United States Fish and Wildlife (USFWS) designated critical habitat for this species occurs near the western boundary of the North Area.

East of Kanan Dume Road and just north of Mulholland Highway, the Mountains Restoration Trust administers the La Sierra Preserve. The 130-acre preserve and surrounding areas support a variety of habitats including wetlands, seeps, springs, willow riparian woodlands, oak woodlands, grasslands, and chaparral (MRT, 2017). La Sierra Canyon and Triunfo Creek support an exceptional diversity of plants, including species known from only a few locations in the Santa Monica Mountains. These include the state-designated rare and federally-listed endangered Santa Monica Mountains live-forever (*Dudleya cymosa* ssp. *marcescens*); the creek dogwood (*Cornus glabrata*), known only from one other site in the Santa Monica Mountains; the giant chainfern (*Woodwardia fimbriata*); and the ocellated Humboldt lily (*Lilium humboldtii* ssp. *ocellatum*). This portion of the North Area also supports dense stands of big-leaf maple (*Acer macrophyllum*) and California bay (*Umbellularia californica*) which are uncommon in the region. Coast live oak (*Quercus agrifolia* var. *agrifolia*) woodlands are common in this area, and oaks are protected by County ordinance. Other characteristic or unusual plants recorded in the Canyon include maidenhair fern (*Adiantum jordanii*), black cottonwood (*Populus trichocarpa*), leather root (*Hoita macrostachya*), and broadleaf lupine (*Lupinus latifolius*).

Just east of the La Sierra Preserve is the unincorporated community of Cornell and the Seminole Hot Springs area. Rural residential developments ranging from large estates and ranches to the Seminole Springs Mobile Home Park are centered around Mulholland Highway and local landmarks such as the Rock Store on Mulholland Highway and Rustic Canyon General Store & Grill on Kanan Dume Road attract visitors to the community. Several local vineyards and wine-tasting rooms have also been developed in recent years. NPS facilities and parks near the Cornell area include Peter Strauss Ranch and Paramount Ranch. There are additional protected sites managed by the MRCA and NPS, and the North Area



overlaps portions of Malibu Creek State Park. Vegetation includes large expanses of chaparral and coastal sage scrub, with riparian scrub and woodland habitats along drainages such as Medea Creek and Triunfo Creek. Oak savannahs occur over rolling hillsides intermingled with annual grasslands, most commonly along the Cornell Road corridor.

The area between Kanan Dume and Cornell Roads, north of Paramount Ranch, is developed with estate properties. Medea Creek and its associated riparian habitat run through this community. This crescent of land occupies one of the key urban-wildland interface areas in the North Area, with development, including lighting and fencing, right up to the banks of the creek, and ongoing habitat impacts on private lands close to (or directly bordering) public parkland. Medea Creek flows year-round through this area. Heavy rains bring occasional flooding to this area as well, presenting additional management challenges. Lyon's pentachaeta critical habitat is located near the intersection of Kanan Dume and Cornell Roads.

The southern-central portion of the North Area includes the community of Malibou Lake, a private man-made lake created at the confluence of Medea and Triunfo Creeks where they converge to form Malibu Creek (just outside of the North Area). Residential development surrounds the lake, which is a frequent stopover for migrating and wintering waterbirds. The lake is also home to a variety of aquatic plant and animal species otherwise rare or localized in the Santa Monica Mountains. Undeveloped areas on slopes surrounding the lake support abundant rock outcrops and rare volcanic-soil plant communities. A unit of designated critical habitat for Lyon's pentachaeta is located near the Malibou Lake dam area.

Sections of the Las Virgenes and Medea Creek watersheds support exceptionally diverse wildflower populations, and in years of good rainfall, wildflower fields may cover large sections of the canyon slopes. Dense stands of coastal sage scrub and chaparral cover the adjacent hillsides in this area. The area has floristic elements that are characteristic of interior or even desert conditions: an isolated occurrence of California juniper (*Juniperus californica*) is found just east of Ladyface Mountain, along with narrowleaf goldenbush (*Ericameria linearifolia*), both interior plants that are absent elsewhere in the Santa Monica Mountains. Several varieties of live-forever (*Dudleya* spp.) are present on the canyon walls and rock outcrops, including chalk lettuce (*D. farinosa*), lance-leaf live-forever (*D. lanceolata*), and federally-threatened Agoura Hills dudleya (*D. cymosa* ssp. *agourensis*).

Much of the North Area between Cornell Road and Las Virgenes Road overlaps with Malibu Creek State Park and many smaller parcels managed by MRCA and the Mountains Restoration Trust (MRT). In this location, the North Area boundary runs along Las Virgenes



Fran Pavley Meadow, formerly known as the Cheeseboro Meadow, with equestrian property in the background

Road from about Lost Hills Road south to the intersection of Mulholland Highway. An important feature of this area is a small tributary of Las Virgenes Creek (and ultimately Malibu Creek) named Liberty Canyon. The underpass of U.S. 101 at Liberty Canyon Road is in a relatively rural location with less vehicular traffic than other freeway crossings. This crossing is one of the few active wildlife passage areas along the entire extent of U.S. 101 through the Santa Monica Mountains, and is the site of a conceptual proposal to bridge U.S. 101 from north to south to facilitate safe wildlife crossings.

South of U.S. 101, development is present on both sides of Liberty Canyon Road for just over 0.5 mile, before Liberty Canyon Road becomes an unpaved access road that enters open space in Malibu Creek State Park. Liberty Canyon Creek follows a concrete drainage channel along the east side of Liberty Canyon Road then it transitions to a natural creek with riparian habitat near the State Park. Most of the paved portion of Liberty Canyon Road and the residential developments on either side are within the City of Agoura Hills; however, the southwestern portion of the community as well as a small island of residential development including Marks Road, Kays Lane, and David's Road are in unincorporated Los Angeles County.

North of U.S. 101, the North Area includes two discrete areas. The western area is primarily parkland surrounding the Calabasas Landfill, and includes the Chesebro Meadow and Chesebro Canyon area, and the Liberty Canyon Open Space, a residential neighborhood along Mont Calabasas Drive west of Las Virgenes Road, which forms the eastern boundary of this portion of the North Area. The northwest portion of this section of the North Area is within the NPS's Santa Monica Mountains National Recreation Area, including the Chesebro and Palo Comado Canyons unit and the adjacent Upper Las Virgenes Canyon Open Space Preserve (the former Ahmanson Ranch). The MRCA's Zev Yaroslavsky Las Virgenes Highlands Park is adjacent to the south side of the Upper Las Virgenes Open Space. The North Area boundary skirts around the Saratoga Ranch neighborhood north of U.S. 101 and west of Lost Hills Road. Despite pockets of residential development and the landfill, this area is extremely important as a wildlife corridor linking the Santa Monica Mountains to the Simi Hills and other areas to the north, as it is the only area with significant open space both north and south of U.S. 101. Chesebro Meadow has been a recent focus for preservation as it directly links parklands to the proposed Liberty Canyon freeway overcrossing. The Meadow was proposed for development; however, in late 2016 it was acquired by the MRCA to preserve its critical role in regional wildlife movement. It was renamed the "Fran Pavley Meadow" as a tribute to retiring State Senator Fran Pavley, the first mayor of Agoura Hills and a longtime advocate of environmental protection.

West of the Liberty Canyon area, the North Area boundary follows the north-facing side of an unnamed ridge at the southern boundary of the City of Agoura Hills westward towards Ladyface Mountain, the prominent peak that forms the southern backdrop to the City. Coastal sage scrub transitions to chaparral at higher elevations, and the terrain in this area is steep and rugged. Little development and few roads occur here, although several hiking trails provide recreational access to the ridgelines and the peak of Ladyface Mountain. This area has seen numerous proposals for development, many of which have been consolidated into the "Agoura Village" project along Agoura Road, which borders the North Area to the north.

The numerous canyons and ridges in this area support the federally-threatened Agoura Hills dudleya, and one of the nine critical habitat areas in Los Angeles County for the state- and federally-endangered Lyon's pentachaeta, as well as other uncommon and rare plants such as Ojai navarretia (*Navarretia ojaiensis*), Fish's milkwort (*Polygala cornuta* var. *fishiae*), Sonoran maiden fern (*Thelypteris puberula* var. *sonorensis*), and an occurrence of the California juniper that is on the edge of the species' range. The northern boundary of the North Area crosses Kanan Dume Road where Lindero Canyon formerly joined Medea Creek and continues its contour west along the north-facing ridge of Ladyface Mountain.

2.2.2 Las Virgenes Canyon Road to the Eastern Boundary of the North Area

The eastern portion of the North Area begins on the eastern side of Las Virgenes Road at its intersection with Mulholland Highway. Here, the North Area extends north of Mulholland Highway and encompasses Stokes Canyon, which includes chaparral, oak woodlands, and grasslands, and includes rural developments. There is a small perennial spring in Upper Stokes Canyon that provides an important source of water to local wildlife. Horse properties are common along Stokes Canyon and a large private development was recently constructed near this area. Protected lands administered by the NPS and MRCA also occur in this area.

The North Area continues eastward in a narrow band, crossing Mulholland Highway. Scattered residential developments are located within mountainous areas dominated by coastal sage scrub, chaparral, annual grasslands, and oak woodlands. Many small creeks and drainages occur in this area, including Cold Creek. Calabasas Peak and surrounding protected areas administered by MRCA are east of Mulholland Highway and overlap portions of the North Area. Calabasas Peak is 2,163 feet in elevation and several hiking trails access the area including the Calabasas Peak Mountainway fire road. Dense chaparral and huge rocky outcrops characterize the steep terrain in this area.

East of Calabasas Peak, the North Area includes large swaths of chaparral and sage scrub communities interspersed with pockets of coast live oak woodland. Rural residences and small communities occur throughout this area. Parkland administered by the County of Los Angeles and MRCA and the Calabasas Highlands Open Space occurs in this area.

Most of the community of Old Topanga in Old Topanga Canyon is in the North Area. Open space areas include dramatic rock outcrops interspersed with oak woodlands, small creeks and a variety of scrub and chaparral communities. Old Topanga supports a variety of rural residences, schools, and horse properties. The steep slopes are covered with thick chaparral while oak woodlands are common along the riparian corridors. Riparian habitat here supports several rare species, including southern western pond turtle (*Actinemys pallida*) and probably support ringtail cat (*Bassariscus astutus*). Special-status plants in this area include large stands of California black walnut (*Juglans californica*) and Plummer's mariposa lily (*Calochortus plummerae*).

The easternmost portion of the North Area includes extensive development along the northern portion of Topanga Canyon Boulevard. Natural features in this area include Henry Ridge, Greenleaf Canyon, Topanga Canyon and Creek, Santa Maria Creek, and Garapito Creek. This part of the North Area is characterized by developments interspersed with open space. Much of the open space is parkland administered by MRCA and the Santa Monica Mountains Conservancy. Some of these properties include

Summit Valley Edmund D. Edelman Park, Top of Topanga Overlook, Topanga Canyon-Canyon Oaks Open Space, and the southern portion of Mulholland Gateway Park. The Mountains Restoration Trust administers the Henry Ridge Open Space. Topanga Creek provides year-round water in some areas and supports important riparian habitat. Southern western pond turtle, ringtail, and white-tailed kite (*Elanus leucurus*) are known from this area.

The eastern portion of the North Area north of U.S. 101 includes the gated community of Mountain View Estates, Gates Canyon Park (a neighborhood park administered by the City of Calabasas), the Upper Las Virgenes Open Space Preserve along Crummer Canyon Road, and open space and developed areas along a narrow corridor between the U.S. 101 and the City of Hidden Hills.

2.3 Natural Resources of the North Area

The Santa Monica Mountains support 41 mammal species, 113 breeding bird species, 23 reptile species, 10 amphibian species, and 894 vascular plant species (Rundel and Tiszler, 2007; NPS, *no date*). Over 34 percent of the North Area is within parklands administered by local, state, and federal agencies and conservation groups, and many of the unique biological resources are on protected lands. It should be noted that the North Area has not been systematically surveyed, and the understanding of rare species and their distribution relies primarily on field studies and casual observations of biologists on public lands, or from more intensive but localized surveys of private lands, usually conducted to support land use applications for proposed development.

The North Area is notable for the high diversity of habitats in a relatively small area. This diversity in habitats in turn supports a wide variety of plant and wildlife species. Although most species found in the North Area also range more broadly throughout the region or the state, the North Area lies at the edge of the range, or supports relict populations of, a number of species. For example, the North Area contains the southernmost viable stands of valley oak woodlands (*Quercus lobata*), and some of the largest remaining California walnut (*Juglans californica*) woodlands (CDFG et al., 2006).

California red-legged frogs, once believed extirpated from the area, have been introduced in Las Virgenes Creek and have been recently detected near the Highway 101 overpass. In addition, breeding was confirmed by the National Park Service for another introduced population at an undisclosed location in the Santa Monica Mountains. Over time, California red-legged frogs may continue to disperse south along Las Virgenes Creek. Western yellowbellied racer (*Coluber constrictor mormon*) was once common in southern California, but populations of this species have declined in the region (Cooper and Hamilton, 2014).

Several birds are either rare or uncommon in the North Area. White tailed-kite is known from just a few areas of the North Area near Topanga Canyon State Park and Malibu Creek State Park. Large open grasslands and adjacent riparian areas along Las Virgenes Creek and the King Gillette Ranch provide foraging habitat for this species. Western kingbird (*Tyrannus verticalis*), lark sparrow (*Chondestes grammacus*), and Bell's sparrow (*Artemisiospiza belli*) have limited distribution in the North Area. (Cooper and Hamilton, 2014)

Several mammals have extremely limited distributions in the North Area including Pacific kangaroo rat (*Dipodomys agilis*), spotted skunk (*Spilogale gracilis*), western gray squirrel (*Sciurus griseus*), American badger (*Taxidea taxus*), and ringtail (*Bassariscus astutus*) (Cooper and Hamilton, 2014). American badger and ringtail are at risk from collisions with vehicles and secondary toxicity due to domestic and agricultural use of rodenticides.

2.3.1 Flora, Natural Communities, and Other Landforms

Flora

Despite its proximity to urban development and the greater Los Angeles area, the North Area exhibits exceptional biodiversity. The unique geology, including several rare soils, support an abundance of native plant species. Several species are endemic to the region and occur nowhere else in the world. Nearly 900 species of vascular plants have been recorded in the Santa Monica Mountains (Wishner, 1997), and most of these may be found in the North Area.



Wildflowers blooming within openings in coastal sage scrub

During springtime, colorful annuals are found across the North Area. Wildflowers bloom along roads and meadows while the hills come alive in deep purples and whites as colorful native shrubs such as ceanothus bloom. The abundance of wildflowers is a function of the underlying soils and different vegetation communities that occur across the North Area. Thin-soiled habitat occurring near volcanic areas and sandstone peaks are home to many unique flower assemblages, as are heavy clay soils, which often occur as “lenses” overlaying more porous volcanics. This are often identified by a burst of early-spring annual forbs, such as goldfields (*Lasthenia* spp.), ground pink (*Linanthus dianthiflorus*), sanicles (*Sanicula* spp.), and

others. Geophytes such as mariposa lilies (*Calochortus* spp.), chocolate lily (*Fritillaria biflora*), and *Delphinium* are found locally, with different species appearing throughout the spring.

Narrow leafed milkweed (*Asclepias fascicularis*), Indian pink (*Silene laciniata*), yarrow (*Achillea millefolium*), various cryptanthas (*Cryptantha intermedia*, *C. micromeres*, and *C. muricata*), and branching phacelia (*Phacelia ramosissima*) can be commonly observed. Southern California locoweed (*Astragalus trichopodus*), elegant clarkia (*Clarkia purpurea* ssp. *viminea*), annual coreopsis (*Leptosyne bigelovii*), Chinese houses (*Collinsia heterophylla* var. *heterophylla*), California gilia (*Gilia achilleifolia*), sapphire woolstar (*Eriastrum sapphirinum*) and small evening primrose (*Camissoniopsis micrantha*) are just some of the species that are seen along many of the North Area’s roadways and trails. In some locations, fields of slender mariposa lily (*Calochortus clavatus* var. *gracilis*) and Catalina mariposa lily (*Calochortus catalinae*) can be seen, and globe lilies (*Calochortus albus*) can be found in shady north-slope areas.

In addition to flowering plants, the Santa Monica Mountains and North Area is home to a variety of non-vascular plants including lichens and bryophytes. Some of these are extremely rare and there remains much to be learned about these species. Lichens are organisms that are part fungi and part cyanobacteria. Bryophytes are a diverse group that include mosses, liverworts, and hornworts. In the North Area, these species may occur in a variety of locations including areas influenced by coastal fog, thin-soiled habitat, moist areas including north facing slopes, or growing on plants in old growth chaparral communities (Knudsen and Magney, 2006). They are often a component of soil crusts and indicate areas that have not been subject to extensive disturbance.

Natural Communities and Landforms

The vegetation of the Santa Monica Mountains is extremely varied and can be categorized broadly as chaparral, coastal sage scrub, riparian scrub, riparian woodlands, oak woodlands, and annual grasslands. The North Area supports several vegetation types that are locally common but restricted regionally, such as greenbark ceanothus (*Ceanothus spinosus*) shrubland and ashy buckwheat (*Eriogonum cinereum*) shrubland.

Plant community classification is often hierarchical; that is, smaller categories defined as “associations” or “alliances” may be nested within larger categories, such as chaparral or coastal sage scrub. Within each general vegetation category, the “alliances” are usually defined by the presence of dominant or co-dominant species that exhibit the same general structure and similar ecological attributes as the broader category but vary somewhat in the species composition. Often these subtle differences in species composition reflect various levels of moisture availability, sun exposure, whether the area has experienced a recent or historic fire, soil differences, and different levels of disturbance.

Table 1 identifies the acreages of each vegetation category mapped in the North Area, and Figure 4 (Attachment 1) illustrates the vegetation distribution. See Attachment 3 for a detailed description of the vegetation mapped in the North Area by the NPS and cooperating agencies, including the alliances that fall within each category.

Table 1. Natural Communities and Landforms in the North Area			
Vegetation/Landform Type	Acres on Public Lands	Acres on Private Lands	Total Acres in North Area
Chaparral	2,997	5,572	8,569
Coastal Sage Scrub	1,519	1,858	3,377
Riparian Habitats	341	455	796
Oak Woodlands	630	608	1,238
Annual Grasslands	1,300	863	2,163
Wetlands and Water	7	51	58
Rock Outcrops	13	43	56
Vineyards and Other Agriculture	0	94	94
Disturbed, Developed, and Ruderal	212	4,014	4,226
Exotic Vegetation	18	89	107
Total:	7,037	13,647	20,684

Each general vegetation or land cover type is described along with its distribution in the North Area and the corresponding vegetation alliances, as mapped in the NPS vegetation project (Sawyer, Keeler-Wolf and Evens, 2009; CDFG et al., 2006; AIS and ESRI, 2007).

Chaparral

Chaparral consists of evergreen, broad-leafed or needle-leafed, sclerophyllous (hard-leafed), medium height to tall shrubs that form a dense cover on steep slopes below 5,000 feet in Southern California. Dominant species found within this community include various species of ceanothus (*Ceanothus* spp.), toyon (*Heteromeles arbutifolia*), scrub oak (*Quercus berberidifolia*), sugar bush (*Rhus ovata*), holly-leaved cherry (*Prunus ilicifolia*), holly leaf redberry (*Rhamnus ilicifolia*), chamise (*Adenostoma fasciculatum*), laurel sumac (*Malosma laurina*), and manzanita (*Arctostaphylos* spp.). This plant community occurs throughout the North Area and occupies most of the higher elevations and steep slopes.

Redshank chaparral is a subtype in which redshank (*Adenostoma sparsifolium*) is the dominant species with lesser amounts of other chaparral species. This community is less common in the North Area compared to other types of chaparral, and it is noteworthy because it is disjunct from extensive redshank stands located in the Peninsular Ranges, to the southeast. It occurs in small patches, on steep slopes in the far western portion of the North Area. It often occurs within a mosaic of other chaparral communities and is adapted to slightly cooler and drier microhabitats.



Chaparral Habitats in the Santa Monica Mountains

- Represent 41% of all land area with native vegetation
- Support 31% of all native species in the North Area



Riparian Habitats in the Santa Monica Mountains

- Represent 4% of all land area with native vegetation
- Support 24% of all native species in the North Area

Source: Tizsler and Sagar, 2012

Chaparral is a shrub-dominated community that often intergrades with coastal sage scrub, described below. Although these vegetation types share many common shrub and herbaceous species, the relative abundance of the species varies between the two. In addition, chaparral tends to be denser, with taller shrubs, whereas coastal sage scrub often contains larger openings between shrubs. Due to their overall similar structure and composition, many wildlife species in the North Area are widespread throughout the shrub-dominated communities. There are 8,569 acres of mapped chaparral in the North Area; approximately 2,997 acres occur on public lands.

Coastal Sage Scrub

Coastal sage scrub consists of drought-deciduous, low, soft-leaved shrubs and herbs on gentle to steep slopes under 1,500 feet in elevation. This community is dominated by California sagebrush (*Artemisia californica*), California buckwheat (*Eriogonum fasciculatum*), black sage (*Salvia mellifera*), purple sage (*Salvia leucophylla*), and California encelia (*Encelia californica*). Coastal sage scrub is distributed throughout the North Area along dry ridgelines, slopes, and areas previously disturbed by fire. Many coastal sage species can regenerate after fires by sprouting new leaves and branches from the base of the burned shrub. As a fire-prone ecosystem, it contains many fire-adapted species and is susceptible to changes in fire regimes. In coastal sage communities, more frequent fire has been shown to shift the competitive advantage toward invasive annual plants (Conlisk et al., 2016).

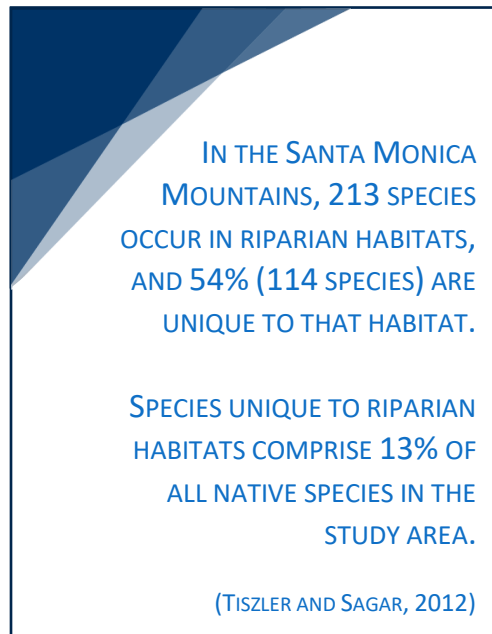


Coastal Sage Scrub

This habitat provides a unique vegetation structure and set of foraging resources that supports certain birds including the State and federally listed California gnatcatcher (*Polioptila californica californica*) (not currently known to breed in the North Area, but occurs in coastal scrub habitats in the western Santa Monica Mountains), and has experienced rapid decline in the past decade from increasing development of coastal areas within southern California as well as increased fire intervals that result in type conversion to non-native annual grasslands. There are 3,377 acres of coastal scrub mapped in the North Area; approximately 1,519 acres occur on public lands.

Riparian Habitats

Much of the natural riparian vegetation in California has been lost or degraded due to land use conversions to agricultural, urban, and recreational uses; channelization for flood control; sand and gravel mining; groundwater pumping; water impoundments; and various other alterations. Faber et al. (1989) estimated that as much as 95 to 97 percent of riparian habitats have been lost in southwestern California. Riparian communities are considered sensitive and a high priority for inventory by the California Department of Fish and Wildlife (CDFW) (CDFG, 2010).



Riparian habitats are biologically productive and diverse and are the exclusive habitat for several threatened or endangered wildlife species and many other special-status species. Many of these species are wholly dependent on riparian habitats throughout the entirety of their life cycles, while others may utilize these habitats during certain seasons or life history phases. For example, numerous amphibians breed in aquatic habitats, but spend most of their lives in upland areas.

In an otherwise arid landscape, primary productivity in riparian habitats is high due to year-round soil moisture. High plant productivity leads to increased habitat structural diversity and increased food availability for herbivorous animals, and in turn, predatory animals (reviewed by Faber et al., 1989). Insect productivity is also at relatively higher levels in riparian systems. During

the warmer months, large numbers of insects provide a prey base for a diverse breeding bird fauna, including several special-status birds. Structural diversity, including standing dead trees and fallen logs, is also much more evident in riparian systems than those of most regional uplands. Riparian woodlands tend to have multi-layered herb, shrub, and tree canopies, whereas most upland communities have a simpler structure. More complex habitat structure creates a greater diversity of nesting and foraging sites for birds. Similarly, mammal diversity is greater due to higher biological productivity, denning site availability, thermal cover, and water availability. There are 796 acres of mapped riparian vegetation in the North Area; approximately 341 acres occur on public lands.

Riparian Scrub. In the North Area, vegetation mapped as riparian scrub is typically dominated by mulefat (*Baccharis salicifolia*). This vegetation occurs on gentle to steep slopes and is widespread across the North Area in intermittent drainages. It is locally variable, and co-occurring shrubs can include arroyo willow (*Salix lasiolepis*), coyote brush (*Baccharis pilularis*), tree tobacco (*Nicotiana glauca*; nonnative), California sagebrush, and laurel sumac. Riparian scrub has sparse tree cover, but emergent or scattered coast live oak, California sycamore (*Platanus racemosa*), and red willow (*Salix laevigata*) can occur. Although alliances dominated by mulefat are not considered sensitive by CDFW, they are considered sensitive for the purposes of this report because riparian habitats are increasingly rare in California and they provide habitat for a disproportionately high number of species compared with most upland habitats, including rare and listed species. There are 11 acres of riparian scrub mapped in the North Area, with approximately 6 acres on public lands.

Riparian Woodlands. Riparian woodlands occur along perennial and intermittent streams in the North Area and have a well-established tree layer usually with sparse to open shrub and herbaceous layers. Many riparian corridors within the North Area contain perennial sections that are among the last remaining major drainages in the Santa Monica Mountains in an undeveloped condition. In the canyon bottoms are riparian forests, which are sensitive habitats because of their rarity and historic losses to

channelization and development. Most riparian forests in the Santa Monica Mountains are comprised of California sycamore and coast live oak, Fremont and black cottonwood (*Populus fremontii* ssp. *fremontii* and *P. trichocarpa*), and leatherleaf ash (*Fraxinus velutina*). Riparian woodlands can be dominated or co-dominated by California sycamore, red willow, and arroyo willow. California walnut and valley oak can also be present. Riparian communities support abundant wildlife diversity including amphibians and birds dependent on surface moisture, mule deer (*Odocoileus hemionus*), and mountain lion (*Puma concolor*), the latter of which is an indicator of large-scale ecosystem health (County of Los Angeles, 2012). There are 395 acres of riparian woodland mapped in the North Area; approximately 167 acres occur on public lands.

While not typically considered a true riparian woodland, California bay woodland is usually associated with a water source such as seeps or drainages below seeps. It occurs on moist north-facing concave to neutral slopes and protected ravine and canyon bottoms, but, can also occur on similar south facing situations. Steepness can vary from gently sloping to extremely steep on bottoms to upper slopes. There are 88 acres of California Bay woodland mapped in the North Area; approximately 43 acres occur on public lands.



Riparian woodland

Similarly, California walnut woodland is not restricted to stream channels but occurs on more mesic sites than most other upland vegetation. It is an open woodland dominated by Southern California black walnut. Occurring on moist, fine-textured soils, the open tree canopy usually has a grassy understory. Other characteristic species include coast live oak, sugar bush, and skunk bush. This community occurs in shaded ravines and on north-facing slopes, primarily with formations of marine sediments (J. Decruyenaere, pers. obs.). The North Area includes some of the largest remaining stands of California walnut woodland (AIS and ESRI, 2007). There are 306 acres of California walnut woodland mapped in the North Area; approximately 128 acres occur on public lands.

Oak Woodlands

Coast live oak woodland is dominated by coast live oak and usually has a poorly developed shrub layer, which may include toyon, currant and gooseberry (*Ribes* spp.), laurel sumac, elderberry (*Sambucus mexicana*), and mulefat. Some coast live oak woodlands in the area include scattered California walnut or valley oaks. This community occurs throughout the North Area, often along canyon bottoms and more mesic, north-facing slopes. Valley oak woodland is an open woodland community dominated by valley oak. The understory is a grassy savannah composed mostly of non-native grasses. Valley oak woodland occurs mostly in the north and central portions of the North Area in shaded ravines and on north-facing slopes. Stands of valley oaks typically occur inland and at lower elevations, in savannas on

lower slopes of rolling hills, valley bottoms, and upper terraces of floodplains. This community is regionally rare and does not occur in extensive stands (AIS and ESRI, 2007).



Oak woodland intergrading with annual grassland

Oak trees are recognized by the County as significant historical, aesthetic, and ecological resources, and impacts to oaks are regulated under the County's Oak Tree Ordinance, which requires an oak tree permit for any impacts to oak trees. Although not considered a sensitive alliance by CDFW, for the purposes of this report, coast live oak woodland is considered sensitive consistent with County ordinances and reflective of its key role in the ecology of the Santa Monica Mountains; therefore, any oak woodland regardless of dominant tree species is considered sensitive. Oak woodland habitat is very slow

growing and even modest impacts may take many years to replace.

Oak woodlands generally provide high-quality habitat for a large variety of wildlife species. They also contribute woody debris to the duff in the woodland understory, which provides foraging areas for small mammals and microclimates suitable for amphibians and reptiles. Acorns are a valuable food source for many animal species, including acorn woodpecker (*Melanerpes formicivorus*), scrub jay (*Aphelocoma corulescens*), American crow (*Corvus brachyrhynchos*), western gray squirrel (*Scirus griseus*), and mule deer. Oak trees provide nesting habitat for numerous passerine birds as well as for raptors such as the great horned owl (*Bubo virginianus*) and red-tailed hawk (*Buteo jamaicensis*). There are 1,101 acres of coast live oak woodland and 154 acres of valley oak woodlands mapped in the North Area; approximately 507 acres and 130 acres occur on public lands, respectively.

Grasslands

Grassland communities consist of low, herbaceous vegetation that is dominated by grasses. Grasslands also harbor native forbs and bulbs, as well as naturalized annual forbs. Grasslands within the North Area include both non-native and native grasses. Non-native grassland consists of dominant invasive annual grasses that are primarily of Mediterranean origin, however, important native grasslands/native forblands can have a high representation of non-native species. Dominant species found within this community include wild oat (*Avena fatua*), slender oat (*A. barbata*), red brome (*Bromus madritensis* ssp. *rubens* [*B. rubens*]), ripgut brome (*B. diandrus*), and herbs, such as black



Annual grassland near Malibu Lake

mustard (*Brassica nigra*) and wild radish (*Raphanus sativus*). Annual grasslands are mapped in small to large patches throughout the North Area in previously disturbed areas, cattle pastures, valley bottoms, and along roadsides, but many have apparently developed naturally. Some areas mapped as annual grasslands contain a high proportion of native bunchgrasses and wildflowers such as mariposa lilies (*Calochortus* spp., many of which are considered rare species). Small patches of native grasslands and wildflower fields also occur within openings in broader areas mapped as coastal sage scrub. There are 2,163 acres of annual grassland mapped in the North Area; approximately 1,300 acres occur on public lands.

Wetlands and Water

Wetland communities are characterized by erect, rooted, herbaceous hydrophytes (plants that grow in or on water) generally less than six feet tall. These areas are typically dominated by monocots such as cattails (*Typha latifolia*), sedges (*Carex* spp.), rushes (*Juncus* spp.), and bulrush (*Scirpus* spp.). Other common species include water speedwell (*Veronica anagallis-aquatica*), lady's thumb (*Polygonum* spp.), rabbits foot grass (*Polypogon monspeliensis*), and watercress (*Rorippa nasturtium-aquaticum*). Emergent willows may also be present within these habitat areas. Only 3.78 acres of wetland sites were mapped in the NPS's mapping effort. Wetlands probably are more broadly distributed in the North Area than is represented in the NPS's data, due to mapping constraints (minimum mapping units) and their intergradation with riparian areas.

Areas mapped as water include all natural and man-made water bodies, including creeks, ponds, lakes, and open reservoirs. They also include the sparsely vegetated to non-vegetated sandy, cobble-covered, or gravelly area within a stream floodplain. A sand or gravel bar is a level flat surface that may be a transitory feature (AIS and ESRI, 2007).



Malibou Lake

Lakes and ponds are characterized by pooled water where suspended organisms (e.g., phytoplankton and zooplankton), submerged plants, and floating rooted aquatics thrive. Vegetation is usually limited to shallow edge areas and can contain dense monocultures of cattails and bulrush (typically referred to as wetlands). Other common species include lady's thumb, nutsedge (*Cyperus esculentus*), and various species of rush (*Juncus* spp.). Floating aquatic plant species include pond lilies (*Nuphar luteum*), mosquito fern (*Azolla filiculoides*), and duckweed (*Lemna* spp.). At many locations, these communities intergrade with willow riparian or scrub habitats. A few prominent

man-made lakes and ponds occur in the North Area including Malibou Lake, Rocky Oaks dam, and Lake Enchanto. There are 54 acres of lakes and ponds mapped in the North Area; approximately 6 acres occur on public lands.

Various small man-made ponds occur across the North Area. These features usually contain species compositions similar to natural ecosystems, although in some man-made impoundments, a single species may dominate. Vegetation usually includes cattails, sedges, and bulrush. Pond lilies and duckweed may also occur on the surface of ponded water.

Seeps and springs are important communities in the North Area, with a unique association of plants and wildlife including ferns and mosses, wildflowers, invertebrates, and amphibians (especially salamanders). Depending on the location, they may occur in or near an existing stream or creek, or near the base of hills and canyons. In some areas, seeps can support mature willow woodlands. Because many seep and spring communities are not subject to regular disturbance they may contain late successional stages of riparian plant communities. Seeps and springs are uncommon, valuable sources of water in the otherwise arid landscape of the North Area. Seeps and springs are small and difficult to discern on aerial imagery, and NPS did not map these features because they are smaller than the one-acre minimum mapping unit.

Rock Outcrops

This mapping category consists of a sparsely vegetated community occurring on cliffs and rock outcroppings of sedimentary, metamorphic, and volcanic rocks along the ridges and peaks of the hills and mountains. Outcrops in the Santa Monica Mountains derive from volcanic origins (mainly in the west and within the Zuma Creek watershed) or from sedimentary/sandstone origins (central ridge and Topanga). Between the rocks and in the crevices, the few plants found are usually upland species most often known from chaparral and coastal sage scrub.



Rock outcrops of all sizes can support a variety of unique species, including *Dudleya* spp. and various lichens

Rock outcrops are frequently associated with rare annuals and lichens. Other plants often found on the rock faces in protected areas include *Dudleya* spp., *Selaginella* spp., and various lichens. Agoura Hills dudleya is federally listed as Threatened and occurs on rock outcrops in and near the North Area. It is an endemic plant that occurs nowhere else on earth. Rock outcrops are found throughout the North Area, especially in areas of steeper topography. However, because many rock outcrops are smaller than the one-acre minimum mapping unit used in the NPS vegetation study, this landform is under-represented in the vegetation mapping data. Rock outcrops occur within nearly all of the vegetation types mapped within the North Area.

Vineyards and Other Agriculture

Most of the agricultural lands mapped in the North Area consists of vineyards. However, orchards supporting fig trees, citrus, and avocados also occur. It is likely that other small farms also occur but were either too small to be mapped or fell within a broader mapping category. Vineyards are prevalent

around Mulholland Highway and Kanan Dume Road and in Triunfo Canyon. Agricultural lands can be used by a variety of native wildlife which often leads to concentrations of mesopredators such as coyote (*Canis latrans*), racoon (*Procyon lotor*), and opossum (*Didelphis virginiana*) that degrade wildlife use in adjacent lands. There are approximately 94 acres of agricultural lands mapped entirely on private lands in the North Area; however, this acreage may underrepresent the actual total as new vineyards and orchards have recently been planted in the North Area.



Vineyards in the North Area

Disturbed, Developed, and Ruderal

Areas that either have existing structures (e.g. houses and roads) or areas that are devoid of vegetation due to continual disturbance by horses, vehicles, or other human causes are mapped as Developed. Developed areas include residential properties, roadways and physical structures (e.g., corrals and stables). There are 3,508 acres of land mapped as developed in the North Area; approximately 136 acres occur on public lands.



Graded fuel reduction zone

Areas mapped as disturbed include artificial cuts and embankments, cleared land, fire breaks, and areas that are regenerating after fire or clearing. These areas are often dominated by ruderal vegetation. Ruderal vegetation communities are dominated by herbaceous, introduced, pioneering plant species that readily colonize open disturbed soil and thrive as a result of human impacts. Ruderal communities may provide a certain degree of erosion control for recently disturbed or graded areas; such communities are also a threat to the natural biodiversity of an area. Invasive species continually distribute

highly competitive propagules into otherwise native vegetation; however, if ruderal grassland stands remain undisturbed for several years they can sometimes undergo succession towards more stable and less weedy plant communities. These ruderal communities may include monocultures of Russian thistle (*Salsola tragus*), black mustard, or summer mustard, or combinations of all three. Non-native and often invasive herbs may include tumbling pigweed (*Amaranthus albus*), scarlet pimpernel (*Anagallis arvensis*), mayweed (*Anthemis cotula*), pineapple weed (*Matricaria discoidea*), Italian thistle (*Carduus pycnocephalus*), red stem filaree (*Erodium cicutarium*), and sweet fennel (*Foeniculum vulgare*). Prickly

lettuce (*Lactuca serriola*), horehound (*Marrubium vulgare*), bur-clover (*Medicago polymorpha*), and cocklebur (*Xanthium spinosum*) may also occur.

There are 718 acres of land mapped as disturbed in the North Area; approximately 76 acres occur on public lands. It is important to note that many cleared areas, including fire breaks, may support native vegetation communities and rare plants and animals. Therefore, this mapping unit does not preclude an area's use as plant or wildlife habitat.

Exotic Vegetation

Exotic species are prevalent in the North Area and are a component of many native vegetation communities. Exotic species often displace native plants and wildlife but can be used by some species for nesting and foraging. They can often alter the fire ecology of a region and increase fire frequency. In the North Area, patches of giant reed (*Arundo donax*) are common in many drainages and stands of non-native pine (*Pinus* spp.), gum tree (*Eucalyptus* spp.), and black locust (*Robinia pseudoacacia*) are just a sample of the non-native species in the region that have colonized native vegetation communities.

Giant reed is an extremely invasive non-native species to southern California. Giant reed forms dense monotypic stands that outcompete most of the native species for resources. Although native birds



A field of non-native mustard

occasionally nest in this community type, giant reed provides poor wildlife habitat and can increase the fire frequency in areas that would not normally be fire prone (e.g., riparian areas).

Eucalyptus groves are characterized by gum trees (*Eucalyptus* spp.), which are non-native species originally from Australia. These trees naturalize in southern California from trees originally planted as windbreaks, ornamentals, or for fuel production. Although this vegetation is non-native, it supports many species of wildlife because it provides shelter and a good location for nests. In some locations, eucalyptus can

eliminate or greatly reduce understory vegetation due to allelopathic properties in the leaves.

Black locust is an invasive tree that naturally occurs in the southeastern United States. Black locust stands are similar to Eucalyptus groves in structure and function, and they intergrade with native vegetation communities.

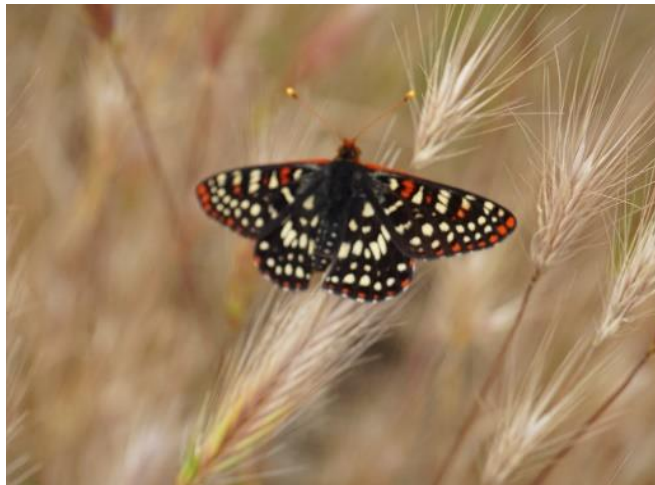
There are 107 acres of land mapped as exotic vegetation (excluding non-native annual grasslands) in the North Area; approximately 18 acres occur on public lands. These estimates likely underrepresent the acreage of exotic vegetation in the North Area.

2.3.2 Wildlife

The Santa Monica Mountains are one of the last remaining natural areas located within the greater Los Angeles area, and support hundreds of species of wildlife. For over 200 years, the mountains and surrounding areas have been subject to a suite of historic land use changes including cattle ranching, farming, residential development, and various flood control activities. Within the last 50 years, the North Area of the Santa Monica Mountains has been subject to rapid development including the construction of residential and commercial properties. Rural home sites have become more common and habitat fragmentation has occurred in many areas. In recent years, vineyards have been cultivated and a wine industry has developed in the mountains of the North Area. Similarly, many of the creeks and streams have been subjected to historic and ongoing modifications from flood control and urban development has greatly affected the abundance and distribution of native wildlife. Dams or barriers on Topanga, Malibu, and other creeks prevent fish passage and many streams no longer support native trout and other fishes. Nonetheless, while some locations have been altered the North Area still supports many acres of high-quality native vegetation. These plant communities provide habitat for a variety of common and sensitive wildlife species that utilize these areas throughout various stages of their life cycles, including breeding, foraging, dispersal, and transient uses. In addition to providing important habitat for wildlife, the North Area has been recognized as an important component of wildlife movement opportunity for many wildlife species. The following sections discuss some of the common wildlife species found in the North Area. Special-status species are discussed in Section 2.6.

Invertebrates

Many species of invertebrates can be observed in the North Area. Butterflies, moths, and other flying insects are common features to local residents. While some may be considered pests or nuisance



Chalcedon checkerspot butterfly (*Euphydryas chalcedona*)

animals to residents, as in all ecological systems, invertebrates play a crucial role in a number of biological processes. They serve as the primary or secondary food source for many fish, bird, reptile, and mammal predators. Invertebrates provide important pollination vectors for numerous plant species and act as efficient components in controlling pest populations. In addition, many invertebrates consume detritus and contribute to soil nutrient cycles.

The North Area provides microhabitat conditions suitable for a wide variety of terrestrial and aquatic insects, crustaceans, and

other invertebrates. These include deep still ponds, swift running streams with cobble and rocks, thick leaf litter, and many different vegetation communities. There is limited data available on invertebrates in the North Area. However, many species occur in the North Area with un-recorded species waiting to be discovered.

A wide variety of Anisoptera (dragonflies) Zygoptera (damselflies), Hemiptera (true bugs), Coleoptera (beetles), Diptera (flies), Plecoptera (stone flies), Lepidoptera (moths and butterflies), Hymenoptera (wasps, bees, and ants), and Trichoptera (caddis flies) are known from the North Area. Some of the many species found in this area include showy butterflies such as the western tiger swallowtail (*Papilio rutulus*), cabbage white (*Pieris rapae*), the Sara orangetip (*Anthocharis sara*), orange Sulphur (*Colias eurytheme*), painted lady (*Vanessa cardui*), and the monarch (*Danaus plexippus*). Small skippers such as the umber skipper (*Poanes meleana*), rural skipper (*Ochlodes agricola*), and the northern white skipper (*Heliopterus ericetorum*) can also be seen. Some of these species are known from urban gardens. Others such as giant swallowtail (*Papilio cresphontes*) and great purple hairstreak (*Atlides halesus*) are uncommon to the Santa Monica Mountains. The Santa Monica hairstreak (*Satyrium auretorum fumosum*), is an uncommon butterfly that is in the Santa Monica Mountains and is at risk from urbanization (NPS, 2011).

Both non-native Argentine ants (*Linepithema humile*, formerly *Iridomyrmex humile*) and native harvester ants (*Pogonomyrmex* spp.) are known from the area. The introduced Argentine ant is abundant in urban and agricultural lands throughout much of California and invades into relatively mesic natural habitat such as along river courses and in some coastal lowlands (Ward, 2005).

Stream invertebrates include aquatic larvae such as damselflies, dragonfly larvae, and water bugs (e.g. toe biters [family Belostomatidae]). These aggressive insects prey on insects, small fish and even



Non-native garden snail (top) and native shoulderband snails (bottom)

amphibians. Red swamp crayfish (*Procambarus clarki*) an invasive species is locally common in many streams across the North Area.

Several species of gastropod are known from the region. These include native and non-native snails, such as the introduced garden snail (*Helix aspersa*), decollate snails (*Rumina decollate*), an introduced predatory gastropod sold in local garden stores as a biocontrol for the garden snail, and an aquatic snail belonging to the Family Succineidae, a native, cosmopolitan family not considered rare or special-status in California. In addition, several species of native shoulderband snails (*Helminthoglypta* spp.) are known from the Santa Monica Mountains. These include the sage shoulderband (*H. salvia*), matijila

shoulderband snail (*H. willetti*), and Ventura shoulderband (*H. venturensis*). Several rare species of shoulderband snail including the Trask shoulderband snail (*H. traskii traskii*) may occur in the North Area; however, the ecology and distribution of these species remains poorly understood.

Fish

Fish can be found in aquatic habitats across the North Area, although many of the native species have now been displaced. Nonnative species include mosquito fish (*Gambusia affinis*), green sunfish (*Lepomis cyanellus*), large-mouth bass, (*Micropterus salmoides*), black bullhead (*Ameiurus melas*), and goldfish

(*Carassius auratus*). Other exotics such as common carp (*Cyprinus carpio*) and bluegill (*Lepomis macrochirus*) may also occur. These nonnative species are common in perennial stream systems and in reservoirs and lakes such as Malibou Lake.

Arroyo chub (*Gila orcutti*), a California Species of Special Concern, is known from portions of Malibu Creek and is likely found in a few other drainages. Although there are no marine fish in the North Area, all of the local drainages ultimately lead to the ocean. Therefore, impacts to water quality can have far-reaching effects on downstream species and their habitats. Southern California steelhead trout (*Oncorhynchus mykiss irideus*) is a federally listed endangered species with a unique lifecycle. Adults spend most of their time at sea, making their way up coastal freshwater streams to spawn. After the eggs hatch, the young fish remain in the streams for a couple of years before swimming back down to enter the open ocean, where they remain until they reach adulthood and are ready to begin the cycle again. The steelhead is genetically identical to the rainbow trout, a resident form of the species that stays in freshwater and does not migrate to the ocean.

The southern California steelhead trout population is adapted to the arid conditions of the coastal mountains and waterways, where creeks and rivers are often dry and inaccessible until after rains. Therefore, this population often spends several years at sea (adults) or in perennially wet portions of streams (juveniles) awaiting adequate rainfall to allow passage between upstream freshwater habitat and the ocean. Despite their adaptation to these conditions, the southern California population, including those fish that historically bred in the Santa Monica Mountains, have faced additional barriers between spawning and ocean habitat as development has occurred over the last several decades. Road crossings, dams (e.g., Rindge Dam on Malibu Creek), urban and agricultural runoff, and nonnative species have degraded habitat and severely limited or completely blocked steelhead trout access to spawning areas. Steelhead trout eggs and young require clean water with adequate food, cover, and dissolved oxygen. Unfortunately, in many historic spawning streams water quality, physical barriers, and nonnative predators such as mosquitofish and crayfish have led to the extirpation of steelhead.

The NPS, City of Malibu, Caltrans, and many other government agencies and non-governmental organizations have been working to restore habitat and connectivity for steelhead trout, and their efforts are paying off as the fish begin to move back into coastal streams. While steelhead are not known to reach up into the North Area, rainbow trout are known from the coastal zone below the Rindge Dam in Malibu and below the town of Topanga; improving connectivity to the ocean could allow these populations to assume the anadromous (steelhead) form. Current efforts within the North Area to remove physical barriers, enhance water quality, control nonnative predators, and restore riparian habitat directly contribute to the health of the steelhead trout's downstream habitats and are essential in the effort to welcome steelhead trout back into their historic habitats in the Santa Monica Mountains.

Amphibians

The most recognized sound to many rural residents in the North Area is the chorus of frogs from the many creeks and drainages. The NPS reports ten amphibian species in the Santa Monica Mountains (NPS, *no date*). These include the California tree frog (*Pseudacris cadaverina*), Baja California chorus frog (*P. hypochondriaca*), and California toad (*Anaxyrus boreas*), as well as the nonnative American bullfrog

(*Lithobates catesbeianus*). The California red-legged frog (*Rana draytonii*) is a federally listed threatened species with one very small population left in the Santa Monica Mountains, in the upper Las Virgenes Canyon area of the Simi Hills.

Most amphibians require standing or flowing water to complete their life cycle. However, some terrestrial species can survive in drier areas by remaining in moist environments found beneath leaf litter and fallen logs, or by burrowing into the soil. Many places within the North Area provide year-round habitat for a variety of amphibian species. When flowing, Triunfo, Medea, Malibu, and other creeks can provide small pools, shallow rills and runs, and deep, wide slow-moving water supporting several native and nonnative species. Adjacent upland habitat and riparian vegetation provide ample foraging opportunities. Moist microclimates under leaf litter and rocks provide habitat for terrestrial amphibians such as slender salamanders.



California red-legged frog (*Rana draytonii*)

Both newts and salamanders are documented in the North Area. These species are highly cryptic and often difficult to detect. Downed logs, bark, and other woody material in various stages of decay (often referred to as coarse woody debris) provide shelter and feeding sites for them (Maser and Trappe, 1984). California newt (*Taricha torosa*) is partially aquatic, while other local species, including black-bellied slender salamander (*Batrachoseps nigriventris*), Pacific slender salamander (*B. pacificus*), ensatina (*Ensatina eschscholtzii*), and arboreal salamander (*Aneides lugubris*), are terrestrial; all of which have been recorded in and around the North Area. Many native amphibians are adversely affected or excluded by exotic species of fish, crayfish, and frogs, which are common within watersheds of the North Area.

Amphibians can be found in many of the intermittent and perennial creeks in the North Area. Key areas include Potrero Valley Creek, Malibu Creek, Medea Creek, Las Virgenes Creek, Arroyo Calabasas, Topanga Creek, and Garapito Creek.

Reptiles

Reptiles are widespread across the North Area, in both disturbed and natural areas. Western fence lizard (*Sceloporus occidentalis*), southern alligator lizard (*Elgaria multicarinata*), side-blotched lizard (*Uta stansburiana*), gopher snake (*Pituophis catenifer*), and striped racer (*Coluber lateralis*) are broadly distributed within the uplands and along the edge of riparian habitats. The number and type of reptile species that may occur at a given site is related to a number of biotic and abiotic features. These include the diversity of plant communities, substrate, soil type, and presence of refugia such as rock piles, boulders, and native debris.

Most reptiles are difficult to detect because they are cryptic and their life history characteristics (e.g., foraging and thermoregulatory behavior) limit their ability to be observed during most surveys. Further, many species are active only within relatively narrow thermal limits, avoiding both cold and hot conditions, and take refuge in microhabitats that are not directly visible to the casual observer. These can include rodent burrows, in crevices, under rocks and boards, and in dense vegetation where they are protected from unsuitable environmental conditions and predators. In some cases, they are



Southern Pacific rattlesnake (*Crotalus viridis*)

observed only when flushed from their refugia. Since 2001, the NPS has been monitoring reptiles and amphibians at various locations within the Santa Monica Mountains National Recreation Area, including locations within the North Area, using a variety of sampling techniques (Delaney et al., 2010b). Snakes captured during the studies include western yellowbelly racer (*Coluber constrictor*), southern Pacific rattlesnake (*Crotalus viridis*), western ring-neck snake (*Diadophis punctatus*), night snake (*Hypsiglena torquata*), California kingsnake (*Lampropeltis getula*), California striped racer (*Masticophis lateralis*), and San

Diego gopher snake (*Pituophis catenifer*). Lizards found during the studies include coastal whiptail (*Aspidoscelis tigris*), western fence lizard, alligator lizard, western skink, side-blotched lizard, and Blainville's horned lizard (*Phrynosoma blainvillii*). The horned lizard is a California Species of Special Concern that has suffered range-wide population declines due to habitat loss and declines in the native harvester ants that form the majority of their diet.

Red-eared slider (*Chrysemys [Trachemys] scripta elegans*), a non-native turtle, is known from the Santa Monica Mountains and is considered a threat to native turtle populations. It may exclude or hinder the use of basking sites for native southern western pond turtles (*Actinemys pallida*), which is the only native turtle in the Santa Monica Mountains and was once common in the region's streams and ponds.

Birds

Nearly 400 species have been recorded in the Santa Monica Mountains, nearly half of the total species known from North America. The diversity of birds in the North Area is related to the size of the Santa Monica Mountains, the presence of perennial water, the geographic location near the coastal plain, and the wide variation in plant communities that provide habitat for many different groups of birds. For example, many birds are closely associated or dependent on the riparian vegetation found in many of the region's creeks and streams. Riparian systems are frequently considered one of the most productive forms of wildlife habitat in North America. Many bird species are wholly, or at least partially, dependent on riparian plant communities to perpetuate their kind (Warner and Hendrix, 1984). Some of these species are year-round residents while many of the birds that occur in the North Area are "neotropical migrant song birds" or seasonal migrants that are only present in the region during the spring and

summer months. Bird use of riparian areas does not diminish during the winter months. Studies in the Central Valley (e.g., Hehnke and Stone 1979, Motroni 1979, Gaines 1980) have indicated that the absolute numbers of wintering riparian birds may equal or even exceed the numbers present in the breeding season.



California quail (*Callipepla californica*)

Nearly half of the bird species in the Santa Monica Mountains are songbirds (passerines). Songbirds are a diverse group that includes birds such as vireos, swallows, wrens, flycatchers, warblers, tanagers, finches, grosbeaks, buntings, and sparrows. Some examples of songbirds from the North Area are ash throated flycatcher (*Myiarchus cinerascens*), Bullock's oriole (*Icterus bullockii*), lesser goldfinch (*Spinus psaltria*), and yellow-rumped warbler (*Setophaga coronata*). Other riparian birds include Wilson's warbler (*Cardellina pusilla*), MacGillivray's warbler (*Geothlypis tolmiei*), Hutton's vireo (*Vireo huttoni*), warbling vireo (V.

gilvus), and Nashville warbler (*Oreothlypis ruficapilla*). Hummingbirds are well represented in the North Area, including riparian and upland species. Some of these include Anna's hummingbird (*Calypte anna*), black-chinned hummingbird (*Archilochus alexandri*), and the aggressive Allen's hummingbird (*Selasphorus sasin*).

Aquatic birds including ducks, geese, herons, and egrets are common at perennial water sources. Over 100 species of waterbirds have been identified at Malibou Lake alone (eBird, 2017). Some of these include double-crested cormorant (*Phalacrocorax auritus*), black-crowned night heron (*Nycticorax nycticorax*), snowy egret (*Egretta thula*), Canada goose (*Branta canadensis*), mute swan (*Cygnus olor*), mallard (*Anas platyrhynchos*), pied-billed grebe (*Podilymbus podiceps*), lesser yellowlegs (*Tringa flavipes*), wood duck (*Aix sponsa*), long-billed dowitcher (*Limnodromus scolopaceus*), and green heron (*Butorides virescens*).

Other aquatic species in the North Area include American coots (*Fulica americana*), great blue heron (*Ardea herodias*), and Virginia rail (*Rallus limicola*). Canada geese are now a common visitor to the region and may be seen in large numbers in urban habitats such as large lawns, making them a potential pest.

Blue grosbeak (*Passerina caerulea*), western meadowlark (*Sternella neglecta*), and savannah sparrow (*Passerculus sandwichensis*) can be found near annual grasslands in the North Area, and California quail (*Callipepla californica*), are commonly found along the margins of scrub and grassland communities. Greater roadrunner (*Geococcyx californianus*) can be seen in grassland and sparse scrub areas, but their population has declined in portions of the North Area, particularly south of U.S. 101.

Where grasslands transition to other upland community types, western kingbird (*Tyrannus verticalis*), Cassin's kingbird (*T. vociferans*), spotted towhee (*Pipilo maculatus*), bushtit (*Psaltiriparus minimus*), black phoebe (*Sayornis nigricans*), mourning dove, Bewick's wren (*Thryomanes bewickii*), and California

towhee (*Melospiza crissalis*) can be observed. At certain times of the year large flocks of birds can be seen in these transition areas. Cedar waxwing (*Bombicilla cedrorum*) often forages on various fruit-producing plants and may consume elderberries and other native fruits. Western bluebird (*Sialia mexicana*), blue-gray gnatcatcher (*Polioptila caerulea*), oak titmouse (*Baeolophus inornatus*), and California thrasher (*Toxostoma redivivum*) are also known from the North Area, and forage and nest in a



Great horned owl (*Bubo virginianus*)

variety of local habitats, from chaparral to woodland to riparian areas. The complex, intricate mosaic of vegetation communities of the North Area is strongly reflected in the mixing of bird (and other wildlife) communities here.

Raptors, owls, and vultures are commonly seen in the North Area. The broad prey base (e.g., small mammals, reptiles, and birds), presence of suitable nesting and perching sites, and access to relatively broad open foraging habitat provides abundant resources for birds of prey and vultures. Several raptor species not only forage in the North Area and vicinity but are

considered breeding residents. These include red-tailed hawk, red-shouldered hawk (*B. lineatus*), Cooper's hawk (*Accipiter cooperii*), and American kestrel (*Falco sparverius*). Cooper's hawks are often seen in residential areas waiting for small birds to prey on near backyard bird feeders.

Several species of owls are known from the North Area including barn owl (*Tyto alba*), great horned owl (*Bubo virginianus*), western screech owl (*Megascops kennicottii*), and long-eared owl (*Asio otus*). Barn and great horned owls can be commonly seen near developed areas and are urban adapted species. Burrowing owl (*Athene cunicularia*), a California Species of Special Concern, was known from the vicinity of the North Area and surrounding areas prior to 1990s, when rapid residential and commercial development began, and cattle grazing ceased. This species may be found in grasslands and open shrub communities in primarily agricultural areas of the state and may return to the North Area with specific management. Osprey (*Pandion haliaetus*) can be observed near reservoirs in the region but does not breed. Golden eagle (*Aquila chrysaetos*) historically bred in the Santa Monica Mountains including Malibu Creek State Park, into the 1990s; however, the species may no longer breed in the area, although it still occurs as a rare fall and winter visitor (NPS, *no date*). White-tailed kite also formerly nested in the early 2000s and may still do so irregularly. Turkey vultures (*Cathartes aura*) are an iconic species in the North Area and can be observed soaring over the foothills or roosting in large gum trees. This species is often seen eating roadkill along the many roads that bisect the Santa Monica Mountains, and nests in remote rock outcrops and other difficult-to-access habitats.

In addition to songbirds, the Santa Monica Mountains also supports eight species of woodpeckers, three native doves, three nonnative doves and pigeons, and the belted kingfisher (*Megasceryle alcyon*). The

western scrub jay and American crow are often heard and seen in a variety of habitats from scrub communities to oak woodlands and savannahs, to residential neighborhoods and backyards.

Several exotic species including the brown-headed cowbird (*Molothrus ater*), feral pigeon or rock dove (*Columba livia*), and European starling (*Sturnus vulgaris*) occur in the North Area. Cowbirds are a known brood parasite to many native species including listed species such as the least bell's vireo (*Vireo bellii pusillus*). Six species of free-flying parrots and parakeets have been observed in the Santa Monica Mountains, but black-hooded (or Nanday) parakeet (*Nandayus nenday*) is by far the most common, and breeds in tree cavities, largely south of U.S. 101; all are nonnative and are the descendants of escaped or released pets (NPS, *no date*).



Six species of parrots and parakeets reside in the Santa Monica Mountains, descendants of escaped pets

Mammals

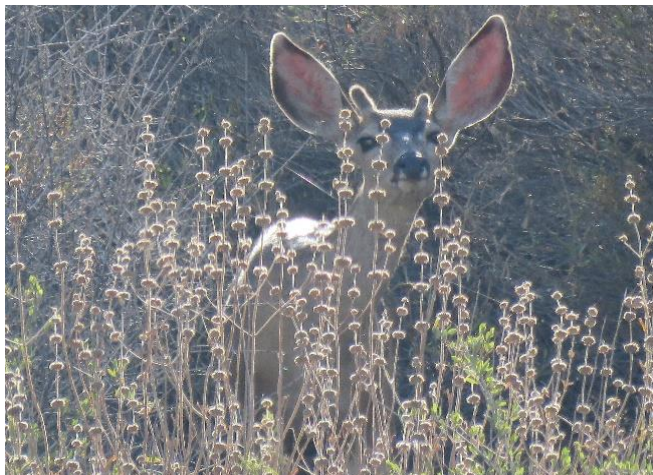
The North Area is home to a variety of mammals which contribute to the wilderness experience that many people enjoy in the Santa Monica Mountains. Mule deer (*Odocoileus hemionus*) and coyote (*Canis latrans*) can often be observed in fields or along the urban-wildlands interface. Botta's pocket gopher (*Thomomys bottae*) leave conspicuous burrows across lawns and natural lands while ground squirrels (*Otospermophilus beecheyi*) are common to rural and natural areas alike. Urban-adapted species such as racoon (*Procyon lotor*), striped skunk (*Mephitis mephitis*), or Virginia opossum may be the most commonly observed mammals in the North Area as they are frequent visitors to trash cans or back yard feeders. However, these species represent only a small subset of the 45 species of mammals that occur in the North Area and Santa Monica Mountains (NPS, *no date*). Mammals use virtually every habitat type and landform and some species have adapted to "urban living".

The type and distribution of mammals in the North Area is strongly associated with the presence of such factors as access to perennial water, the complex topographical and structural components (e.g., rock piles, stream terraces, hills, grasslands, and chaparral) that provide cover and support prey base, the presence of suitable soils for fossorial mammals, and access to adjacent habitat to support both gene flow and dispersal.

Other small mammals include California vole (*Microtus californicus*) and Pacific kangaroo rat (*Dipodomys agilis*). In some areas, these species leave evidence of bioturbation (e.g., tunneling and burrowing) that is easily detected. Several species of native mice occur including the brush mouse (*Peromyscus boylii*), deer mouse (*P. maniculatus*), and the western harvest mouse (*Reithrodontomys megalotis*). Shrews

including the desert shrew (*Notiosorex crawfordi*) feed on small insects across the North Area. Big-eared woodrat (*Neotoma macrotis*) is found across a variety of habitats including riparian and chaparral communities. These species build large middens that appear to be a pile of sticks and debris, often at the foot of a large shrub or bush. These middens house the animals and they may be placed on the ground or in trees. Depending on the fire frequency, some middens may be many years old. The San Diego desert woodrat (*N. lepida lepida*), a State Species of Special Concern, may also occur in the region, mainly in more arid areas, often with patches of cactus (*Opuntia* spp.). Cottontails (*Sylvilagus audubonii* and *S. bachmani*) are common and can be seen in many locations.

Mid-size mammals including raccoon, striped skunk, coyote, long-tailed weasel (*Mustela frenata*), and bobcat (*Lynx rufus*) are found throughout the North Area and are often observed by rural residents. The tracks and spoor of raccoons and other small mammals can often be found along the margins of creeks. Although less common, spotted skunk (*Spilogale putorius*), Merriam's chipmunk (*Tamias merriami*), and western gray squirrel (*Sciurus griseus*) also occur. Chipmunks are found north of U.S. 101 (within the Simi Hills), and the western gray squirrel is apparently restricted to areas south of U.S. 101. The non-native fox squirrel (*S. niger*) has displaced the western gray squirrel in many areas of the region (Cooper, 2017). Rare species such as the ringtail (*Bassariscus astutus*), a State Fully Protected Species, and American badger (*Taxidea taxus*), a State Species of Special Concern, occur in a few locations in the North Area, although they are rarely seen by the public.



Mule deer (*Odocoileus hemionus*)

Perhaps the most celebrated mammal of the Santa Monica Mountains is the mountain lion, which at up to 150 pounds is the largest mammal in the Santa Monica Mountains. The NPS has been tracking large carnivores, including mountain lions, in and around the Santa Monica Mountains and Simi Hills since 1996. These studies and others have identified the degree to which urbanization and habitat fragmentation are affecting this species. Data from wildlife cameras and animals' collars have shown that mountain lions move freely throughout the entire mountain range.

However, roadways such as the U.S. 101 freeway, the U.S. 405 freeway, and Highway 23 outside of the North Area are substantial barriers to movement. NPS data show mountain lions repeatedly encountering the U.S. 101 freeway and turning back. In recent years, several mountain lions have attempted to cross area freeways, but have been killed by vehicles. The Liberty Canyon area is the only known location where mountain lions have successfully crossed U.S. 101 freeway in the North Area, moving between the Santa Monica Mountains and the Simi Hills. Section 2.10 provides more information on wildlife movement in the region.

The black bear (*Ursus americanus*) is not considered native to the area. Periodic sightings (and occasional roadkill) of this species have recently occurred, presumably of animals moving south from the Santa Susana Mountains through the Simi Hills.

There are several species of bats known from the North Area and bats can be commonly seen flying above creeks and streams in the early evening. Bats forage over most of the North Area where they prey on small insects, moths, and other invertebrates. Many bats concentrate foraging activities in riparian and wetland habitats where insect abundance is high (CDFG, 2000). Common bats recorded from the Santa Monica Mountains include Mexican free-tailed bat (*Tadarida brasiliensis*), canyon bat (*Parastrellus hesperus*), California myotis (*Myotis californicus*), and big brown bat (*Eptesicus fuscus*). Some of the special-status bats detected in and near the North Area include pallid bat (*Antrozous pallidus*), Yuma myotis (*M. yumanensis*), long-eared myotis (*M. evotis*), western small-footed myotis (*M. ciliolabrum*), Townsend's big-eared bat (*Corynorhinus townsendii*), and western mastiff bat (*Eumops perotis*) (Brown and Berry, 2005).

Migrant bats such as the western red bat (*Lasiurus blossevillei*) and the hoary bat (*L. cinereus*) may occur in riparian areas in the spring and early fall. Bats in the North Area may roost in trees, rock crevices and outcrops, caves, bridges, and buildings.

Some introduced mammals, such as fox squirrel (*Sciurus niger*), house mouse (*Mus musculus*), and Norway rat (*Rattus rattus*) are common near developed areas; they have expanded locally into natural areas and therefore pose a potential threat the ecosystem of the North Area. Portions of the North Area are also frequented by domestic animals including house cat (*Felis catus*) and domestic dog (*Canis familiaris*).

2.4 Special-Status Plants and Wildlife of the North Area

The North Area is home to a wide variety of species that are considered rare by State, federal, or local governments (see Attachment 2 and Figure 5). Some of these species are afforded protection under the State or federal Endangered Species Acts, are Fully Protected, or require special consideration and protections when planning and implementing development or conservation projects. There are also many species that are considered locally rare or uncommon in the Santa Monica Mountains and the North Area. Special-status species are plants and animals that meet one or more of the following criteria:

- Have been designated as either rare, threatened, or endangered by CDFW or the USFWS, and are protected under the California or federal Endangered Species Act (ESA);
- Are candidate species being considered or proposed for listing under these same acts;
- Are considered Species of Special Concern by CDFW;
- Are fully protected by the California State Fish and Game Code, Sections 3511, 4700, 5050, or 5515;
- Are classified as California Rare Plant Rank (CRPR) 1, 2, 3, or 4 by CDFW and the California Native Plant Society (CNPS);
- Are of express concern to resource/regulatory agencies or local jurisdictions;

- Are locally uncommon in the North Area; or
- Are listed on watch lists or provided with special conservation designations by professional working groups/societies (e.g., Western Bat Working Group).

Of the many different plants and wildlife that occur in the North Area, there are several federally listed, state-listed, or fully protected species that are known to occur here, or that have the potential to occur and are found nearby. Listed or fully protected species include:

- Braunton's milk-vetch (*Astragalus brauntonii*), Federally Endangered
- Agoura Hills dudleya (*Dudleya cymosa ssp. agourensis*), Federally Threatened
- Marcescent dudleya (*Dudleya cymosa ssp. marcescens*), Federally Threatened and State Rare
- Santa Monica Mountains dudleya (*Dudleya cymosa ssp. ovatifolia*), Federally Threatened
- Santa Susana tarplant (*Deinandra minthornii*), State Rare
- Lyon's pentachaeta (*Pentachaeta lyonii*), State and Federally Endangered
- Santa Cruz Island fringe-pod (*Thysanocarpus conchuliferus*), Federally Endangered
- California red-legged frog (*Rana draytonii*), Federally Threatened
- Ringtail (*Bassariscus astutus*), State Fully Protected
- White-tailed kite (*Elanus leucurus*), State Fully Protected
- Golden Eagle (*Aquila chrysaetos*), State Fully Protected, Bald and Golden Eagle Protection Act
- Peregrine Falcon (*Falco peregrinus anatum*), State Fully Protected
- Tricolored blackbird (*Agelaius tricolor*), State Candidate for listing as Endangered

2.4.1 Plants

Braunton's milk-vetch is a short-lived perennial plant in the pea family (Fabaceae) that occurs on limestone soils, which are rare in its range. It is known as a "fire-follower" and requires fire or other disturbance to reproduce. Plants emerge following a burn. Braunton's milk-vetch has an estimated lifespan of two to three years, and depending on fire interval, a given population may only be visible once every 20 to 50 or more years (USFWS, 1997). It is very difficult to determine the extent and viability of Braunton's milk-vetch populations because they are not detectable in habitats that have not recently burned, even if they are present in the seedbank. This species is known from areas near Topanga Canyon and along the western edge of Upper Las Virgenes Open Space.

Live-forevers Three rare subspecies of live-forever (*Dudleya cymosa ssp.*) are narrowly endemic and federally listed as threatened. Marcescent dudleya (*D. c. ssp. marcescens*) is also state-designated as rare. Agoura Hills dudleya (*D. c. ssp. agourensis*) occurs at scattered locations along the north-facing slopes of the Santa Monica Mountains from the Westlake Village area to Agoura Hills (USFWS, 1997), and several populations are known from within and just north of the North Area. Santa Monica Mountains dudleya (*D. c. ssp. ovatifolia*) is known from only a few locations on north facing slopes from Westlake to Agoura Hills on Ladyface Mountain, in Malibu Creek State Park, west of Paramount Ranch, and from portions of Malibu and Topanga Canyons.

Several of the Agoura Hills dudleya populations are on private lands zoned for commercial or residential development along the north slopes of Ladyface Mountain. Marcescent dudleya is known from approximately seven occurrences in the Santa Monica Mountains ranging from Hidden Valley to Malibu Creek State Park. Threats to the known populations include development on private lands and recreational use on park lands, particularly rock climbing, foot traffic, and collection. Fire is also a threat. Both plants occur only on volcanic or sandstone rock outcrops with specific microhabitat characteristics (USFWS, 1997). Santa Monica Mountains dudleya is also at risk from development pressure near Kanan Road and Ladyface Mountain.

Santa Susana tarplant is State-listed as rare and has a CRPR of 1B.2. It is a subshrub in the sunflower family (Asteraceae) that is endemic to the Santa Susana Mountains, Simi Hills, and Santa Monica Mountains in Los Angeles and Ventura Counties. It occurs in open sandstone habitats (outcrops and surrounding soils) within chaparral and coastal sage scrub. It is known from Calabasas Peak in the North Area, and several records in the Santa Monica Mountains and Simi Hills near the North Area (Calflora, 2018).

Lyon's pentachaeta is federally and state-listed as endangered. It is a small member of the daisy family that prefers compact, clay soils in bare patches within areas with sparse vegetation cover, such as openings within coastal sage scrub or along stream terraces. This annual plant is endemic to Los Angeles and Ventura Counties, and is not thought to have ever had a widespread distribution. Its population is now estimated to have declined by half, with several historic subpopulations now thought to be extirpated. A population at Saddle Rock Ranch near Seminole Hot Springs has been extirpated and is now an avocado orchard. Extant populations occur in Triunfo Park, Cornell, Rocky Oaks, upper Westlake Blvd., La Sierra Canyon west of Seminole Hot Springs, Malibou Lake Dam area, and north and east slopes of Ladyface Mountain; critical habitat is also designated at these locations. It also occurs at Paramount Ranch and along Bodle Peak Motorway near the southwestern North Area boundary. Portions of a population near Lake Eleanor that fall within the North Area may have been extirpated by development, and another population in Malibu Creek State Park on the border of the North Area is thought to be extirpated.

Most of the designated critical habitat units for Lyon's pentachaeta occur partially or entirely within in the North Area. These areas include the south end of Malibou Lake; in the rolling slope area of Medea Creek south of the City of Agoura Hills; near the confluence of Lobo and Triunfo creeks; La Sierra Canyon just west of Seminole Hot Springs; at Rocky Oaks Park; on the east and west ridgelines of Las Virgenes Reservoir extending to the drainage junction with Triunfo Creek and along Decker Road to the ridgeline area of Mulholland Highway; and in the upper reaches of Trancas Canyon just south of Mulholland Highway (see Figure 5a). The remaining critical habitat units for this species are in nearby Ventura County. Despite the designation of critical habitat, this species may be encountered on thin volcanic-derived soils virtually anywhere in the North Area or may be absent across large areas within mapped critical habitat.

Santa Cruz Island fringe-pod is federally listed as endangered. It is an annual herb in the mustard family (Brassicaceae) that blooms from March through April, and only produces one seed per flower. It occupies rocky outcrops, ridges, and canyon slopes (USFWS, 2009). It was recorded in 2009 just outside

the North Area boundary along the Pentachaeta Trail south of Lindero Canyon Road and Triunfo Canyon Road, as well as Malibu Creek State Park near the cabin site (Calflora, 2018).

2.4.2 Wildlife

California red-legged frog is a federally listed threatened species with one very small population left in the region, in the upper Las Virgenes Canyon area of the Simi Hills. This frog was made famous by the Mark Twain novel, *The Celebrated Jumping Frog of Calaveras County*, and was overharvested for food and scientific research in the 19th and 20th centuries. Habitat loss and degradation, including water diversions that deplete the streams and deep pools on which they depend, have also contributed to the species' decline. Agencies and organizations such as the NPS, U.S. Geological Survey (USGS), MRCA, USFWS, the Santa Monica Bay Restoration Commission, and the Santa Barbara Zoo are working to reintroduce California red-legged frogs into suitable habitat on federal and state parklands in the Santa Monica Mountains, including within watersheds of the North Area. NPS biologists found nine egg masses in a reintroduction location in March 2017, indicating that frogs reintroduced in the area in 2014 are successfully breeding on their own. These results give hope that California red-legged frogs can re-establish a more widespread presence in the region. Re-establishing multiple populations in the Santa Monica Mountains will help prevent extirpation of red-legged frogs, acting as "insurance" against catastrophic events. Designated critical habitat abuts the northern boundary of the North Area in upper Las Virgenes Canyon, but does not extend into the North Area (see Figure 5b in Attachment 1). However, this species may be encountered in wetland-riparian habitat throughout the Las Virgenes Canyon watershed, as recent sightings have been made within Calabasas near U.S. 101.

Ringtail is a small carnivore related to the racoon and is a State fully protected species. This beautiful animal has a long black and white banded tail. These solitary animals occur in chaparral, oak woodlands, and riparian habitats within canyons; especially on steeper south or west-facing slopes with oaks or other hardwoods present (Grinnell, Dixon, and Linsdale, 1937; Vaughan, 1954; Campbell, 2004). Ringtails are similar to raccoons in that they are often found within near of a permanent water source (Zeiner et al, 1990). Ringtails have been observed in Malibu Creek State Park and periodically observed by climbers and hikers elsewhere.

White-tailed kite is fully protected in California. It is a small raptor known for its habit of hovering in place over open fields while foraging for small rodents. It is a resident species in a variety of open habitats including grassland with sparse oaks, desert grassland, agricultural fields, and marshes. It requires trees for perching and nesting, and open habitats with large populations of rodents for foraging. It formerly nested widely across the North Area, including the wildland-urban interface, but there have been few nest records since 2012. This apparent decline is likely due to drought.

Golden eagle is fully protected in California and is federally protected under the Bald and Golden Eagle Protection Act. It is a year-round resident throughout most of its range in the western U.S. In the southwest, it is more common during winter when eagles that nest in Canada migrate south into the region. Golden eagles generally nest in steep, rugged terrain, often on sites with overhanging ledges, cliffs, or large trees that are used as cover. Foraging habitat consists of open terrain including grasslands, deserts, savanna, and early successional forest and shrubland habitats. It preys primarily on rabbits and

rodents, although it will take other mammals, birds, reptiles, and some carrion. It historically nested in the North Area (prior to 2000) and is now recorded only occasionally in the fall and winter.

Peregrine falcon is fully protected in California. It was previously federally and state-listed as endangered. It was removed from the federal endangered species list in 1999, and from the California endangered species list in 2009. The peregrine falcon occurs throughout much of the world and is one of the fastest flying birds of prey. It feeds almost entirely on birds, which it kills while in flight. This falcon primarily nests on ledges and caves of steep cliffs, but will also nest in trees, electric transmission towers, buildings, and other man-made structures, particularly if it is using nests constructed by other species (Luensmann, 2010). In California, it nests along the entire coastline, the Cascade Ranges, and the Sierra Nevada. During winter and migratory periods, it can be found throughout the State (White et al. 2002). Peregrine falcon is frequently recorded in the North Area in fall and winter (eBird, 2017); and recent nesting was documented in Topanga Canyon State Park (NPS data).

Tricolored blackbird is an endemic to California where it can form huge nesting colonies in the central Valley. Grinnell (1898) reported this was in “considerable numbers” throughout the year in Los Angeles County; however, this bird is uncommon in the Santa Monica Mountains. Tricolored blackbirds typically require freshwater marshes to breed and breeding sites support open accessible water; a protected nesting substrate, including either flooded or thorny or spiny vegetation; and a suitable foraging space providing adequate insect prey within a few kilometers of the nesting colony (Beedy and Hamilton 1997). The tricolored blackbird has been recently recorded at a pond in the North Area near Mulholland Highway where it was thought to be nesting (CDFW, 2017a); however, further investigations should be completed to determine if the birds are nesting at this location or if these were transient birds. This species is a candidate for state listing as endangered.

Attachment 2 presents the listed and other special-status species known or with potential to occur in the North Area.

2.4.3 Other Special-status Species

In addition to the listed species and fully protected species above, numerous vertebrates ranked as California Species of Special Concern and plants included in the California Rare Plant Ranking system occur or may occur in the North Area and are dependent on its habitats for at least a portion of the year. All special-status species potentially occurring in the North Area are identified in Attachment 2, with brief summaries of their habitats, conservation status, and potential to occur. Many of these species trigger various management responsibilities for landowners during the CEQA process, and so are important to consider in environmental planning. The special-status species known from the North Area are listed below:

- Malibu baccharis (*Baccharis malibuensis*) – rocky areas in chaparral, lower Las Virgenes Canyon
- South Coast Range morning-glory (*Calystegia collina* ssp. *venusta*) – volcanic outcrops, especially in the vicinity of Malibou Lake
- Round-leaved filaree (*California macrophylla*) – grassland in heavy clay soil, often with other scarce forbs

- Ojai navarretia (*Navarretia ojaiensis*) – clay lenses at interface between oak woodland and grassy openings
- Catalina mariposa lily (*Calochortus catalinae*) – heavy clay soil
- Slender mariposa-lily (*Calochortus clavatus* var. *gracilis*) – various habitats
- Plummer's mariposa-lily (*Calochortus plummerae*) – various habitats
- San Bernardino ringneck snake (*Diadophis punctatus modestus*) – various habitats
- Two-striped gartersnake (*Thamnophis hammondi*) – riparian corridors, usually with permanent water
- Southern western pond turtle (*Actinemys pallida*) – pools along permanent creeks, small ponds
- Coast horned lizard (*Phrynosoma blainvillii*) – sandy soils, often along ridgelines
- Coastal whiptail (*Aspidoscelis tigris stejnegeri*) – various habitats
- Loggerhead shrike (*Lanius ludovicianus*) – extensive grassland, often with low, scattered shrubs
- Northern harrier (*Circus cyaneus*) – extensive grassland
- Yellow-breasted chat (*Icteria virens*) – dense riparian vegetation near permanent water
- Yellow warbler (*Setophaga petechia*) – high-canopy riparian woodland
- Long-eared owl (*Asio otus*) – stringers of willows and oaks through grassland
- Bats (various)

2.4.4 Uncommon or Locally Rare Species

The Santa Monica Mountains and portions of the North Area support a variety of plants and wildlife that are considered uncommon or rare in the region. Some of these species, such as California juniper, are widespread in Los Angeles County, yet occur in the Santa Monica Mountains at only a few locations within the North Area. Other species such as tidytips (*Layia platyglossa*), a small yellow-colored daisy, were once common in the range, and are widespread in the Antelope Valley and Mojave Desert, but now occur in only a few locations of the North Area.

Birds including greater roadrunner (*Geococcyx californianus*), northern harrier (*Circus cyaneus*), and Bell's sparrow (*Artemisiospiza belli*) were once more common and are now observed less frequently in the North Area. Mammals such as the American badger may no longer occur, and the western gray squirrel is being displaced by the non-native fox squirrel. In addition, several species of butterfly including the cloudy tailed-copper (*Lycaena aorta*), Comstock's fritillary (*Speyeria callippe comstocki*), and Gorgon copper (*Lycaena gorgon*) have experienced declines in recent years. Similarly, California treefrog, a species common to southern California streams, has been extirpated from many drainages in the North Area. Most of these species do not have a designated conservation status; nonetheless, resource agencies and local experts consider them to be locally uncommon and warrant additional consideration.

2.5 Species Diversity and Ecosystem Health in the North Area

Broadly speaking, biodiversity is defined as “the assemblage of all living organisms that interact within an ecosystem.” Ecosystems support all forms of life, moderate climates, filter water and air, conserve soil and nutrients and control pests (Vold and Buffett, 2008). An ecosystem can range from a pond and the organisms that live there to the Earth; yet all are inexorably linked together.

One of the top threats to biodiversity in the modern world, and particularly in southern California, is habitat loss and fragmentation. These factors have contributed to most of the species population declines and local extinctions in the state. Slowing and reversing these trends requires conserving large, connected areas of wildlands that allow for movement and gene exchange. This is particularly urgent in California, as the California floristic region is considered one of the 25 most important biological diversity hotspots in the world. However, southern California is also the largest urban area in the U.S. and is still rapidly urbanizing (Penrod et al., 2006). These factors underscore the importance of the Santa Monica Mountains, including the North Area, as a remaining core habitat area amidst the urbanization of the greater Los Angeles basin.

For the Santa Monica Mountains, the North Area is but one part of the broader range which stands isolated in many locations because it is largely surrounded by urban centers. However, despite large areas of natural lands many species are no longer common or have been extirpated from the region. American badger, a once common animal, may no longer occur or may be restricted to roadless areas with the most extensive open space. Badgers are extremely vulnerable to mortality from vehicle collisions and from ingesting rodents that have eaten pesticides. Mountain quail are no longer present in the North Area and spotted skunk are now uncommon. California tree frog, a species common to streams across the west, is now absent from many urban streams and southern western pond turtles are known from only a few locations. Native fish may no longer occur. Habitat loss, development, and water diversions have all contributed to the decline of native species in the region.

The North Area supports large areas of natural lands and large tracts of land are conserved as parkland or open space. Nonetheless, the influences of urbanization affect the region and natural ecosystems have been altered or degraded in many areas. This can often be detected by looking at the assemblage of plant and wildlife species in each habitat type. *Indicator species* are those plants or animals that are closely associated with a particular habitat type, and that are sensitive to changes in ecosystem health. Indicator species are generally not tolerant of disturbances to their habitat. Because of their sensitivity, they can be indicators of ecosystem health. Areas that support a broad diversity of native plant species such as California cottonrose (*Logfia filaginoides*), false nest straw (*Ancistrocarphus filagineus*), everlasting nest straw (*Stylocline gnaphaloides*), Turkish rugging (*Chorizanthe staticoides*), and other annuals can be an indicator of floristic health. In addition, certain lichens and plants are sensitive to heavy metals, acids, and other environmental toxins, and their disappearance from a site can suggest contamination or air pollution. Conversely, the presence of wildlife indicator species can suggest that the ecosystem is healthy and is not under strain from pollution, disturbance, or other factors. Table 2 identifies some indicator species for various habitats in the North Area (Cooper, 2017).

Table 2. Indicator Wildlife Species in Santa Monica Mountains North Area Habitats

Habitat	Indicator Species		
Oak Woodland	<ul style="list-style-type: none"> ▪ Western gray squirrel ▪ California sister ▪ Northern flicker 	<ul style="list-style-type: none"> ▪ Acorn woodpecker ▪ Hutton's vireo ▪ Oak titmouse 	<ul style="list-style-type: none"> ▪ White-breasted nuthatch ▪ Arboreal salamander ▪ Monterey ensatina
Riparian	<ul style="list-style-type: none"> ▪ Ringtail ▪ Downy woodpecker ▪ Black-chinned hummingbird ▪ Western wood-pewee ▪ Warbling vireo ▪ Yellow warbler 	<ul style="list-style-type: none"> ▪ American goldfinch ▪ Arroyo chub ▪ Two-striped garter-snake ▪ Western pond-turtle ▪ California treefrog 	<ul style="list-style-type: none"> ▪ Coast Range newt ▪ Southern steelhead ▪ Fatal metalmark ▪ Lorquin's admiral ▪ Satyr anglewing
Grassland	<ul style="list-style-type: none"> ▪ Bats (foraging) ▪ American kestrel ▪ Barn owl ▪ Badger 	<ul style="list-style-type: none"> ▪ Pacific kangaroo-rat ▪ Northern harrier ▪ White-tailed kite ▪ Loggerhead shrike 	<ul style="list-style-type: none"> ▪ Blue grosbeak ▪ Western meadowlark ▪ Yellow-bellied racer ▪ California ringlet
Rock Outcrop	<ul style="list-style-type: none"> ▪ Bats ▪ Spotted skunk ▪ Turkey vulture 	<ul style="list-style-type: none"> ▪ Golden eagle* ▪ Violet-green swallow ▪ Canyon wren 	<ul style="list-style-type: none"> ▪ San Diego mountain kingsnake
Scrubland	<ul style="list-style-type: none"> ▪ Pallid bat ▪ Desert woodrat (cactus) ▪ Brush rabbit ▪ Mountain quail 	<ul style="list-style-type: none"> ▪ Greater roadrunner ▪ Blue-gray gnatcatcher ▪ Bell's sparrow ▪ Rufous-crowned sparrow 	<ul style="list-style-type: none"> ▪ Lawrence's goldfinch ▪ Coast horned lizard ▪ Coast patch-nosed snake ▪ Chalcedon checkerspot

Source: Cooper, 2017

*extirpated

2.6 Stream Function

Stream function is another indicator of ecosystem health. The major drainages in the North Area support stretches of well-developed riparian communities, which are essential to biodiversity. Natural watercourses provide water, food and cover for wildlife and provide an ecological link between the upland and marine environments. They also contribute to regional and continental connectivity by providing shelter and forage for many migratory bird species, which supplies biodiversity over several spatial scales. Riparian corridors also buffer against erosion, regulate nutrient cycling, allow for sediment and rich biomass (leaves, etc.) to move to downstream areas, and provide barriers to fire spread (Tiszler and Sagar, 2012).

Many of the stream systems in the North Area are compromised by poor water quality, invasive species, urban development, and historic water diversions. Creeks, streams, ponds, and other water bodies and their associated riparian habitats are particularly sensitive to a variety of effects; they also support a disproportionately high number of species that depend on water availability and the dense and usually multi-structured vegetation for shade and protection. Other animals use riparian areas to forage; the higher concentration of plants (due to available water and cooler microclimates) feeds herbivorous species, and the higher number of both aquatic and terrestrial animals in these locations means greater prey availability for predatory animals. Drainages also provide local movement corridors for many animals and support a wide variety of breeding birds in the spring and summer.

Aquatic and riparian habitats are vulnerable to a variety of adverse effects. Even small changes in water availability can kill some plants and aquatic animals, which creates a cascade of adverse effects through the suite of species that depend on them in turn. For example, an unpermitted water diversion restricts

water flows to downstream habitats. Left unchecked, this can result in local extirpation of fish and amphibians downstream from the lack of water. It can also change the composition of habitat by creating conditions that are favorable for weed infestation. Weedy species that infest riparian areas are often more tolerant of variations in water availability than native plants, which can allow them to invade an area and crowd out other species.

Many of the drainages in the North Area are downstream of urbanized areas and routinely convey urban run-off. While runoff can provide a consistent source of water, it also contains residual fertilizers, pesticides, motor oil, soaps, and other pollutants. A consistent pattern of ecological degradation has been observed in streams that drain urban areas across the globe, and ecologists have termed this phenomenon the “Urban Stream Syndrome.” Symptoms include more frequent and larger flow events, higher concentrations of nutrients (e.g., fertilizers) and contaminants, changes to channel banks and stability, and reduced biodiversity with a higher concentration of tolerant (usually nonnative and invasive) species (Walsh et al., 2005).

Non-native aquatic species in the Santa Monica Mountains include red swamp crayfish (*Procambarus clarkii*) native to the southeastern United States, American bullfrogs (*Lithobates catesbeianus*), and a number of fish species including bass, bluegill, and mosquitofish (Delaney and Riley, 2016). Various studies have documented an inverse relationship between the presence of invasive aquatic species and native aquatic species in the Santa Monica Mountains, including special-status species (Delaney and Riley, 2016).

2.7 Buffer Areas

Buffer areas between development and wildlands are important to minimize some of the effects of development including noise, light, invasive species (e.g., weeds, Argentine ants), and other factors that degrade habitats. They may also refer to areas around a particular habitat type that support foraging or some other activity of a given species, but do not necessarily comprise its primary habitat. Virtually any habitat type may serve as a buffer area, depending on the resources being buffered, and the local impact. The size of an effective buffer varies greatly depending on such factors as level of disturbance, land use, sensitivity of adjacent areas, and target species. Buffer areas can help maintain habitat connectivity and wildlife movement corridors. Buffers surrounding development are a valuable tool in helping to protect sensitive habitats from the effects of urbanization.

Buffer areas themselves may also provide secondary, though essential habitat for habitat specialist plants and animals. Terrestrial habitats adjacent to wetlands are integral to the survival of many semiaquatic species who depend on them to complete their life cycle. Thus, management of natural resources in wetland areas necessarily includes management of these core habitats. Semlitsch and Bodie (2003) found that, for amphibians, core terrestrial habitat ranged from 159 to 290 meters (521 feet to 951 feet) from the edge of the aquatic site, although this may differ in various locations depending on slope, soil type and vegetative cover. Rottenborn (1997) also showed that the proportion of native bird species declined the closer a plot was to developed areas; however, some urban tolerant species can effectively use developed areas for foraging and nesting. Data from these studies emphasized the

importance of preserving buffer areas around core terrestrial habitats for feeding, hibernating and aestivating, and nesting.

Buffers are particularly important along riparian corridors. Vegetation along stream corridors help hold soil in place and prevent erosion, filter out pollutants, and keep excess sediment from entering the waterway. Shade helps keep water cool and maintains suitable habitat for many aquatic fish, reptiles, and amphibians. Vegetation in riparian buffers also provides nesting and foraging habitat for birds and shelters an abundance of insects and other invertebrates that play many important roles in the ecosystem, including food sources for other wildlife, pollination for plants, and decomposition. Work completed by the Santa Monica Mountains Resource Conservation District (SMMRCD) found southern western pond turtles nesting well away from riparian areas in upland habitat. Similarly, two-striped garter snake is known to winter in upland habitat far away from riparian areas. To maximize the ecological value of a buffer it should be designed to also function as wildlife corridors when possible, linking larger habitats and providing a dispersal route for wildlife (Fischer and Fischenich, 2000).

2.8 Biological Connectivity in the Santa Monica Mountains

An important component to biodiversity and ecosystem health is the ability for plants and wildlife to move among local populations in adjacent areas. In the short term, movements can support demographic stability of small localized populations. In the longer term, it can maintain genetic diversity among semi-isolated local populations. This movement is accomplished by the movement or dispersal of pollen in the wind, seeds transported by birds or animals to other areas, and through the dispersal of animals to adjacent habitat. Development can hinder this process and isolate species from adjacent populations. Urbanization often results in habitat fragmentation, where patches of natural habitat are surrounded by development and become “islands” due to loss of connectivity to other natural habitat areas. In a broad sense, the Santa Monica Mountains can be considered an island located within an urban matrix.

Depending on home ranges, territories, and the needs of a species, habitat patches can lose entire species when they are no longer large enough to support the species’ requirements. Some species may persist, but often population sizes are restricted. The smaller the patch size, the greater the loss of biodiversity (number of species inhabiting the patch). For populations that remain, the loss of connectivity to other populations can result in genetic divergence between discrete populations (i.e., isolated populations become more and more different from each other genetically). Also, small populations can quickly lose genetic diversity due to genetic drift¹ and inbreeding (Delaney et al., 2010a). The result is a population that is less genetically robust, and more susceptible to extirpation, or localized extinction, than a population with more genetic diversity. Therefore, development patterns that maintain connectivity and avoid creating isolated patches, particularly small patches, are needed to maintain healthy ecosystems.

¹ Genetic drift is the tendency for the frequency of a trait in a population to vary from generation to generation due to chance events not having to do with selective advantage of the trait, but rather to the “luck of the draw” aspect of egg and sperm production. Over time, this can result in a loss of biodiversity. This process may occur exceptionally rapidly in small populations.

2.8.1 Movement Corridors

Wildlife corridors and functions must be evaluated in the context of individual species and their ecology. For example, low-mobility species including snakes, lizards, and small mammals often have restricted home ranges. Animals in this group reproduce with animals in adjacent habitat and gene flow moves slowly along a region. Conserving open areas and linkages is important to prevent these types of species from becoming isolated from other populations. Wide-ranging species including mountain lions have broad territories which require the preservation of wildlife corridors and linkages to natural lands.

Wildlife corridors facilitate movement between habitats that would otherwise be isolated. These corridors include habitat linkages between natural areas, greenbelts, and refuge systems. They can divert wildlife across permanent physical barriers to aid dispersal (e.g., underpasses and ramps that help wildlife cross highways and dams) (Haas, 2000; Simberloff et al., 1992). Noss (1987) suggests several benefits of corridors, including the promotion of species richness and diversity, decreased probability of extinction, maintenance of genetic variation, increased mix of habitat and successional stages, and alternative refugia from large disturbances.

The following corridor functions are important in evaluating impacts to wildlife movement corridors:

Movement corridors are physical connections that allow wildlife to move between patches of suitable habitat.

Dispersal corridors are linear landscape features that link two or more areas of suitable habitat that would otherwise be fragmented and isolated from one another by rugged terrain, changes in vegetation, or human-altered environments (Beier and Noss, 1998). They are often referred to as “wildlife corridors.” Such areas generally are several hundred feet wide, unobstructed, and usually possess cover, food, and water. The upland margins of a creek channel, open ridgelines, open valleys, or the bottoms of drainages often serve as major corridors on a local scale. Corridors used by mountain lions require even wider open space areas to maintain movement opportunities. Dispersal corridors provide physical links for genetic exchange and allow animals to access alternative territories as dictated by fluctuating population densities.

Landscape habitat linkages (or simply linkages) are open space areas that contain natural habitat and provide connection between at least two larger adjacent open spaces that can provide for both diffusion and dispersal of many species. Linkages provide sufficient cover, food, water, and other essential elements to serve as a movement pathway. Many species including small mammals and reptiles may spend their entire life history within a habitat linkage area.

Travel routes are usually landscape features, such as ridgelines, drainages, canyons, or riparian corridors within larger natural habitat areas that facilitate movement and provide access to water, food, cover, den sites, or other necessary resources (Meffe and Carroll, 1997). They are often located within a dispersal corridor or habitat linkage area.

Wildlife crossings are small, narrow areas of limited extent that allow wildlife to bypass an obstacle or barrier. Crossings typically are manmade and include culverts, underpasses, drainage pipes, bridges, and tunnels to provide access past roads, highways, pipelines, or other physical obstacles. Wildlife crossings

often represent “choke points” along a movement corridor because useable habitat is physically constricted at the crossing by human-induced changes to the surrounding areas (Meffe and Carroll, 1997).

Wildlife buffers are areas between the urban development edge and an important biological resource. These buffers protect the resource from adverse edge effects such as habitat degradation, increased occurrence of non-native and urban-related species, increased predation from domestic animals and mesopredators (e.g., raccoons, skunks, snakes, foxes), and other edge effects. (USACE and CDFG, 2010)

2.8.2 Local and Regional Wildlife Movement in the North Area

Local Movement

The Santa Monica Mountains maintains large areas of open space and although roads and pockets of development can hamper wildlife movement, data from the NPS indicate that large mammals such as mountain lions, bobcats, and coyotes move freely throughout the mountains (see Figure 6 in Attachment 1). The North Area’s size, topographic complexity, and open space allow movement in all directions on a local scale. Malibu Creek State Park, which partially overlaps the North Area, has been identified as the central core habitat area in the Santa Monica Mountains, connecting the Simi Hills to the north, and the large open space preserves of Topanga State Park to the east and Mugu State Park to the west (in Ventura County) along with various undeveloped areas in between (Edelman, 1990). However, this core area is now highly-used by recreationists, including hikers, trail-bikers, and rock-climbers, while other areas (e.g., Cold Creek Preserve) have been largely off-limits to human intrusion. Therefore, the designation of “core habitat” is highly dependent on management, as well as geography, and may change through time.

The movement of species through the North Area is crucial to maintain the genetic diversity and population viability of the plant and wildlife species within the Santa Monica Mountains. The NPS has identified open space linkages between Kanan Dume Road and Calabasas Parkway along the U.S. 101 freeway corridor as particularly important for continued connectivity of wildlife populations, due to a lack of alternative routes and encroachment of development (Nelson, 2000). Although there are large open spaces within the North Area, various bottlenecks also occur. Maintaining habitat linkages and connectivity throughout the mountains is critical for long-term ecosystem health and sustainability.



U.S. 101 at Liberty Canyon

Regional Movement

Although many large and medium-sized mammal species move through the North Area, movement outside the mountains is important for large mammals such as deer, bobcat, and mountain lion. Regional movement is also important for smaller species in the North Area such as wrentit (*Chamaea fasciata*) because it allows access to new genetic material that slowly spreads through the system and prevents inbreeding. The Santa Monica-Sierra Madre Connection, a regional landscape linkage, is one of the last connections in the region between coastal and inland areas. This linkage connects habitats of the Santa Monica Mountains to the protected wildland habitats of the Simi Hills and Sierra Madre Mountains to the north. The greatest barrier to movement between the Santa Monica Mountains and habitats to the north is U.S. 101 (Penrod et al., 2006).

This barrier effectively reduces wildlife movement across the North Area and has resulted in wildlife mortality from vehicle collisions. The underpass of U.S. Route 101 at Liberty Canyon Road is one of the few active wildlife passage areas along the entire extent of U.S. Route 101 through the Santa Monica Mountains. Other watercourse and street crossings of U.S. Route 101 are very constrained or entirely impassible for wildlife. There are widely documented concerns for the consequences of genetic isolation for the small band of mountain lions of the Santa Monica Mountains. Mountain lions have been documented by the NPS and others using this crossing to transit back and forth between the Santa Monica Mountains and the greater lion populations of the Simi Hills and areas to the north. Caltrans, with the support of a coalition of government agencies, non-governmental organizations, conservation groups, and others, is proposing a wide, vegetated overpass to provide safe wildlife crossing over U.S. Route 101 at Liberty Canyon. The U.S. 101 Liberty



Liberty Canyon undercrossing facing north



Liberty Canyon undercrossing facing south



Open space in the Simi Hills just north of the Liberty Canyon undercrossing

Canyon Wildlife Crossing Project is currently in the design and environmental review phase and would help to preserve and enhance the greater Santa Monica-Sierra Madre Connection.

Mountain lions are particularly vulnerable to the effects of habitat fragmentation and barriers to movement in the Santa Monica Mountains and surrounding areas because they have large home ranges (about 200 square miles for adult males and 75 square miles for adult females; NPS 2017a), and young lions must be able to disperse out of the resident adults' territories or they risk being injured or killed in intraspecific conflicts (NPS 2017a). In fact, the leading cause of death of the mountain lions tracked by the NPS has been "intraspecific conflict," or mountain lions killing other mountain lions (NPS, 2017a). There are currently approximately 15 mountain lions known in the Santa Monica Mountains, and a recent study conducted by biologists from NPS and UCLA found that this population faces the possibility of extinction in the near future due to loss of genetic diversity from inbreeding, a result of their isolation from other mountain lion populations. However, enhancing gene flow by providing avenues for connectivity, such as the proposed Liberty Canyon wildlife crossing, could maintain current levels of genetic diversity and preserve the mountain lion population in the Santa Monica Mountains (Benson et al., 2016).

2.8.3 Barriers to Movement

In addition to the substantial barrier presented by U.S. Route 101, many of the large roads in the North Area hinder wildlife movement. Higher-traffic roads such as Topanga Canyon Boulevard (SR-27), Old Topanga Road, Mulholland Highway, La Virgenes Road, Kanan Dume Road, and Westlake Boulevard (SR-23), and smaller rural roads also pose a danger to animals. Roads are a significant contributor to local habitat fragmentation and loss of genetic diversity in the populations isolated by the presence of roads (Delaney et al., 2010a). Roads have been shown to highly correlate with genetic



Fencing can obstruct large mammal movement



Highways and roads are barriers to movement for all terrestrial wildlife



Structures in creeks can impede aquatic wildlife movement and affect water quality

divergence among populations of small animals. This is particularly evident for species with small home ranges and restricted mobility in the Santa Monica Mountains.

Animals may avoid roads due to noise and human presence, and those that do attempt to cross often run the risk of being hit by vehicles. Over 17 mountain lions have been struck and killed by vehicles in the Santa Monica Mountains and surrounding areas since 2002 (NPS, 2017a). Amphibians are particularly vulnerable to road kill because they disperse across uplands between water sources, are small and inconspicuous, and are usually slow-moving. The ecological effects of roads have been widely studied (Trombulak and Frissell, 2000; Findlay and Bourdages, 2000; Jones et al., 2000; Parendes and Jones, 2001; Haskell, 2000; and Vistnes and Nellemann, 2001). Seven general effects of roads have been identified:

- mortality from road construction,
- mortality from vehicle collisions,
- modification of animal behavior,
- changes to the physical environment,
- changes to the chemical environment,
- spread of invasive species, and
- increased human access and use (Trombulak and Frissell, 2000).

There are other effects from development that can obstruct or interfere with wildlife movement. These include factors that cause animals to avoid an area, such as bright lighting at night and loud noise. Fencing that is not wildlife-friendly can obstruct movement, and when it is alongside a hazardous area such as a road, can “funnel” wildlife into harm’s way. In aquatic systems, dams and other barriers built into drainages can impede movement for fish and amphibians. Minimizing barriers to movement is an essential element of wildlife-human coexistence, especially in “islands” of open space surrounded by urbanization such as the North Area and greater Santa Monica Mountains.

3. HUMAN-WILDLAND INTERACTIONS

The North Area is home to thousands of people who live, work, and play in the mountainous countryside. State and National Parks, numerous hiking trails, scenic roadways, charming restaurants, small wineries, and the rich history of movie and filmmaking draw countless people to the area. Equestrian trails allow access to remote areas and the many rock outcrops are visited by hikers and climbers.

Many people choose to live in the North Area and communities and rural homes are nestled into the valleys, foothills and mountains. In many locations, development is immediately adjacent to natural lands, perennial streams, and small creeks. The area where wildlands and development meet is called the *urban-wildland interface*. Although not intended, development has fragmented habitat and can have unforeseen effects to native plants and wildlife in adjacent areas. As described above, communities and even isolated rural homes have “edge-effects” that can result in habitat degradation, loss of species, and long-term shifts in habitat quality. The NPS, SMMRCD, and other local organizations have prepared guidelines and pamphlets for the public about living in harmony with nature in the Santa Monica Mountains². Some of these efforts focus on controlling the use of harmful herbicides and pesticides, educating the public on the use of bird feeders and outdoor pet feeders, constructing safe animal enclosures, and controlling the spread of non-native nursery plants.

The edge effects that occur in the *urban-wildland interface* vary by location and intensity. These effects may include an increase in urban-adapted predators, disturbance from outdoor lighting and noise, and the spread of non-native plants and invasive wildlife species. All homes and businesses require brush clearance to create defensible space during wildfires. Horse stables, agricultural practices, leaking septic tanks, pesticide/herbicide use, and urban run-off can degrade water quality, displace native species and contribute to long term effects to wildlife. Aquatic and riparian habitats are delicate ecosystems that are vulnerable to a variety of urban edge effects.

3.1 Urban Effects to Native Plants and Wildlife

3.1.1 Mesopredators

The *urban-wildland interface* often includes a higher proportion of non-native species, including escaped ornamental plants and common weeds. Cats and dogs, which can prey on wildlife, often roam in these areas. Mesopredators, or medium-sized animals that prey on smaller animals and are in turn preyed upon by larger, or apex, predators, become abundant around developed areas because of increased access to food sources (e.g., animal feed left outside, bird feeders, trash in garbage cans, and rodents) and shelter while larger more secretive predators are usually uncommon around development. Common mesopredators in the North Area include raccoons, skunks, coyotes, and domesticated or feral cats and dogs. Feeding animals indoors or removing food bowls after feeding can reduce this effect.

² E.g., the “Living Lightly in the Santa Monica Mountains” guide, available at <http://www.livinglightlyguide.org/>

3.1.2 Noise, Lighting, and Edge Effects

Noise from outdoor functions, music venues, vegetation management, traffic, and general human disturbance can affect wildlife in adjacent habitats by interfering with breeding or foraging activities and movement patterns. In some instances, the level of disturbance forces animals to temporarily or permanently avoid areas adjacent to the noise. Nocturnal wildlife is affected by bright lights and will often avoid lit areas. Brightly lit areas around homes that illuminate adjacent habitat can displace wildlife. Using motion detector lights and focusing lighting toward the property can minimize the effects of night time lighting to wildlife.

3.1.3 Non-Native Plants and Invasive Weeds

Weeds, escaped ornamentals, and other non-native species are common in the North Area. Over 100 species of non-native plants have been observed in the North Area. Most of the grassy fields and hillsides of the region are covered with non-native brome and oat grasses including red brome, rip gut brome (*Bromus diandrus* [*B. rigidus*]), soft chess (*Bromus hordeaceus* [*B. mollis*]), and wild oats. The beautiful fields of yellow seen each spring are dominated by black mustard (*Brassica nigra*) a plant introduced by the Spanish. Russian thistle (*Salsola australis*), also known as tumbleweed, is common and can be found across the North Area, particularly on recently disturbed or burned soil. Giant reed, sweet fennel (*Foeniculum vulgare*), tree of heaven (*Ailanthus altissima*), greater periwinkle (*Vinca major*), English Ivy (*Hedera helix*), and Mexican fan Palm (*Washingtonia robusta*) are common in many streams and creeks.

Fountain grass (*Pennisetum setaceum*) is a densely clumped perennial grass that is native to Africa and the Middle East. This species is commonly seen on Mulholland Highway and can quickly spread to riparian area. Fountain grass is a fire-adapted plant and can regenerate rapidly following fires. It can significantly augment the fuel load of a community, increasing the intensity and frequency of fires such that native plants not adapted to such extreme fire regimes can be significantly impacted. This alteration of fire regimes can have major effects on community composition, causing native desert shrublands to convert to grasslands (DiTomaso and Healy, 2007). Other exotics common in the North Area include gum trees (*Eucalyptus* spp.), Peruvian pepper (*Schinus molle*), and salt cedar (*Tamarisk* spp.).

Invasive and noxious weeds present a severe threat to natural habitats. When weeds become established in an area, they can cause a permanent or long-lasting change in the environment by increasing vegetative cover, that prevents native vegetation from germinating. This can stop the normal successional processes that would typically allow an area to recover from disturbance. Weed populations can alter the physical conditions through nitrogen fixation (as in Spanish broom, *Spartium junceum*, a species locally common along Kanan Dume Road), or by consuming substantial amounts of water from creeks such as giant reed, a species common to several watersheds in the region.

Monocultures of noxious weeds typically create an unfavorable environment for wildlife. Consequently, mutualistic species necessary for native plant life cycles, such as seed dispersers, fossorial mammals, or pollinators, can be lost from the area. Heavy infestations can also significantly reduce the recreational or aesthetic value of open space.

Planting native species or plants that have a lower potential to colonize adjacent natural lands can save water and reduce the spread of exotic plants to native habitat.

3.1.4 Argentine Ants and Decollate Snails

Human activities can spread pest species such as Argentine ants. These ants are native to northern Argentina, but, have spread throughout the world. They thrive in California's Mediterranean climate, where they form giant colonies that kill or push out native ants and other invertebrates. In addition to causing a nuisance in people's homes, they invade wildlands and can drastically upset the balance of the local ecosystem. Plants that rely on native ants for pollination and pest control are adversely affected when native ant populations are decimated by Argentine ants, who do not perform those same roles in the ecosystem. Coast horned lizards, once a common sight along hiking trails and in vacant lots in southern California, are now a California Species of Special Concern as their populations have decreased in part from Argentine ants displacing the native harvester ants that make up a large portion of their diet. Argentine ants also swarm and kill nestling birds and other small animals. Argentine ants can also have a detrimental effect on both native and cultivated plants, as they "farm" aphids for their honeydew excretions. High aphid loads can seriously weaken or kill plants. Urban development provides these invasive ants with water, supplemental food sources, and warm shelter, and also provides an avenue for infestation as ants stow away in landscaping materials and move in from adjacent developments.

Decollate snails (*Rumina decollate*), an introduced predatory gastropod sold in local garden stores as a biocontrol for the garden snail (*Helix aspersa*), occur in the North Area. These snails have been detected in wildland areas adjacent to the urban-wildland interface and may prey on native snails.

3.1.5 Herbicide and Pesticide Use

Pesticides and herbicides are often deployed at homes, ranches, vineyards, orchards, and other developments to control weeds and nuisance species like Argentine ants and rodents. Pesticides and herbicides can wash into storm drains and natural watercourses, degrading water quality in riparian areas and in coastal estuaries where the North Area drainages ultimately lead. These chemicals can percolate into groundwater and contaminate well water; however, these effects are not well understood in the North Area.

Anticoagulant rodenticides, which are usually poisons broadcast in pellet form or put out into bait boxes to kill rats and other small mammals, have had a particularly devastating effect on local wildlife in the Santa Monica Mountains. These poisons work by interfering with the animal's blood clotting ability, which causes it to die from internal bleeding.

Death from anticoagulant rodenticides is slow and can take up to 10 days from the time the poison is ingested. During this time, they become slow and lethargic and are easy prey for other animals such as bobcats, coyotes, dogs and cats, and birds of prey (hawks, falcons, owls, eagles, and vultures). The predator then becomes sickened by the poison, becoming weaker as it ingests additional poisoned prey items (secondary poisoning). Apex predators such as mountain lions can have high concentrations of rat poisons in their bodies that have accumulated from all of the prey items they have eaten; in this way the rodenticides spread throughout the food chain. The NPS reports that most of the carnivores tested

during its ongoing carnivore study in the Santa Monica Mountains were exposed to anticoagulants. Specifically, 92 percent of bobcats, 83 percent of coyotes, and 92 percent of mountain lions had the poisons in their systems, including a 3-month-old mountain lion kitten. Anticoagulant poisoning was determined to be the second leading cause of death for the coyotes in the study (as described in NPS, 2017b).

Anticoagulant rodenticide poisoning can directly kill predators that ingest poisoned prey animals, but even at sub-lethal levels these poisons have serious consequences. Anticoagulant rodenticides accumulate in body tissues, and animals can become weakened, making them susceptible to becoming very ill from common illnesses that healthy individuals can usually fight off. For example, mountain lion and bobcat populations studied by the NPS in and around the North Area have been documented with unusually high rates of notoedric mange infestation. Mange is caused by a tiny parasitic mite, and healthy animals with these mites usually do not develop a severe disease. However, when an animal is stressed, sick, or otherwise in a weakened state, mange can progress into a severe and often fatal disease. NPS researchers found that, beginning in 2002, the local bobcat population experienced a dramatic outbreak of mange which killed many individuals. Of the 19 tracked bobcats that died of mange during the study period, all had been exposed to anticoagulants. In addition, the higher the concentration of anticoagulants in an animal's system, the higher the chance of being infected with mange. The researchers found that the radio-tracked animals that spent the most time in developed areas had the highest toxic load. Bobcats disappeared from some areas completely, and the populations have been slow to recover. This study also documented two mountain lions that died directly from anticoagulant poisoning in 2004, and both also had mange. (Riley et al., 2007)

Herbicides have the potential (both when used properly or improperly) to adversely impact wildlife. Possible adverse direct effects from direct contact or ingestion of treated vegetation to individual animals include death, damage to vital organs, decrease in body weight, decrease in healthy offspring, and increased susceptibility to predation depending on exposure length and amounts (SERA, 2003). Predators feeding on animals that have been exposed to high levels of herbicide are more likely to be affected, particularly if the herbicide bio-accumulates in their systems as described for rodenticides. Adverse indirect effects include the following: a reduction in plant species diversity and consequent availability of preferred food, habitat, and breeding areas; decrease in wildlife population densities within the first year following application as a result of limited reproduction; habitat and range disruption (because wildlife may avoid sprayed areas following treatment), resulting in changes to territorial boundaries and breeding and nesting behaviors; and increase in predation of small mammals due to loss of ground cover (BLM, 2007). Table 3 summarizes some of the effects that herbicides can have on wildlife.

Table 3. General Effects of Herbicides on Wildlife Species

Herbicide	Physical Effects	Risk to Wildlife
Chlorsulfuron	Causes weight loss and decreased body weight gain in experimental mammals.	Poses low to moderate risk under multiple exposure scenarios involving applications at the typical (2 lbs acid equivalents [a.e.]/acre) and maximum application rates (7 lbs a.e./acre) (Table 4-23 in BLM, 2007). Direct spray of small animals and insects, assuming 100% absorption, poses a low risk at the typical application rate and a moderate risk at the maximum application rate. Consumption of vegetation contaminated by a spill poses a low risk to small mammals for scenarios involving the maximum application rate only.
Clopyralid	May adversely affect liver and kidney weights and gastric epithelial tissue.	Clopyralid is not likely to pose a risk to terrestrial animals; however, several scenarios were evaluated where a low acute risk is posed to a variety of organisms at the typical (0.35 lb a.e./acre) and maximum (0.5 lb a.e./acre) application rates (Table 4-23 in BLM, 2007). For the typical application rate, small mammals are at risk from 100% absorption of direct spray and consumption of contaminated insects and vegetation. At the maximum application rate, insects are at risk from direct spray, large birds are at risk from the consumption of contaminated vegetation, and small birds face risk from the consumption of contaminated insects. Application of clopyralid at the maximum application rate poses a low chronic risk to large mammals and large birds consuming contaminated vegetation (BLM, 2007).
Glyphosate	May reduce food conversion efficiency leading to loss of body weight in mammals and birds. Certain surfactants used with glyphosate are much more toxic to fish than others; therefore, use of glyphosate in wetland/riparian areas requires selecting a product with proper surfactants (e.g., those used in Rodeo as opposed to Round-up). May cause histological changes in gills, kidneys, and liver of some fish.	Poses low to moderate risk to several terrestrial wildlife receptors under multiple exposure scenarios involving applications at the typical (2 lbs a.e./acre) and maximum application rates (7 lbs a.e./acre) (Table 4-23 in BLM, 2007). Direct spray of small animals and insects, assuming 100% absorption, poses a low risk at the typical application rate and a moderate risk at the maximum application rate. Consumption of vegetation contaminated by a spill poses a low risk to small mammals for scenarios involving the maximum application rate only. A large mammal consuming contaminated vegetation would face low acute risk for scenarios involving the typical application rate, moderate acute risk for scenarios involving the maximum application rate, and low chronic risk for scenarios involving the maximum application rate. A large bird consuming contaminated vegetation would face a low acute and chronic risk. Consumption of contaminated insects would pose a low risk to both small mammals and small birds if the herbicide were applied at the typical application rate. Acute risks from glyphosate exposure are low at the typical application rate under all scenarios, and no chronic risks were modelled. Exposure scenarios with the greatest risk are direct spray and acute consumption of contaminated vegetation and insects (BLM, 2007).
Imazapyr	Appears to be relatively non-toxic to terrestrial and aquatic animals.	Imazapyr does not pose substantial risks to terrestrial animal species, but low risks were predicted with several exposure scenarios, mostly involving herbicide applications at the maximum application rates: typical rate = 0.45 lb a.e./acre, maximum rate = 1.50 lb a.e./acre (BLM, 2007). The only scenario involving the typical application rate that would pose a risk was a low risk to a small bird consuming contaminated insects.
Triclopyr	Relatively non-toxic to birds. May cause developmental effects at levels that cause maternal toxicity in mammals or have adverse effect on kidney functions. Higher concentrations may cause mortality or immobility in frog tadpoles and larger doses may cause a decrease in body length and smaller	Triclopyr poses a low risk at typical application rates (0.45 lb a.e./acre) and moderate risk at maximum application rates (1.50 lb a.e./acre) to insects, mammals, and birds under the following scenarios: 100% absorption of direct spray by small mammals, 100% absorption of direct spray by insects, acute consumption of contaminated insects by small birds and mammals, and chronic consumption of onsite contaminated vegetation by large mammals and large birds (BLM, 2007). In addition, for the maximum application rate, there would be low risk associated with acute consumption of contaminated vegetation by small mammals following an accidental spill, acute consumption of contaminated small mammals by carnivorous mammals, and chronic consumption of offsite contaminated vegetation by

Table 3. General Effects of Herbicides on Wildlife Species

Herbicide	Physical Effects	Risk to Wildlife
	doses may lead to lethargic behavior in some fish.	large mammals. No risk is predicted for small mammals as a result of acute or chronic consumption of contaminated vegetation or water, or for predatory birds as a result of consumption of contaminated fish. Acute or accidental direct-spray scenarios would pose a low to moderate risk to terrestrial mammals and insects, consumption of contaminated vegetation would pose a low to moderate risk to large mammals and large birds, and consumption of contaminated insects would pose a low to moderate risk to small birds (BLM, 2007; SERA, 2011).

3.1.6 Fuel Modification and Brush Clearance

Development adjacent to wildlands is vulnerable to wildfire, and most of the North Area falls within Very High Fire Severity Zones as designated by the California Department of Forestry and Fire Protection (CAL FIRE) (CAL FIRE, 2011). By law, homeowners in vulnerable areas must conduct brush clearance around buildings to create defensible space for firefighters and to protect homes and other buildings from wildfire (CAL FIRE, 2012). However, some methods of fuel modification can have substantial effects on habitat. For example, clearing oak woodlands for fire protection adjacent to development is becoming a major impact to oak woodland resources in Los Angeles County. Oaks are less prone to ignition than many common non-native trees in the North Area, including eucalyptus, pepper trees, and some pines. Oak woodlands are also less prone to ignition than weedy herbaceous vegetation. However, brush clearance and fuel modification that removes native plants in the understory and along the chaparral-oak woodland interface has resulted in extensive type conversion from native habitats to communities dominated by flashy invasive annual species such as mustard and brome grasses. These plants outcompete natives for soil moisture, and they are easily ignited. Fuel modification strategies that maximize native species retention and minimize potential type conversion to annual invasive species are the best solution not only for healthy intact ecosystems, but also for the protection of nearby structures from wildfire (County of Los Angeles, 2011). These strategies can include thinning and pruning vegetation, mowing, and for new development, incorporating appropriate setbacks into project design. Techniques such as discing, which disturb soil and create favorable conditions for invasive annual plants as well as soil instability and erosion, should be avoided wherever possible and especially adjacent to streams or on steep slopes. As a note, discing is now prohibited in the Coastal Zone.

3.1.7 Pets and Livestock

Horses and other livestock are popular in the North Area and contribute to the rural lifestyle many people enjoy. Chickens, goats, and other species have become popular animals to provide fresh eggs and dairy products. Livestock can affect native species in many ways. Horse or animal corals located adjacent to streams and creeks can degrade water quality and spread non-native weeds from their feed or droppings. Pens and animals close to riparian areas can inhibit movement by some species. Conversely chickens and other livestock can be preyed on by coyote, bobcat, and mountain lion if pens are not adequately constructed. Similarly, owls and other raptors can prey on poultry and small animals if left unattended. Livestock and pet feed and waste strongly attract non-native pest species, such as

rats, mice, starlings, and house sparrows, which in turn affect the larger surrounding ecology. These secondary affects must always be considered when planning new development.

3.1.8 Vineyards and Agriculture Operations

Agricultural practices can result in some of the same effects to native plants and wildlife as urbanization. Farming, whether vineyards, orchards, or other practices, alters the existing land use, displaces native species, and can cause edge effects that alter habitat function in adjacent areas.

Depending on the slope and type of crop, the removal of vegetation can lead to erosion-degraded water quality in adjacent streams. Certain crops can also attract more disturbance tolerant species that forage on fruits and berries. Fencing is often used to prevent mule deer or coyotes from damaging crops or water lines, which can disrupt movement patterns for other wildlife. Pesticide and herbicide use can enter the local food chain if not applied appropriately. Weeds can also spread to adjacent natural lands if allowed to develop between vines or fruit trees, and irrigation water has the potential to deplete local ground water if wells are used.



Vineyards in the North Area

3.1.9 Equestrian, Bicycling, and Hiking Trails

Recreational activities can bring people closer to the natural resources of an area, which can foster deeper appreciation and a motivation to protect and preserve these areas. It can also expose sensitive habitats to degradation and other effects, particularly if usage levels are unregulated and uneven across the region (as is currently the case). Established recreational trails and clear signage and fencing can keep users out of the most sensitive areas; for example, trails built above the banks of a creek can minimize water quality effects. However, if trails are used after rains before they have fully dried out, they can become degraded and subject to erosion. This is especially true for mountain bike and equestrian use, but hikers can also damage wet trails.

Recreationists that do not stay on designated trails and instead create new footpaths through natural areas can damage habitat and expose new areas to human-related effects. Some of these trails are started inadvertently as hikers follow game trails or shortcuts to overlooks and other features, and who may be unaware of their effects on the environment. Other impacts may be more deliberate, such as to gain access to a climbing area or to visit a hidden stream. These “social trails” can interfere with nest sites, trample native plants and their roots, and disturb animals not accustomed to noise and people, and often result in habitat degradation from trash, graffiti, and other irresponsible acts. Rock climbing can also result in damage to rock outcrops and destruction of rare plants, such as sensitive *Dudleya* species. In addition, several species of plants and wildlife (particularly reptiles and amphibians) have

suffered population declines in part due to illegal collection, and recreational trails both authorized and unauthorized can allow people to access areas where these species are collected.

Responsible recreation that minimizes damaging effects to natural resources includes staying on authorized trails (and only riding bikes or horses on trails specifically designated for their use), rock climbing in designated areas only, and obeying the well-known adage to “Take only photographs, leave only footprints.”

3.1.10 Other Human Activities

There are a variety of human activities that degrade habitat in the North Area and in other portions of the Santa Monica Mountains. Some of these activities are related to recreation and are not intended or thought to pose a risk to native plants and wildlife. Some of these include waterplay in the many ponds and streams. People and their pets often play in the perennial creeks and drainages of the North Area and many are located in close proximity to residential communities. Building dams and ponds or diverting water can strand tadpoles or larvae of amphibians and fish or create pools favorable to exotic species. Walking in the creeks can trample wildlife and disrupt nesting birds. Hikers, cyclists, and equestrian use can inadvertently introduce or spread exotic species such as the New Zealand mud snail (*Potamopyrgus antipodarum*) or the Quagga mussel (*Dreissena bugensis*). The New Zealand mud snail is a tiny non-native gastropod that can displace native species by consuming food that is preferred by native species. Quagga mussels can completely cover a substrate and deplete food for native species from the water column. These species can be spread by boots, tires, hooves and other equipment (e.g., boats, rafts, fishing gear) that may have been in contact with areas supporting these species.

Other human activities such as illegal dumping have become more commonplace in the North Area particularly in remote areas. Piles of construction debris, cut vegetation, and household trash can be seen along stream channels and roadways. Illegal marijuana farms are known from the area and farmers often divert stream water to irrigate the illegal plants. Not only does this divert water from the creek, the marijuana farms are often fertilized, resulting in degraded water quality. Because many of them are in riparian areas these activities have a high potential to adversely affect a variety of sensitive plants and wildlife.

Homeless encampments in creeks and natural areas are often in proximity to urban or residential areas but have spread far into natural areas locally. Illegal use in these areas increases human disturbance and can often lead to degraded water quality from poorly constructed latrines and off-leash dogs. Continual human presence can also inhibit wildlife use in some areas.

4. HABITAT SENSITIVITY RANKING

The proposed Habitat Sensitivity Ranking System for the North Area includes four rankings (S1, S2, S3, and S4). The four Habitat Sensitivity Rankings were developed to highlight locations within the North Area that have the greatest potential to support the sensitive resources described in Section 2, and to inform landowners of the applicable development guidelines. Each ranking defines the sensitivity of all habitat present on a given site and provides recommendations on the allowable uses within each category. Habitat Sensitivity Rankings for the North Area include:

■ **S1 Habitat: Habitat of Limited Distribution, Particular Rarity, or Important Habitat Function**

Lands that support the rarest and most sensitive resources, often play essential roles in ecosystem function, and are worthy of the highest-level conservation. Development is highly restricted in areas with S1 habitat.

■ **S2 Habitat: Intact, but Broadly Distributed Habitat**

Lands that support intact native vegetation communities, and which may include some rare species, but are widespread in the North Area. Development may occur in areas with S2 habitat provided avoidance and minimization measures are implemented.

■ **S3 Habitat: Disturbed, Non-native, and Cleared Habitat**

Lands that support non-native and ruderal vegetation, disturbed, or cleared habitat that are expected to have lower habitat function than other natural lands. Development will be less restricted in areas with S3 habitat.

■ **S4 Habitat: Developed and Agricultural Lands**

Lands that support existing residential or commercial development, other facilities, or agricultural practices. Development is least restricted in areas with S4 habitat.

The factors that define each Habitat Sensitivity Ranking are presented in Tables 4a and 4b. Many of the factors, such as vegetation community, drainages and streams, and designated critical habitat, are available as datasets spanning the entire North Area. Therefore, a comprehensive map of the North Area was developed that identifies the distribution of each Habitat Sensitivity Ranking across the North Area (Figure 7 in Attachment 1). However, some of the factors that define the most sensitive habitats, such as the locations of sensitive species or smaller features such as rock outcrops, are not available as a comprehensive GIS dataset due to lack of surveys in a given area, changes in occurrences over time, or size (i.e., below the minimum mapping unit for the vegetation data). Consequently, Habitat Sensitivity Indicators are identified that must be considered on a site-specific basis during the project application process. The presence of Habitat Sensitivity Indicators on a site may require revision to the Habitat Sensitivity Ranking of a site as mapped. Section 4.3 presents a guide to implementing the Habitat Sensitivity Ranking system for a site during the development application process.

Table 4a. S1 Habitat Sensitivity Indicators

Scientific Name	Common Name	Status
Vegetation Communities, Landforms, and Habitat Features		
Annual Grassland		
N/A	Native grasslands (or grasslands with a significant native component) greater than 0.1 acre	G4 S3?
Riparian Communities		
<i>Baccharis salicifolia</i> Shrubland	Mule Fat Shrubland	G5 S4
<i>Platanus racemosa</i> Woodland/Forest	California Sycamore Woodland/Forest	G3 S3
<i>Salix laevigata</i> - <i>Salix lasiolepis</i> Woodland/Forest	Willow Woodland/Forest	G3 S3
N/A	Wetland Undifferentiated	No Status
Woodland Communities		
<i>Quercus agrifolia</i> Woodland/Forest	Coast Live Oak Woodland/Forest	G5 S4
<i>Quercus lobata</i> Woodland/Forest	Valley Oak Woodland/Forest	G3 S3
<i>Umbellularia californica</i> Woodland/Forest	California Bay Woodland/Forest	G4 S3
<i>Juglans californica</i> Woodland/Forest	California Walnut Woodland/Forest	G3 S3
N/A	California Walnut/Undifferentiated Tall Shrubs Shrubland	G3 S3
Other Habitat Features		
N/A	Rock Outcrop	No Status
N/A	Rock Outcrop/Herbaceous	No Status
N/A	Sand/Gravel Bar	No Status
N/A	All wetlands, lakes, ponds, seeps, vernal pools or seasonal pools, springs, ephemeral, intermittent, and perennial drainages	No Status
N/A	Natural or manmade bat roosts	No Status
VASCULAR PLANTS - Dicotyledons		
Asteraceae	Aster Family	
<i>Deinandra</i> (= <i>Hemizonia</i>) <i>minthornii</i>	Santa Susana tarplant	SR, CRPR 1B.2
<i>Ericameria arborescens</i>	Golden fleece	Locally uncommon
<i>Microseris douglasii</i> ssp. <i>tenella</i>	Short-scaled microseris	Locally uncommon
<i>Pentachaeta lyonii</i>	Lyon's pentachaeta	FE, SE, CRPR 1B.1
<i>Solidago confinis</i>	Southern goldenrod	Locally uncommon
Berberidaceae	Barberry Family	
<i>Berberis pinnata</i> ssp. <i>pinnata</i>	Coast barberry	Locally uncommon
Boraginaceae	Borage Family	
<i>Plagiobothrys collinus</i> var. <i>californicus</i>	California popcorn flower	Locally uncommon
Brassicaceae	Mustard Family	
<i>Thysanocarpus conchuliferus</i>	Santa Cruz Island fringepod	FE, CRPR 1B.2
Convolvulaceae	Morning Glory Family	
<i>Calystegia collina</i> ssp. <i>venusta</i>	South coast range morning glory	CRPR 4.3, Locally uncommon
<i>Calystegia purpurata</i> ssp. <i>purpurata</i>	Smooth western morning glory	Locally uncommon
Crassulaceae	Stonecrop Family	
<i>Dudleya blochmaniae</i> ssp. <i>blochmaniae</i>	Blochman's dudleya	CRPR 1B.1

Table 4a. S1 Habitat Sensitivity Indicators		
Scientific Name	Common Name	Status
<i>Dudleya cymosa</i> ssp. <i>agouensis</i>	Agoura Hills dudleya	FT, CRPR 1B.2
<i>Dudleya cymosa</i> ssp. <i>marcescens</i>	Marcescent dudleya	FT, SR, CRPR 1B.2
<i>Dudleya cymosa</i> ssp. <i>ovatifolia</i>	Santa Monica Mountains dudleya	FT, CRPR 1B.1
Fabaceae	Legume Family, Pea Family	
<i>Astragalus brauntonii</i>	Braunton's milk-vetch	FE, CRPR 1B.1
Orobanchaceae	Broomrape Family	
<i>Orobanche uniflora</i>	Naked broom rape	Locally uncommon
Polemoniaceae	Phlox Family	Locally uncommon
<i>Navarretia ojaiensis</i>	Ojai navarretia	CRPR 1B.1
Polygonaceae	Buckwheat Family	
<i>Chorizanthe parryi</i> var. <i>fernandina</i>	San Fernando Valley spineflower	Proposed FT, SE, CRPR 1B.1
Rosaceae	Rose Family	
<i>Horkelia cuneata</i> ssp. <i>cuneata</i>	Wedge-leaved horkelia	Locally uncommon
Saxifragaceae	Saxifrage Family	
<i>Boykinia occidentalis</i>	Western boykinia	Locally uncommon
VASCULAR PLANTS - Monocotyledons		
Alliaceae	Onion Family, Garlic Family	
<i>Allium praecox</i>	Early onion	Locally uncommon
Orchidaceae	Orchid Family	
<i>Piperia elegans</i>	Rein orchid	Locally uncommon
Ruscaceae	Butcher's Broom Family	
<i>Nolina cismontana</i>	Chaparral nolina	CRPR 1B.2
VASCULAR PLANTS - Conifers		
Cupressaceae	Cypress Family	
<i>Juniperus californica</i>	California juniper	Locally uncommon
NON-VASCULAR PLANTS - Bryophytes		
Pottiaceae	Moss Family	
<i>Tortula californica</i>	California screw moss	CRPR 1B.2
NON-VASCULAR PLANTS - Lichens		
Teloschistaceae	Lichen Family	
<i>Teloschistes chrysophthalmus</i>	Gold-eye lichen	Locally uncommon
WILDLIFE – Insects and Arachnids		
Nymphalidae	Brush-Footed Butterflies	
++ <i>Euphydryas editha quino</i>	Quino checkerspot	FE
WILDLIFE - Fish		
Salmonidae	Salmon	
<i>Oncorhynchus mykiss irideus</i>	Steelhead - southern California DPS	FE
WILDLIFE - Amphibians		
Pelobatidae	Spadefoot Toads and Relatives	
<i>Spea hammondi</i>	Western spadefoot	CSSC
Ranidae	True Frogs	
<i>Rana draytonii</i>	California red-legged frog	FT, CSSC

Table 4a. S1 Habitat Sensitivity Indicators		
Scientific Name	Common Name	Status
Salamandridae	Newts	
<i>Taricha torosa torosa</i>	Coast Range newt	CSSC
WILDLIFE - Reptiles		
Colubridae	Colubrid Snakes	
<i>Thamnophis hammondi</i>	Two-striped gartersnake	CSSC
♦ <i>Thamnophis sirtalis</i>	California red-sided garter snake	CSSC
Emydidae	Box and Basking Turtles	
<i>Actinemys pallida</i>	Southern western pond turtle	CSSC
WILDLIFE - Birds		
Accipitridae	Kites, Hawks, Eagles, and Allies	
<i>Aquila chrysaetos</i>	Golden eagle	FP, WL, BCC
<i>Circus cyaneus</i>	Northern Harrier	CSSC
<i>Elanus leucurus</i>	White-tailed kite	FP
Cathartidae	New World Vultures	
* <i>Cathartes aura</i>	Turkey vulture	Locally uncommon
Emberizidae	New World Sparrows and Allies	
<i>Ammodramus savannarum</i>	Grasshopper sparrow	CSSC
Falconidae	Falcons and Caracaras	
* <i>Falco peregrinus anatum</i>	American peregrine falcon	FP, BCC
Icteridae	New World Blackbirds	
<i>Agelaius tricolor</i>	Tricolored blackbird	Candidate SE , CSSC, BCC
* <i>Sturnella neglecta</i>	Western meadowlark	Locally uncommon
Odontophoridae	New World Quails	
<i>Oreortyx pictus</i>	Mountain quail	Locally uncommon
Polioptilidae	Gnatcatchers	
+ <i>Polioptila californica</i>	Coastal California gnatcatcher	FT , CSSC
Strigidae	True Owls	
<i>Asio otus</i>	Long-eared owl	CSSC
♦ ** <i>Athene cunicularia</i>	Burrowing owl	CSSC, BCC
Tyrannidae	Tyrant Flycatchers	
+ <i>Empidonax traillii extimus</i>	Southwestern willow flycatcher	FE, SE
Vireonidae	Vireos	
<i>Vireo bellii pusillus</i>	Least Bell's vireo	FE, SE
WILDLIFE - Mammals		
Mustelidae	Weasels	
<i>Taxidea taxus</i>	American badger	CSSC
Procyonidae	Raccoons and Relatives	
<i>Bassariscus astutus</i>	Ringtail	CFP

Table 4a. S1 Habitat Sensitivity Indicators

Scientific Name	Common Name	Status
Notes: + Known from surrounding areas, but few or no records/nesting records in North Area ++ No known recent records in or near North Area * Typically protected only when nesting ** Wintering or nesting burrows are protected # Roost trees ♦ Considered extirpated from North Area		
Federal Status: FE = Federally Endangered FT = Federally Threatened BCC = USFWS Bird of Conservation Concern State Status: SE = State Endangered ST = State Threatened SR = State Rare CST = Candidate for listing as State Threatened CFP = California Fully Protected SA = CDFW Special Animal WL = CDFW Watch List CSSC = California Species of Special Concern		
NatureServe Conservation Status: Conservation status ranks are based on a one to five scale, ranging from critically imperiled (G1) to demonstrably secure (G5). Status is assessed and documented at two distinct geographic scales-global (G) and state/province (S). California Rare Plant Rank Status: CRPR 1A – Presumed extinct in California CRPR 1B – Rare or endangered in California and elsewhere CRPR 2 – Rare or endangered in California, more common elsewhere CRPR 3 – More information needed CRPR 4 – Limited distribution (Watch List) For each CRPR Ranking, the following sub-categories apply: .1 = Seriously endangered in California (over 80 percent of occurrences threatened/high degree and immediacy of threat) .2 = Fairly endangered in California (20 to 80 percent occurrences threatened) .3 = Not very endangered in California (less than 20 percent of occurrences threatened or no current threats known)		

Table 4b. S2 Habitat Sensitivity Indicators

Scientific Name	Common Name	Status
Vegetation Communities, Landforms, and Habitat Features		
Annual Grassland		
N/A	California Annual Grassland/Herbaceous Alliance	No Status
Chaparral Communities		
<i>Adenostoma fasciculatum</i> - <i>Adenostoma sparsifolium</i> Shrubland Alliance	Chamise-Redshank Shrubland Alliance	G4 S4
<i>Adenostoma fasciculatum</i> - <i>Arctostaphylos glandulosa</i> Shrubland Alliance	Chamise-Eastwood Manzanita Shrubland Alliance	G5 S5
<i>Adenostoma fasciculatum</i> - <i>Ceanothus crassifolius</i> Shrubland Alliance	Chamise-Hoary Leaf Ceanothus Shrubland Alliance	G5 S5
<i>Adenostoma fasciculatum</i> - <i>Ceanothus cuneatus</i> Shrubland Alliance	Chamise-Wedge Leaf Ceanothus Shrubland Alliance	G5 S5
<i>Adenostoma fasciculatum</i> - <i>Salvia mellifera</i> Shrubland Alliance	Chamise-Black Sage Shrubland Alliance	G5 S5
<i>Adenostoma fasciculatum</i> Shrubland Alliance	Chamise Shrubland Alliance	G5 S5
<i>Adenostoma sparsifolium</i> Shrubland	Redshank Shrubland	G4 S4
<i>Ceanothus crassifolius</i> Shrubland Alliance	Hoary Leaf Ceanothus Shrubland Alliance	G4 S4
<i>Ceanothus cuneatus</i> and <i>Adenostoma fasciculatum</i> - <i>Ceanothus cuneatus</i> Shrubland Superalliance	Wedge Leaf Ceanothus and Chamise-Wedge Leaf Ceanothus Shrubland Superalliance	G4 S4/G5 S5
<i>Ceanothus cuneatus</i> Shrubland Alliance	Wedge Leaf Ceanothus Shrubland Alliance	G4 S4

Table 4b. S2 Habitat Sensitivity Indicators

Scientific Name	Common Name	Status
<i>Ceanothus megacarpus</i> Shrubland Alliance	Big Pod Ceanothus Shrubland Alliance	G4 S4
<i>Ceanothus oliganthus</i> Shrubland Alliance	Hairy Leaf Ceanothus Shrubland	G3 S3
<i>Ceanothus spinosus</i> Shrubland Alliance	Greenbark Ceanothus Shrubland	G4 S4
<i>Ceanothus</i> spp.- <i>Adenostoma fasciculatum</i> Shrubland Mapping Unit	Ceanothus-Chamise Shrubland Mapping Unit	G4 S4
<i>Ceanothus</i> spp. and <i>Cercocarpus betuloides</i> Shrubland Superalliance	Ceanothus and Birch Leaf Mountain Mahogany Shrubland Superalliance	G5 S4
<i>Cercocarpus betuloides</i> Shrubland Superalliance	Birch Leaf Mountain Mahogany Shrubland Superalliance	G5 S4
<i>Heteromeles arbutifolia</i> Shrubland	Toyon Shrubland	G5 S3
<i>Prunus ilicifolia</i> Shrubland	Holly Leaf Cherry Shrubland	G3 S3
<i>Quercus berberidifolia</i> - <i>Adenostoma fasciculatum</i> Shrubland Alliance	Scrub Oak-Chamise Shrubland Alliance	G4 S4
<i>Quercus berberidifolia</i> - <i>Cercocarpus betuloides</i> Shrubland Alliance	Scrub Oak-Birch Leaf Mountain Mahogany Shrubland Alliance	G4 S4
<i>Quercus berberidifolia</i> Shrubland Alliance	Scrub Oak Shrubland Alliance	G4 S4
<i>Rhus ovata</i> Shrubland Alliance	Sugar Bush Shrubland Alliance	G4 S4
Coastal Sage Scrub Communities		
<i>Artemisia californica</i> - <i>Eriogonum fasciculatum</i> Shrubland Alliance	California Sagebrush-California Buckwheat Shrubland Alliance	G4 S4
<i>Artemisia californica</i> Shrubland Alliance	California Sagebrush Shrubland Alliance	G5 S5
<i>Baccharis pilularis</i> Shrubland Alliance	Coyote Brush Shrubland Alliance	G5 S5
<i>Encelia californica</i> Shrubland	California Encelia Shrubland	G4 S3
<i>Eriogonum cinereum</i> Shrubland	Ashy Buckwheat Shrubland	G3 S3
<i>Eriogonum fasciculatum</i> - <i>Salvia apiana</i> Shrubland	California Buckwheat-White Sage Shrubland	G4 S4
<i>Eriogonum fasciculatum</i> Shrubland Alliance	California Buckwheat Shrubland Alliance	G5 S5
<i>Hazardia squarrosa</i> Shrubland	Sawtooth Goldenbush Shrubland	G3 S3
<i>Leymus condensatus</i> Herbaceous Alliance	Giant Wild Rye Herbaceous Alliance	G3 S3
<i>Lotus scoparius</i> Shrubland Alliance	Deerweed Shrubland Alliance	G5 S5
<i>Malacothamnus fasciculatus</i> Shrubland Alliance	Bush Mallow Shrubland Alliance	G4 S4
<i>Malosma laurina</i> Shrubland Alliance	Laurel Sumac Shrubland Alliance	G4 S4
<i>Mimulus aurantiacus</i> Shrubland	Bush Monkey Flower Shrubland	G3 S3
<i>Salvia leucophylla</i> Shrubland Alliance	Purple Sage Shrubland Alliance	G4 S4
<i>Salvia mellifera</i> - <i>Artemisia californica</i> Shrubland Alliance	Black Sage-California Sagebrush Shrubland Alliance	G4 S4
<i>Salvia mellifera</i> Shrubland Alliance	Black Sage Shrubland Alliance	G4 S4
<i>Toxicodendron diversilobum</i> Shrubland Alliance	Poison Oak Shrubland Alliance	G4 S4
Other Habitat Features		
N/A	Individual large bird nesting or roost trees	No Status
VASCULAR PLANTS - Dicotyledons		
Apiaceae	Parsley Family	
<i>Sanicula bipinnata</i>	Poison sanicle	Locally uncommon

Table 4b. S2 Habitat Sensitivity Indicators		
Scientific Name	Common Name	Status
<i>Yabea microcarpa</i>	California hedge parsley	Locally uncommon
Apocynaceae	Dogbane Family	
<i>Apocynum cannabinum</i>	Indian hemp	Locally uncommon
Asteraceae	Aster Family	
<i>Baccharis malibuensis</i>	Malibu baccharis	CRPR 1B.1
<i>Baccharis plummerae</i>	Plummer's baccharis	CRPR 4.3
<i>Bidens laevis</i>	Bur marigold	Locally uncommon
<i>Chaenactis glabriuscula</i> var. <i>lanosa</i>	Pincushion flower	Locally uncommon
<i>Ericameria parishii</i>	Parish's rabbitbrush	Locally uncommon
<i>Helenium puberulum</i>	Sneezeweed	Locally uncommon
<i>Heterotheca sessiliflora</i> ssp. <i>fastigiata</i>	Erect goldenaster	Locally uncommon
<i>Hieracium argutum</i>	Southern hawkweed	Locally uncommon
<i>Iva axillaris</i> ssp. <i>robustior</i>	Povertyweed	Locally uncommon
<i>Lasthenia coronaria</i>	Royal goldfields	Locally uncommon
<i>Lasthenia glabrata</i> ssp. <i>coulteri</i>	Coulter's goldfields	CRPR 1B.1
<i>Layia platyglossa</i>	Tidy tips	Locally uncommon
<i>Leptosyne bigelovii</i> (<i>Coreopsis bigelovii</i>)	Bigelow coreopsis	Locally uncommon
<i>Lessingia glandulifera</i>	Valley lessingia	Locally uncommon
<i>Malacothrix coulteri</i>	Snake's head	Locally uncommon
<i>Monolopia lanceolata</i>	Monolopia	Locally uncommon
<i>Packera breweri</i> (<i>Senecio breweri</i>)	Brewer's ragwort	Locally uncommon
<i>Pseudognaphalium stramineum</i> (<i>Gnaphalium stramineum</i>)	Cottonbatting plant	Locally uncommon
<i>Senecio aphanactis</i>	California groundsel	CRPR 2B.2
Boraginaceae	Borage Family	
<i>Amsinckia menziesii</i> var. <i>menziesii</i>	Small-flowered fiddleneck	Locally uncommon
<i>Pectocarya linearis</i> ssp. <i>ferocula</i>	Slender comb seed	Locally uncommon
<i>Phacelia brachyloba</i>	Short-lobed phacelia	Locally uncommon
<i>Phacelia ramosissima</i> var. <i>austrolitoralis</i>	South coast branching phacelia	CRPR 3.2

Table 4b. S2 Habitat Sensitivity Indicators		
Scientific Name	Common Name	Status
<i>Plagiobothrys collinus</i> var. <i>fulvescens</i>	Rusty haired popcorn flower	Locally uncommon
<i>Plagiobothrys tenellus</i>	Slender popcorn flower	Locally uncommon
Brassicaceae	Mustard Family	
<i>Caulanthus coulteri</i>	Coulter's jewel flower	Locally uncommon
<i>Caulanthus heterophyllus</i> var. <i>heterophyllus</i> or <i>Caulanthus heterophyllus</i> var. <i>pseudosimulans</i>	Slender pod jewelflower	Locally uncommon
<i>Draba cuneifolia</i>	Wedge leaved draba	Locally uncommon
<i>Lepidium latipes</i>	Dwarf pepper grass	Locally uncommon
<i>Rorippa curvisiliqua</i>	Curvepod yellow cress	Locally uncommon
<i>Stanleya pinnata</i>	Prince's plume	Locally uncommon
Campanulaceae	Bellflower Family	
<i>Githopsis diffusa</i> ssp. <i>diffusa</i>	Southern blue cup	Locally uncommon
<i>Heterocodon rariflorum</i>	Rareflower heterocodon	Locally uncommon
<i>Lobelia dunnii</i> var. <i>serrata</i>	Dunn's lobelia	Locally uncommon
<i>Nemacladus ramosissimus</i>	Nuttall's nemacladus	Locally uncommon
<i>Triodanis biflora</i>	Venus looking glass	Locally uncommon
Caprifoliaceae	Honeysuckle Family	
<i>Lonicera hispidula</i>	Pink honeysuckle	Locally uncommon
Caryophyllaceae	Pink Family	
<i>Loeflingia squarrosa</i>	Spreading pygmyleaf	Locally uncommon
<i>Silene verecunda</i>	Dolores campion	Locally uncommon
Chenopodiaceae	Chenopod Family	
<i>Atriplex serenana</i> var. <i> davidsonii</i>	Davidson's saltscale	CRPR 1B.2
Convolvulaceae	Morning Glory Family	
<i>Convolvulus simulans</i>	Small flowered morning glory	CRPR 4.2
<i>Dichondra occidentalis</i>	Western dichondra	CRPR 4.2
Crassulaceae	Stonecrop Family	
<i>Dudleya multicaulis</i>	Many-stemmed dudleya	CRPR 1B.2
Ericaceae	Heath Family	
<i>Comarostaphylis diversifolia</i> ssp. <i>planifolia</i>	Summer holly	Locally uncommon

Table 4b. S2 Habitat Sensitivity Indicators		
Scientific Name	Common Name	Status
Fabaceae	Legume Family, Pea Family	
<i>Acmispon micranthus</i> (<i>Lotus hamatus</i>)	Small-flowered lotus	Locally uncommon
<i>Amorpha californica</i>	False indigo	Locally uncommon
<i>Glycyrrhiza lepidota</i>	American licorice	Locally uncommon
<i>Pickeringia montana</i> var. <i>montana</i>	Chaparral pea	CRPR 4.3
<i>Rupertia physodes</i>	Common rupertia, California tea	Locally uncommon
<i>Trifolium depauperatum</i> var. <i>truncatum</i>	Dwarf sack clover	Locally uncommon
<i>Vicia hassei</i>	Hasse's vetch	Locally uncommon
<i>Vicia ludoviciana</i>	Louisiana vetch	Locally uncommon
Fagaceae	Oak Family	
<i>Quercus wislizeni</i> var. <i>frutescens</i>	Bush interior live oak	Locally uncommon
Gentianaceae	Gentian Family	
<i>Zeltnera exaltata</i> (<i>Centaurium exaltatum</i>)	Canchaagua	Locally uncommon
Geraniaceae	Geranium Family	
<i>California macrophylla</i>	Round-leaved filaree	CRPR 1B.2
Lamiaceae	Mint Family	
<i>Clinopodium douglasii</i> (<i>Satureja douglasii</i>)	Yerba buena	Locally uncommon
<i>Lepechinia fragrans</i>	Fragrant pitcher sage	CRPR 4.2
<i>Monardella breweri</i> ssp. <i>lanceolata</i> (<i>Monardella lanceolata</i>)	Mustang mint	Locally uncommon
<i>Monardella hypoleuca</i> ssp. <i>hypoleuca</i>	White-veined monardella	CRPR 1B.3
Montiaceae	Miner's Lettuce Family	
<i>Calandrinia breweri</i>	Brewer's calandrinia	CRPR 4.2
<i>Claytonia exigua</i> ssp. <i>exigua</i>	Serpentine spring beauty	Locally uncommon
<i>Lewisia rediviva</i>	Bitterroot	Locally uncommon
Onagraceae	Evening Primrose Family	
<i>Epilobium campestre</i> (<i>Epilobium pygmaeum</i>)	Smooth boisduvalia	Locally uncommon
Orobanchaceae	Broomrape Family	
<i>Orobanche californica</i>	California broomrape	Locally uncommon

Table 4b. S2 Habitat Sensitivity Indicators		
Scientific Name	Common Name	Status
<i>Orobancha fasciculata</i>	Clustered broom rape	Locally uncommon
Papaveraceae	Poppy Family	
<i>Meconella denticulata</i>	Small flowered meconella	Locally uncommon
<i>Papaver heterophyllum</i> (<i>Stylomecon heterophylla</i>)	Wind poppy	Locally uncommon
<i>Platystemon californicus</i>	Cream cups	Locally uncommon
Phrymaceae	Lopseed Family	
<i>Mimulus floribundus</i>	Many flowered monkey flower	Locally uncommon
<i>Mimulus pilosus</i>	Snouted monkey flower	Locally uncommon
Plantaginaceae	Plantain Family	
<i>Collinsia parryi</i>	Parry's collinsia	Locally uncommon
Polemoniaceae	Phlox Family	
<i>Eriastrum densifolium</i> ssp. <i>elongatum</i>	Perennial wool star	Locally uncommon
<i>Eriastrum filifolium</i>	Lavender eriastrum	Locally uncommon
<i>Leptosiphon ciliatus</i>	Whiskerbrush	Locally uncommon
<i>Navarretia atractyloides</i>	Holly leaf navarretia	Locally uncommon
Polygalaceae	Milkwort Family	
<i>Polygala cornuta</i> var. <i>fishiae</i>	Fish's milkwort	CRPR 4.3
Polygonaceae	Buckwheat Family	
<i>Chorizanthe parryi</i> var. <i>parryi</i>	Parry's spineflower	CRPR 1B.1, Locally uncommon
<i>Eriogonum angulosum</i>	Angle-stem wild buckwheat	Locally uncommon
<i>Eriogonum cithariforme</i> var. <i>agninum</i>	Santa Ynez wild buckwheat	Locally uncommon
<i>Eriogonum wrightii</i> var. <i>membranaceum</i>	Wright's buckwheat	Locally uncommon
<i>Lastarriaea coriacea</i>	Leather spineflower	Locally uncommon
Ranunculaceae	Buttercup Family	
<i>Delphinium parryi</i> ssp. <i>maritimum</i>	Seaside larkspur	Locally uncommon
Rhamnaceae	Buckthorn Family	
<i>Ceanothus tomentosus</i> var. <i>olivaceus</i>	Woolly leaf ceanothus	Locally uncommon
Rosaceae	Rose Family	
<i>Holodiscus discolor</i>	Oceanspray	Locally uncommon

Table 4b. S2 Habitat Sensitivity Indicators		
Scientific Name	Common Name	Status
<i>Horkelia cuneata</i> var. <i>puberula</i>	Mesa horkelia	CRPR 1B.1
Sapindaceae	Soapberry Family	
<i>Acer macrophyllum</i>	Bigleaf maple	Locally uncommon
Saxifragaceae	Saxifrage Family	
<i>Boykinia rotundifolia</i>	Round leaved boykinia	Locally uncommon
Solanaceae	Nightshade Family	
<i>Nicotiana quadrivalvis</i>	Indian tobacco	Locally uncommon
Theophrastaceae	Threophrasta Family	
<i>Samolus parviflorus</i>	Water pimpernel	Locally uncommon
VASCULAR PLANTS - Monocotyledons		
Cyperaceae	Sedge Family	
<i>Carex barbarae</i>	Valley sedge	Locally uncommon
<i>Carex globosa</i>	Round fruit sedge	Locally uncommon
<i>Carex praegracilis</i>	Field sedge	Locally uncommon
<i>Carex spissa</i>	San Diego sedge	Locally uncommon
<i>Carex triquetra</i>	Triangular fruit sedge	Locally uncommon
<i>Isolepis cernua</i> (<i>Scirpus cernuus</i>)	Low bulrush	Locally uncommon
<i>Scirpus microcarpus</i>	Mountain bog bulrush	Locally uncommon
Juncaceae	Rush Family	
<i>Juncus patens</i> or <i>Juncus textilis</i>	Basket rush	Locally uncommon
Liliaceae	Lily Family	
<i>Calochortus albus</i>	White fairy lantern	Locally uncommon
<i>Calochortus catalinae</i>	Catalina mariposa lily	CRPR 4.2
<i>Calochortus clavatus</i> var. <i>gracilis</i>	Slender mariposa-lily	CRPR 1B.2
<i>Calochortus plummerae</i>	Plummer's mariposa-lily	CRPR 4.2
<i>Calochortus splendens</i>	Splendid mariposa lily	Locally uncommon
<i>Calochortus venustus</i>	Butterfly mariposa lily	Locally uncommon
<i>Lilium humboldtii</i> ssp. <i>ocellatum</i>	Ocellated humboldt lily	CRPR 4.2
Orchidaceae	Orchid Family	
<i>Piperia unalascensis</i>	Alaska piperia	Locally uncommon

Table 4b. S2 Habitat Sensitivity Indicators		
Scientific Name	Common Name	Status
Poaceae	Grass Family	
<i>Festuca octoflora</i> (<i>Vulpia octoflora</i>)	Sixweeks grass	Locally uncommon
<i>Hordeum depressum</i>	Alkali barley	Locally uncommon
<i>Koeleria macrantha</i>	June grass	Locally uncommon
<i>Leymus triticoides</i>	Beardless wild rye	Locally uncommon
<i>Melica californica</i>	California melicgrass	Locally uncommon
<i>Muhlenbergia rigens</i>	Deergrass	Locally uncommon
Themidaceae	Brodiaea Family	
<i>Brodiaea terrestris</i> ssp. <i>kernensis</i>	Kern dwarf brodiaea	Locally uncommon
VASCULAR PLANTS - Ferns		
Blechnaceae	Chain Fern Family	
<i>Woodwardia fimbriata</i>	Western chain fern	Locally uncommon
Pteridaceae	Maidenhair Fern Family	
<i>Cheilanthes newberryi</i>	Newberry's lip fern	Locally uncommon
<i>Notholeana californica</i>	California cloak fern	Locally uncommon
Thelypteridaceae	Marsh Fern Family	
<i>Thelypteris puberula</i> var. <i>sonorensis</i>	Sonoran maiden fern	CRPR 2B.2
WILDLIFE – Insects and Arachnids		
Acrididae	Short-Horned Grasshoppers	
<i>Trimerotropis occidentiloides</i>	Santa Monica grasshopper	SA
Apidae	Cuckoo, Carpenter, Digger, Bumble, and Honey Bees	
<i>Bombus crotchii</i>	Crotch bumble bee	SA
Haplotrematidae	Predatory Land Snails	
<i>Haplotrema caelatum</i>	Slotted lancetooth snail	Locally uncommon
Helminthoglyptidae	Air-Breathing Land Snails	
<i>Helminthoglypta tudiculata</i>	Southern California shoulderband snail	Locally uncommon
<i>Helminthoglypta willeti</i>	Matilija shoulderband snail	Locally uncommon
Lycaenidae	Gossamer-Winged Butterflies	
<i>Lycaena arota</i>	Cloudy tailed-copper	Locally uncommon

Table 4b. S2 Habitat Sensitivity Indicators		
Scientific Name	Common Name	Status
<i>Lycaena gorgon</i>	Gorgon copper	Locally uncommon
<i>Satyrrium auretorum fumosum</i>	Santa Monica Mountains hairstreak	Locally uncommon
Nymphalidae	Brush-Footed Butterflies	
# <i>Danaus plexippus</i> pop. 1	Monarch - California overwintering population	SA
<i>Polygonia satyrus</i>	Satyr anglewing	Locally uncommon
<i>Speyeria callippe comstocki</i>	Comstock's fritillary	Locally uncommon
Tettigoniidae	Bush Crickets	
<i>Aglaothorax longipennis</i>	Santa Monica shieldback katydid	SA
Timematodea	Stick Insects	
<i>Timema monikensis</i>	Santa Monica Mountains timema	Locally uncommon
Zoropsidae	False Wolf Spiders	
<i>Socalchemmis gertschi</i>	Gertsch's socalchemmis spider	SA
WILDLIFE - Fish		
Cyprinidae	Carps, True Minnows, and Relatives	
<i>Gila orcuttii</i>	Arroyo chub	CSSC
WILDLIFE - Amphibians		
Hylidae	Treefrogs	
<i>Pseudacris cadaverina</i>	California treefrog	Locally uncommon
WILDLIFE - Reptiles		
Anniellidae	North American Legless Lizards	
<i>Anniella stebbinsi</i> (formerly <i>A. pulchra pulchra</i>)	Southern California legless lizard	CSSC
Boidae	Boas	
<i>Lichanura trivirgata</i>	Rosy boa	Locally uncommon
Colubridae	Colubrid Snakes	
<i>Arizona elegans occidentalis</i>	California glossy snake	CSSC
<i>Coluber constrictor</i>	Yellow-bellied racer	Locally uncommon
<i>Diadophis punctatus modestus</i>	San Bernardino ringneck snake	SA
<i>Lampropeltis zonata</i>	San Diego mountain kingsnake	WL
<i>Rhinocheilus lecontei</i>	Long-nosed snake	Locally uncommon

Table 4b. S2 Habitat Sensitivity Indicators		
Scientific Name	Common Name	Status
<i>Salvadora hexalepis virgulata</i>	Coast patch-nosed snake	CSSC
Phrynosomatidae	Spiny Lizards	
<i>Phrynosoma blainvillii</i>	Coast horned lizard	CSSC
Teiidae	Whiptails and Racerunners	
<i>Aspidoscelis tigris stejnegeri</i>	Coastal whiptail	CSSC
WILDLIFE - Birds		
Alaudidae	Larks	
<i>Eremophila alpestris</i>	California horned lark	WL, CSB, Locally uncommon
Alcedinidae	Kingfishers	
* <i>Megasceryle alcyon</i>	Belted kingfisher	CSB, Locally uncommon
Cuculidae	Cuckoos	
<i>Geococcyx californianus</i>	Greater roadrunner	CSB, Locally uncommon
Emberizidae	Sparrows, Buntings, Warblers, and Relatives	
<i>Aimophila ruficeps canescens</i>	Southern California rufous-crowned sparrow	WL, CWL
<i>Artemisiospiza belli belli</i>	Bell's sage sparrow	WL, BCC, CWL, Locally uncommon
Parulidae	New World Warblers	
<i>Icteria virens</i>	Yellow-breasted chat	CSSC, CSB
<i>Setophaga petechia</i>	Yellow warbler	CSSC, CSB
Picidae	Woodpeckers	
<i>Picoides villosus</i>	Hairy woodpecker	CSB, Locally uncommon
Troglodytidae	Wrens	
<i>Cistothorus palustris clarkae</i>	Clark's marsh wren	CSSC, CSB, Locally uncommon
Turdidae	Thrushes	
<i>Catharus ustulatus</i>	Swainson's thrush	CSB, Locally uncommon
WILDLIFE - Mammals		
Leporidae	Hares and Rabbits	

Table 4b. S2 Habitat Sensitivity Indicators		
Scientific Name	Common Name	Status
♦ <i>Lepus californicus bennettii</i>	San Diego black-tailed jackrabbit	Locally uncommon
Mephitidae	Skunks	
<i>Spilogale gracilis</i>	Spotted skunk	Locally uncommon
Muridae	Rats, Mice, and Relatives	
<i>Neotoma lepida intermedia</i>	San Diego desert woodrat	CSSC
Notes: + Known from surrounding areas, but few or no records/nesting records in North Area ++ No known recent records in or near North Area * Typically protected only when nesting ** Wintering or nesting burrows are protected # Roost trees ♦ Considered extirpated from North Area		
Federal Status: FE = Federally Endangered FT = Federally Threatened BCC = USFWS Bird of Conservation Concern State Status: SE = State Endangered ST = State Threatened SR = State Rare CST = Candidate for listing as State Threatened CFP = California Fully Protected SA = CDFW Special Animal WL = CDFW Watch List CSSC = California Species of Special Concern Local Rankings CSB = Sensitive Bird in Los Angeles County (Allen et al., 2009) CWL = Los Angeles County Bird Watch List (Allen et al., 2009) Locally Uncommon		NatureServe Conservation Status: Conservation status ranks are based on a one to five scale, ranging from critically imperiled (G1) to demonstrably secure (G5). Status is assessed and documented at two distinct geographic scales - global (G) and state/province (S). California Rare Plant Rank Status: CRPR 1A – Presumed extinct in California CRPR 1B – Rare or endangered in California and elsewhere CRPR 2 – Rare or endangered in California, more common elsewhere CRPR 3 – More information needed CRPR 4 – Limited distribution (Watch List) For each CRPR Ranking, the following sub-categories apply: .1 = Seriously endangered in California (over 80 percent of occurrences threatened/high degree and immediacy of threat) .2 = Fairly endangered in California (20 to 80 percent occurrences threatened) .3 = Not very endangered in California (less than 20 percent of occurrences threatened or no current threats known)

4.1 Development of the Habitat Sensitivity Ranking System

There are several tools available to the land manager to assess the ecological value of habitat for plants and wildlife. These range from simple biological evaluations conducted by experts who provide their best professional opinion to complex quantitative habitat models that provide habitat suitability indices or values. Wildlife-habitat relationships and habitat suitability indices have been statistically modeled for a variety of taxa (Blenden et al., 1986; Murphy and Wilcox, 1986) especially birds (reviewed in Verner, Morrison, and Ralph, 1986; Morrison, Margot, and Mannan, 1992), to predict the occurrence and abundance of species within a habitat, as well as to rank appropriate habitat for a species.

The development of a habitat sensitivity ranking system or habitat suitability indices requires the collection or measurement of a broad suite of wildlife and vegetation data. This can include species diversity, the distribution and abundance of various organisms, their temporal use of the selected habitat of an area, and the species' tolerance to various factors such as disturbance or habitat fragmentation. The collected data may be viewed independently or evaluated through an ecological model that is intended to provide the user with some form of ranking system. As with any system, access to accurate data are essential to support planning efforts and assess habitat sensitivity.

For the North Area, a system was developed to support land use decision making by collecting, reviewing, and analyzing biological and ecological data. Section 2 provides an overview of the data available for the North Area that was considered in the development of this system. Section 3 summarizes some of the human-wildland interactions that provide context for the consideration of habitat sensitivity with respect to development. The best available data were evaluated and mapped to provide the foundation for the habitat sensitivity ranking system in the North Area. This approach is similar to gap analysis (Scott et al., 1993) in that maps of vegetation and species-affinity data have been used as a basis for identifying important habitats for long-term planning efforts.

The system is useful because it allows a planner, developer, or private citizen the ability to view a map and obtain a quick overview of the potential natural resources or development standards in each area. While this information is "coarse," it facilitates the planning process and highlights areas that have development restrictions or may require increased scrutiny during the development process. Similarly, the data highlights areas that would require project-specific field surveys, data collection, and reporting and may require resource avoidance or minimization measures. The maps also highlight areas of lower biological sensitivity where development may be more appropriate.

Habitat Sensitivity Rankings and Habitat Sensitivity Indicators for the North Area were determined by a step-wise process that included a comprehensive review of vegetation data, species distribution, ecological data, and land use designations. Local experts and regulatory staff were interviewed, and extensive field surveys were conducted to ground truth or field verify the information. The five steps used to develop and map the Habitat Sensitivity Rankings are described below.

Step 1: Compile Vegetation and Landform Classification and Mapping

Aspen utilized vegetation and landform data from the National Park Service (NPS) as a base layer for assessing Habitat Sensitivity. From 2001 to 2005, the

Existing vegetation data was augmented for use in the Habitat Sensitivity Ranking System

- Vegetation data at the alliance level was projected over the North Area
- Private and public land use boundaries were projected to aid in navigation and assessment
- Field surveys were conducted across the entire North Area where legal access was available to ground-truth the data and identify data gaps or land use changes
- Maps were updated and revised based on field investigations and review of 2014 aerial imagery
- Vegetation data was classified by alliance for private/public lands

NPS and USGS partnered to develop a comprehensive vegetation map of the entire Santa Monica Mountains National Recreation Area and surrounding contiguous areas of the Santa Monica Mountains. Because the NPS vegetation mapping data covers nearly all of the North Area and surrounding area, it represents the best available data for this assessment. NPS provided the most current version of the data in GIS during the preparation of this report, and it forms the basis for the habitat analyses provided herein.

The existing data were reviewed and projected over the North Area. Vegetation and landform data were mapped and focused field investigations were conducted to ground-truth the information received from the NPS. During the field investigations, any land use changes were identified and the maps were updated to reflect any changes. For example, in locations where land use changes were observed, the maps were revised to show current land uses (e.g. vineyards, fire breaks, and residential development on previously vegetated areas). In addition, a small portion of the North Area near Hidden Hills was not included in the NPS data and has been added.

Assessing Vegetation

The vegetation of the Santa Monica Mountains is extremely varied but can be categorized broadly as a mosaic of chaparral, coastal sage scrub, oak woodlands, riparian woodlands, and grasslands. Each of these communities may be divided into “alliances”, or subgroupings defined by the dominant or co-dominant species present. Thus, multiple different alliances can fall into a general category. For example, in the North Area, coastal scrub communities consist of many different alliance-level associations. These alliances exhibit the same general structure and often provide similar ecological attributes, but, vary somewhat in the species composition. Often these subtle differences in species composition reflect different levels of moisture availability and sun exposure, whether the area has experienced a recent or historic fire, soil differences, and different levels of disturbance. Some of these alliances are considered rare by the State or are extremely uncommon in the North Area. Once mapped and field verified, each of the vegetation communities were assigned a preliminary Habitat Sensitivity rank of S1, S2, S3, or S4 (see Figure 7 in Attachment 1).

Step 2: Review Existing Literature and Available Databases

A wealth of data exists on the biological resources in the North Area and the greater Santa Monica Mountains. The information used to evaluate and determine sensitivity was compiled from a wide variety of sources including federal, State, and County planning documents, supporting technical studies, various database records, interviews with local experts, and other biological studies conducted throughout the North Area. Some of the data considered included:

- Los Angeles County General Plan 2035, the Santa Monica Mountains Significant Ecological Area (SEA) Ordinance supporting documentation (2015); Santa Monica Mountains Local Coastal Program and technical appendices (2014); Los Angeles County Oak Woodlands Conservation Management Plan (2014); County ordinances related to biological resources (various dates); Santa Monica Mountains North Area Community Standards District; and Santa Monica Mountains North Area Plan (2000).

- Regional planning documents such as the Rim of the Valley Corridor Draft Special Resources Study and Environmental Assessment (2015), Santa Monica Mountains National Recreation Area General Management Plan (2002), Santa Monica Mountains Comprehensive Plan (1979), and Ventura Freeway Corridor Areawide Plan (2000).
- Lists of special-status species maintained by the California Department of Fish and Wildlife (CDFW, formerly CDFG): State and Federally Listed Endangered and Threatened Animals of California (CDFW, 2017b); Special Animals List (CDFW, 2017c); and Special Vascular Plants, Bryophytes, and Lichens List (CDFW, 2017d).
- Databases including the California Natural Diversity Database (CNDDDB), CalFlora, California Consortium of Herbaria (CCH), CNPS Rare Plant Inventory, eBird, iNaturalist, and VertNet.
- Unpublished data from the NPS, including species lists, wildlife movement data, general and focused survey results, vegetation mapping, and lists of species considered common in the State but appear to be or rare or uncommon in the North Area.
- Published literature on a variety of local resources and issues, including wildlife movement, habitat fragmentation and genetic diversity, and species diversity and distribution.
- Federal publications on the status of listed species in and near the North Area: California red-legged frog, southwestern willow flycatcher, least Bell's vireo, California gnatcatcher, Lyon's pentachaeta, Braunton's milk-vetch, Agoura Hills dudleya, and Santa Monica Mountains dudleya.
- Review of aerial imagery, topographical maps, National Hydrography Dataset (NHD), and National Wetlands Inventory (NWI) data.
- Soil data and geologic maps and several models were run to identify slope data and evaluate potential drainages at a scale not represented by existing NHD data.
- Slope analysis was conducted to determine areas above and below a 25 percent slope gradient.

Several local experts were also interviewed to provide information, including unpublished and anecdotal data, to aid in the development of this report:

- Tarja Sagar, Botanist, Santa Monica Mountains National Recreation Area
- Seth Riley, Wildlife Biologist, Santa Monica Mountains National Recreation Area
- Kathleen Delaney, Wildlife Biologist, Santa Monica Mountains National Recreation Area
- Justin Brown, Wildlife Ecologist, Santa Monica Mountains National Recreation Area
- Joanne Moriarty, Wildlife Ecologist, Santa Monica Mountains National Recreation Area
- Clark Stevens, Resource Conservation District of the Santa Monica Mountains
- Rosi Dagget, Resource Conservation District of the Santa Monica Mountains
- Erinn Wilson, California Department of Fish and Wildlife
- Dan Cooper, Cooper Ecological

- Robb Hamilton, Hamilton Biological Services and
- Joe Decruyenaere, Biologist for the County of Los Angeles

Step 3: Consider the Accuracy and Precision of the Best Available Data

An extensive review of vegetation data, literature, and resource databases was conducted to map vegetation, identify important features, species locations, and other biotic and abiotic factors that could be used to predict or determine the most likely locations of sensitive species or important habitat in the North Area. While each data set provides important information for a given species, habitat, or resource, there are several factors that must be considered when using existing data to model or predict the distribution of sensitive resources or habitat functions. After reviewing the best available information, several important caveats were identified that affect the power of the data and how it can be used to assign habitat sensitivity rankings to the North Area.

Vegetation Caveats

The vegetation communities mapped in this effort are based on the NPS Santa Monica Mountains vegetation mapping project, and while this dataset represents the most comprehensive information available regarding the vegetation in the North Area, several caveats are warranted. Vegetation coverage can be dynamic and change over time. For example, an area mapped as mulefat scrub (a riparian alliance) in 2006 may be occupied by different riparian vegetation alliance such as willow scrub in 2016. Similarly, annual grasslands may now be dominated by scrub or nonnative herbaceous communities such as mustards or Russian thistle. In addition, some areas of a particular vegetation type are small and not recorded depending on the minimum mapping unit that is set for the map. The mapping scale for this effort was one acre. In the vegetation data used for this report, important features or vegetation including rock outcrops, riparian vegetation, or scattered oak trees are often “swallowed up” due to the mapping scale and are characterized by the surrounding vegetation such as chaparral or coastal sage scrub. This scenario is particularly true for small riparian associations that may occur as a narrow thread of vegetation within a broad scrub or chaparral community. Similarly, small patches of native grasslands, seeps, springs, or rock features supporting unique or rare plants are often “lost” within the broader habitat matrix. Other important caveats include:

- Vegetation types typically intergrade on the landscape, without precise boundaries. In some cases, vegetation boundaries are distinct, often resulting from events such as wildfire or flood. These boundaries may become much less apparent after years of post-disturbance succession. Therefore, mapped boundaries represent best professional judgment, but should not be interpreted as literal delineations between sharply defined vegetation types.
- Natural vegetation tends to exist in general recognizable types, but also may vary over time and geographic region. Written descriptions cannot reflect all local or regional variation. Many stands of natural vegetation do not strictly fit into any named type. Therefore, a mapped unit is given the best name available in the classification, but this name does not imply that the vegetation unambiguously matches written descriptions.

- Photo interpretation of some types may be difficult. Accuracy of a vegetation map will vary depending on the level of ground-truthing efforts. For the purposes of this assessment, key areas were field-verified and updated as needed; however, the large size of the North Area and private property restrictions precluded detailed field verification across the entire mapped area.

Data Accuracy

The accuracy of the data varies greatly across the region, database, or model. Some reports and survey data provide highly accurate data that contains detailed information on species numbers, locations, and habitat associations. Conversely other data sets assign vague or ambiguous locations that are not intended to be used as a site-specific tool but rather to highlight regions where a given species is most likely to occur. Other data sets do not disclose specific locations to prevent target species, such as pond turtles or raptor nests, from intentional human disturbance.

Some Available Sampling Data are Incomplete, Biased, or Coarse

The North Area has been subject to a wide variety of studies, surveys, and land management activities. Many of these have been conducted on public lands managed by the NPS or other land management groups. Information for these areas is generally robust with detailed accounts of sensitive resources and other land use factors. Conversely, biological resource inventories have only been conducted on a few private parcels, which leads to data gaps on the distribution of resources in the North Area. A review of the data alone underrepresents the distribution of sensitive plants and wildlife that likely occur in the North Area.

Other data sets such as soil maps are useful at highlighting areas where a plant or animal may be found but are generally too coarse to be used in a habitat model or ranking system. For example, several rare species of *Dudleya* are found on rock outcrops or in volcanic soils. Lyon's pentachaeta, another rare annual plant, is typically found on rocky clay soils in openings in coastal scrub, chaparral, and grasslands. It is also associated with disturbed locations such as trails, roads, or even graded areas. These species are tied to a unique microhabitat that only occurs in a few locations within the mapped unit despite the underlying geologic or soils map. Use of the soil map alone would over-represent the potential for these species to occur in each area but could be used as an indicator for potential occurrence.

Step 4: Evaluate Rarity or Sensitivity and Assign Habitat Sensitivity Rankings

To evaluate rarity and determine if a type of vegetation, feature, or species should be protected, this assessment considered a variety of factors including but not limited to existing regulations protecting or identifying sensitive vegetation, species, or features; the presence of sensitive species; soils and geology data; vegetation type and its role in supporting sensitive plants or wildlife; and how a feature or habitat plays a role in supporting ecosystem function. These factors were evaluated, and specific Habitat Sensitivity Indicators were identified to develop the Habitat Sensitivity Rankings. The Habitat Sensitivity Indicators include the same habitat, species, or features that were considered in the evaluation and assignment of Habitat Sensitivity Rankings, but, were not mapped as individual features. These indicators are included in the habitat definitions to draw attention to their presence if found on a given

property (see Tables 4a and 4b for a list of all Habitat Sensitivity Indicators). Some of the information that was considered included:

- Is the habitat already designated rare by a, local, State or federal agency, CNPS, or NatureServe?
- Is the community or species locally uncommon in the North Area because it is at the edge of its range or has undergone substantial loss on a statewide basis, or does it provide important habitat functions for sensitive wildlife or contribute to the broader ecological health of the region?
- Do local experts consider the species at risk or declining?
- Is a vegetation community susceptible to disturbance or type conversion?
- What percentage of the habitat type occurs on protected lands or lands less likely to be developed due to slope or isolation?

Vegetation

The vegetation data were layered with the various databases to develop maps that could be reviewed on a coarse and fine scale. This allowed us to view the data across the North Area and determine what percentage of the vegetation or species are conserved or protected on public lands. The data also provided us with a tool to determine the power or usefulness of the data. Our general approach for vegetation is described below.

- 1) Review NPS vegetation and landform data and identify sensitive vegetation communities that occur in the North Area. Vegetation that was considered sensitive was highlighted and then evaluated based on its distribution in the North Area.
- 2) Assess each vegetation type to determine if it warranted inclusion in a S1 or S2 ranking. The goal of S1 is to include only the rarest habitat or habitat that plays crucial habitat functions. Some vegetation communities ranked by NatureServe are considered globally rare, but we did not consider them as an S1 community in the North Area because they are successional or they do not provide essential habitat functions for sensitive plants or wildlife.
- 3) Evaluate if the vegetation community is important to sensitive plants and wildlife. Each of the vegetation communities and their sensitivity is discussed below.
- 4) All riparian vegetation types (when located in a riparian area not as an isolated plant) and woodland vegetation types including oak woodland, oak savannah, bay laurel, and black walnut woodlands were considered S1 habitat because of their ecosystem function.
 - a. *Rationale for riparian:* In California, more than 95 percent of riparian habitats that were present prior to European settlement have been severely degraded or destroyed (Smith, 1977; Katibah, 1984). Although riparian zones naturally account for a low percentage of the total landscape (often less than 1%), they typically accommodate a disproportionately high number of species and provide a larger degree of ecological function than surrounding upland areas (Fischer and Fischenich, 2000). This factor recognizes the inherent importance of riparian areas and considers the known presence of sensitive plants or wildlife in the project area regardless of the habitat conditions that occur. Riparian habitat comprises approximately four percent of

the total vegetation in the Santa Monica Mountains, yet it supports 24 percent of species. In the North Area, several sensitive species including the southern western pond turtle (*Actinemys pallida*), two-striped garter snake (*Thamnophis hammondi*), coast range newt (*Taricha torosa torosa*), and yellow-breasted chat (*Icteria virens*) are found in riparian areas.

- b. *Rationale for buffer habitat:* This designation would extend to all habitat adjacent to riparian areas regardless of community type because many aquatic and semi-aquatic species rely on adjacent terrestrial habitats to complete their life cycles (Semlitsch and Bodie, 2003; Spinks et al., 2003; Burke and Gibbons, 1995) and riparian vegetation provides necessary foraging and nesting habitat for many bird species (Rottenborn, 1999; Bolger et al., 1997); even relatively disturbed areas that are adjacent to existing riparian vegetation can be important to a suite of common and sensitive wildlife. In many instances bird use along the margins of riparian areas is extremely high. The edges where riparian habitat meets with upland habitat are known as ecotones, or transitional habitats. Numerous studies have shown that transitional habitats are critical for many animal species. Productivity of these areas is often high, supporting large numbers of insects, small reptiles, mammals, and other prey items. Similarly, sensitive wildlife may use these areas for foraging, dispersal, or other important behaviors.

Buffer areas that include existing development such as roads, residences, corrals, or other structures can be used by some species of wildlife, but these land uses often have detrimental effects to biological resources. These areas are included in the buffer designations and would be evaluated during a project's pre-development planning process.

- c. *Rationale for oak and other woodlands:* Oak trees are recognized by the County as significant historical, aesthetic, and ecological resources. Impacts to oaks are regulated under the County's Oak Tree Ordinance, which requires an oak tree permit for any impacts to oak trees. Although not considered a sensitive alliance by CDFW, for the purposes of this report coast live oak woodland is considered sensitive consistent with California Public Resources Code § 21083.4, the County Oak Tree Ordinance and reflective of its key role in the ecology of the Santa Monica Mountains; therefore, any oak woodland regardless of dominant species is considered sensitive. Oak woodland habitat is very slow growing and even modest impacts may take many years to repair. Oak woodlands generally provide high-quality habitat for a large variety of wildlife species. They also contribute woody debris to the duff in the woodland understory, which provides foraging areas for small mammals and microclimates suitable for amphibians and reptiles. Oak trees provide nesting habitat for numerous passerine birds as well as for raptors such as the rare long-eared owl (*Asio otus*) and Cooper's hawk (*Accipiter cooperii*). Silvery legless lizard (*Anniella pulchra pulchra*), shoulderband snails, and ensatina (*Ensatina eschscholtzii*) are often found in the leaf litter below oak trees.

5) All seeps, springs, rock outcrops, waters, and ponds are considered an S1 habitat.

- a. *Rationale for seeps, springs and wetlands:* Seeps and springs are important communities in the North Area, with a unique association of plants and wildlife including ferns and mosses, wildflowers, invertebrates, and amphibians (especially salamanders). At least five species of newts and salamanders are found in the Santa Monica Mountains including arboreal

salamander (*Aneides lugubris*), black-bellied slender salamander (*Batrachoseps nigriventris*), ensatina, and California newt. Seeps and springs are small and difficult to discern on aerial imagery, and NPS did not map these features in the North Area because they are smaller than the one-acre minimum mapping unit and usually obscured by overstory vegetation. Only a few wetland sites were mapped in the NPS's mapping effort. This habitat contains dense to intermittent herbaceous vegetation in wet soil or shallow standing water, usually at the edge of a water body and have important ecosystem functions.

- b. *Rationale for rock outcrops:* Rock outcrops are frequently associated with rare annuals, bryophytes, and lichens. Other plants often found on the rock faces in protected areas include Dudleya, Selaginella, and various lichens. Agoura Hills dudleya (*Dudleya cymosa* ssp. *agourensis*) is federally listed as Threatened and occurs on rock outcrops in and near the North Area. Rock outcrops provide habitat for bats and are used by cavity nesting birds such as rock wrens (*Salpinctes obsoletus*).

Rock outcrops that do not support sensitive plants or wildlife, as determined through a site-specific review, would not be considered sensitive.

- 6) All native grasslands larger than 0.10 of an acre are considered an S1 habitat.

- a. *Rational for native grasslands:* Native grasslands are extremely rare and are often overlooked in non-native grasslands. The presence of these communities often includes many native wildflowers, some of them rare, and may include important soil crusts. Wildflower fields are considered rare by the CDFW, contribute to species diversity, and often provide important food sources for native wildlife. Native grasslands must meet the membership rules identified in the latest version of *A Manual of California Vegetation* (Sawyer, Keeler-Wolf, and Evans, 2009).

- 7) All non-native grasslands are considered an S2 habitat.

- a. *Rational for non-native grasslands:* Annual grasslands are important foraging habitat for a variety of species. Mourning dove (*Zenaida macroura*), western meadowlark (*Sternella neglecta*), savannah sparrow (*Passerculus sandwichensis*), and a variety of raptors are strongly associated with annual grasslands. Northern harrier and white-tailed kite, both State-protected species, forage in grasslands and open areas. Annual grasslands often support a wide variety of native annuals and may contain native grasses.

- 8) Coastal sage scrub communities are considered S2 habitats.

- a. *Rational for coastal scrub:* Coastal sage scrub provides a unique vegetation structure that supports a variety of species and has experienced rapid decline in the past decade from development and type conversion from wildfires. In the North Area, this community supports a variety of sensitive plants and wildlife including Plummer's mariposa-lily (*Calochortus plummerae*), rufous-crowned sparrow (*Aimophila ruficeps*), coastal whiptail, and coast horned lizard (*Phrynosoma blainvillii*). It is likely that San Diego desert woodrat (*N. lepida lepida*), a California Species of Special Concern, also occurs in this habitat. Many of these scrub-associated species are widely distributed in the North Area, and large tracts of

coastal sage scrub are protected on public lands or occur in areas with lower development potential (e.g., areas above 25 percent slope).

9) Chaparral communities are considered S2 habitats.

- a. *Rationale for chaparral:* Chaparral is a scrub community that shares many of the common shrub and herbaceous species as coastal scrub but is denser and taller than coastal sage scrub. Due to their overall similar structure and composition, many wildlife species in the North Area are widespread throughout the chaparral communities; however, this community type is not essential to a particular rare species. Cedar waxwings (*Bombycilla cedrorum*) forage on various fruit-producing plants such as elderberries and toyon, and woodrat middens occupied by big-eared woodrat (*Neotoma macrotis*) are often found in this community. Mountain lions also den beneath large shrubs in chaparral communities. Therefore, while chaparral is important habitat for a variety of wildlife, it is widespread in the North Area and is not considered a limiting resource for any sensitive species.

10) Disturbed, ruderal, and nonnative vegetation communities are considered S3 habitats.

- a. *Rationale for disturbed, ruderal, and nonnative vegetation:* Disturbed areas are typically devoid of vegetation or are subject to continual disturbance by vehicles, pedestrians, or other human causes. They do not typically support a wide assemblage of native plants or wildlife; however, they are used for foraging and dispersal by many species. If friable soils and suitable prey items persist, they can be colonized by sensitive species including horned lizards once the disturbance has ended. In some instances, recently graded or disturbed areas may support sensitive plant species that have laid dormant in the seed bank for many years. Some of these plants may include the federally listed Lyon's pentachaeta and Braunton's milk-vetch. Similarly, a variety of wildflowers including several rare species of mariposa lily may bloom in recently cleared chaparral. Over time these areas may reestablish native communities if the underlying soil structure is intact.

Many disturbed areas may transition to ruderal communities as native and non-native pioneering plant species readily colonize open disturbed soil and thrive as a result of human impacts. Colonizing annuals often include summer mustard, tocalote, and Russian thistle. Some non-native and often invasive herbs include tumbling pigweed (*Amaranthus albus*), scarlet pimpernel (*Anagallis arvensis*), mayweed (*Anthemis cotula*), pineapple weed (*Matricaria discoidea*), Italian thistle, red-stem filaree, and sweet fennel (*Foeniculum vulgare*). Prickly lettuce (*Lactuca serriola*), horehound (*Marrubium vulgare*), bur-clover (*Medicago polymorpha*), and spiny cocklebur are also common in some ruderal communities.

Non-native plant communities can include but are not limited to stands of non-native trees such as gum (eucalyptus), Peruvian pepper tree, or tree of heaven. Giant reed is common to many watersheds in the North Area and is a threat to native riparian communities. Although many native species forage and nest in non-native trees, including several species of raptors, these trees are generally considered to have a lower value to native wildlife compared to stands of native vegetation.

11) Developed and agricultural lands are considered an S4 habitat.

- a. *Rationale for developed and agricultural lands:* Developed lands is a cover type used to describe areas that support residential or commercial development, other facilities, or roads. Developed areas support disturbance/urban tolerant species including house finches, doves, raccoons, opossums, skunks, and small rodents. Barn owls and red-tailed hawks are often found in residential areas of the North Area. Agricultural lands can be used by a variety of native species depending on the crop, use of pesticides or herbicides, type of fencing, and level of human disturbance. Developed areas and agricultural lands displace habitat, and while some species can adapt and even thrive in these areas, the composition of native species is greatly diminished compared to natural areas. In addition, these areas often have impacts that extend well away from the development. Known as edge effects, lighting, fencing, domestic animals, and noise all contribute to a decline in species diversity along urban areas. See Section 3.1 for more information on edge effects and other urban impacts on native plants and wildlife.

Plants

Special-status plants that meet one or more of the following criteria were considered in the development of the Habitat Sensitivity Ranking System:

- Designated as either rare, threatened, or endangered by CDFW or the USFWS, and are protected under the California or federal Endangered Species Acts (ESA);
- Candidate species being considered or proposed for listing under these same acts;
- Classified as California Rare Plant Rank (CRPR) 1, 2, 3, or 4 by CDFW and CNPS;
- Are of express concern to resource/regulatory agencies or local jurisdictions;
- Locally uncommon in the North Area; or
- Listed on watch lists or provided with special conservation designations by professional working groups/societies.

Available rare plant occurrence records were layered with the vegetation maps to identify locations and habitat associations in order to estimate the percentage of each species conserved or protected on public lands in the North Area. The general approach to incorporating rare plants in the Habitat Sensitivity Rankings is described below.

- 1) Identify all State or federally listed species, designated Critical Habitat, and CRPR 1 to CRPR 4 species. Review lists of species not designated as special status but that are considered uncommon in the North Area (even if they are more common elsewhere in California).
- 2) Evaluate mapped occurrences of special-status and locally uncommon plants in the North Area and review CNPS/California Consortium of Herbarium records for each plant.
- 3) Assign habitat sensitivity rankings (S1-S2 rankings) for rare plant observations where there was accurate information regarding the specific location of the plant occurrence. For example, we mapped known polygons of a rare *Dudleya* where the occurrence data were extremely accurate.

However, most data points were of undetermined accuracy and precision, and we did not attempt to assign map features for *all* rare plant observations.

- a. *Rationale*: Mapping these locations assumes we have more comprehensive data than what is available. It is important to note that these records do not represent all the special-status species occurrences in the North Area, as they are limited to only those occurrences that have been reported by observers. Most locations within the North Area have not undergone extensive biological surveys. We did not attempt to predict the locations of other occurrences based on existing species data, mapped distribution information, or soils data. However, based on a review of the published data and the ecology of each plant species, rare plants could be expected to occur in unsurveyed locations with similar habitat and soil conditions as those found during surveys of public lands.
- 4) Consider all listed plants as S1 habitat indicators. All USFWS designated Critical Habitat was considered S1 habitat.
- a. *Rationale for listed plants*: Because so few federally and state-listed plants occur in the North Area, their total protection is warranted. In addition, the County cannot authorize the take of these species. Critical Habitat was considered S1 habitat; however, the S1 ranking – as determined by more intensive investigation, including field visits – would be limited to areas that provide the Primary Constituent Elements (PCEs) required to support the target species. Species-specific PCEs are identified by the USFWS in each critical habitat designation and are those characteristics that are considered vital to the long-term conservation of a taxon. As an example, PCEs that have been recognized for Lyon's pentachaeta, and have been included in the final rule for designated critical habitat, include:
 - a. Clay soils of volcanic origin.
 - b. Exposed soils that exhibit a microbiotic crust which may inhibit invasion by other plant competitors.
 - c. A mosaic of bare ground (>10%) patches in an area with less than 60 percent cover.

Areas that may have been mapped as S1 habitat because they are within designated critical habitat, but do not support PCEs may ultimately be determined not to be S1 habitat, depending on the results of a site-specific biological assessment.

- 5) Some but not all CRPR 1 through CRPR 4 and locally uncommon species were considered S1 habitat indicators. S1 species were limited to the most uncommon in the North Area. We used a threshold of five CNPS/CCH records in Los Angeles County (exclusive of the Islands) as the maximum cutoff for S1 Habitat Indicator Species. All other uncommon plants were included in the S2 Habitat Indicator Species list (see Tables 4a and 4b).
- a. *Rationale for rare/uncommon plants*: We acknowledge that the five-occurrence threshold is somewhat arbitrary, but it has been used in Ventura County and the NPS considered this a reasonable threshold (T. Sagar, pers. comm.). We did not attempt to predict the locations of other occurrences based on existing species data, mapped distribution information, or soils

data. However, we can expect, based on a review of the published data, that we would likely have the same potential to locate rare plants in un-surveyed locations with similar habitat as those found during surveys of public lands.

Wildlife

Special-status animals that meet one or more of the following criteria were considered in the development of the Habitat Sensitivity Ranking System:

- Designated as threatened or endangered by CDFW or the USFWS, and are protected under the California or federal Endangered Species Acts (ESA);
- Candidate species being considered or proposed for listing under these same acts;
- Designated as Species of Special Concern by CDFW;
- Fully protected by the California State Fish and Game Code, Sections 3511, 4700, 5050, or 5515;
- Are of expressed concern to resource/regulatory agencies or local jurisdictions;
- Locally uncommon in the North Area; or
- Included on watch lists or provided with special conservation designations by professional working groups/societies (e.g., Western Bat Working Group).

Available wildlife occurrence records were layered with the vegetation maps to identify locations and habitat associations in order to estimate the percentage of each species conserved or protected on public lands in the North Area. The general approach to incorporating special-status wildlife in the Habitat Sensitivity Rankings is described below.

- 1) Identify all State or federally listed species, designated critical habitat, and Species of Special Concern. We also considered lists of species that are not designated with a special conservation status but that are considered uncommon in the North Area (even if they occur more commonly elsewhere in California).
- 2) Evaluate mapped occurrences of special-status and locally uncommon wildlife in the North Area, and review databases for occurrence and habitat requirements.
- 3) Consider all listed and fully protected wildlife as S1 habitat indicators. All USFWS designated Critical Habitat was mapped as S1 habitat. Because of patchy or incomplete data, we did not attempt to assign map features (S1-S2 rankings) for sensitive wildlife observations.
 - a. *Rationale for listed wildlife:* Because so few listed wildlife species occur in the North Area, their protection is warranted. Any list presented in this report should be considered preliminary and not a complete representation of S1 indicators. For example, any listed or fully protected species that is identified should be considered an S1 Indicator Species in the North Area. Similarly, some species may continue to decline regionwide or become locally uncommon, which would elevate them to an S1 Indicator Species until an assessment can be made to evaluate rarity and sensitivity.
- 4) Include special-status riparian-dependent species as S1 Indicator Species.

- a. *Rationale for riparian-dependent species:* We included riparian-associated species as S1 indicator species even though they are already protected by an S1 vegetation ranking (riparian vegetation and streams) because some species, including the two-striped garter snake and southern western pond turtle, require upland habitat for overwintering that likely extends far outside the 100-foot buffer given to S1 habitats.
- 5) Include select California Species of Special Concern and locally uncommon species as S1.
 - a. *Rationale for inclusion:* The species include as S1 indicator species are uncommon or declining in the region, such as yellow belied racer, burrowing owl, and American badger. Other species such as mountain quail are included even though they may be extirpated from the area. Some species favor unique habitat associations.
- 6) Consider all other California Species of Special Concern and locally uncommon species as S2 habitat Indicators.
 - a. *Rationale for inclusion:* Many of the other species do not appear to warrant inclusion in the S1 Habitat Indicator Species list. Some are protected by virtue of their association with vegetation types designated as S1 Habitat, occur primarily on public lands, or can use a variety of habitats in the North Area. Others are likely underrepresented or underreported in existing databases and are more widely distributed in the North Area than records suggest. Inclusion as an S2 indicator species provides these species special consideration during future development, but their presence alone would not preclude development. The intent of all S2 Habitats or Habitat Indicator Species is to raise the level of awareness if detected, and to avoid or minimize effects to these species when possible and mitigate when impacted.

Step 5: Finalize Habitat Sensitivity Rankings and Habitat Sensitivity Indicators

Habitat Sensitivity Rankings for the North Area were determined by considering the best available information and weighing the rarity or sensitivity of the vegetation, feature, or species in the North Area. These rankings were mapped to highlight areas subject to different development standards, scrutiny, and level of pre-development planning. Each proposed Habitat Sensitivity Ranking defines the sensitivity of the habitat and includes associated recommendations on allowable uses. In addition to the four mapped sensitivity rankings (S1, S2, S3, and S4), a list of Habitat Sensitivity Indicators was developed for S1 and S2 Habitat Sensitivity Rankings. Habitat Sensitivity Indicators are those sensitive resources that warrant consideration and protection in the North Area but are not available as mapped datasets. The presence of Habitat Sensitivity Indicators is determined during site-specific biological assessments and these indicators may elevate a mapped sensitivity ranking, if present.

S1 Habitat: Habitat of Limited Distribution, Particular Rarity, or Important Habitat Function

S1 habitat is restricted to the most unique or rare habitat or habitat that provides essential functions for native plants and wildlife. S1 habitat includes areas supporting State and/or federally listed species or species considered unusually rare or unique for the North Area. S1 Habitat Sensitivity Indicators include each of the trigger vegetation communities, landforms, features or species used to develop the ranking (See Table 4a). S1 Habitat Sensitivity Indicators include:

- The rarest and most sensitive habitat in the North Area (e.g., riparian and oak woodlands);
- The presence of any State or federally listed or candidate species or their Critical Habitat;
- Any State fully protected species;
- Any habitat essential to the life history of a State and/or federally listed or candidate species;
- The rarest wildlife species considered California Species of Special Concern by the CDFW;
- The rarest CRPR 1B plants and the rarest locally uncommon plants or wildlife;
- Unique features such as seeps, springs, vernal pools, and rock outcrops;
- All ephemeral, intermittent, and perennial drainages; and
- Any area within 100 feet of an ephemeral, intermittent, or perennial drainage.

S1 Development Restrictions: S1 habitat has the most restrictive development standards. Little to no development should occur in S1 habitat. S1 habitats are considered especially rare and important and would require the most comprehensive assessment of biological resources.

S2 Habitat: Intact but Broadly Distributed Habitat

S2 habitat includes any native scrub or chaparral community and non-native annual grasslands. S2 habitat includes some native scrub communities that are considered rare and may be rare locally but are more common in other areas of the County and State. Most of these communities have the potential to support sensitive plants and wildlife not identified in the S1 designation and play important roles in supporting biodiversity, wildlife movement, and watershed function. S2 Habitat Sensitivity Indicators include each of the trigger vegetation communities, landforms, features, or species used to develop the ranking (See Table 4b). S2 Habitat Sensitivity Indicators include:

- Any species designated as a California Species of Special Concern by the CDFW not identified in the S1 Habitat Sensitivity Indicator List;
- All the uncommon plants and wildlife of the Santa Monica Mountains not identified in the S1 Habitat Sensitivity Indicator List;
- All native vegetation communities not identified in the S1 Habitat Sensitivity Indicator List;
- California annual grasslands and wildflower fields;
- Important nest or roosting trees or manmade structures for bats or raptors.

S2 Development Restrictions: S2 habitat may be subject to development after consideration of site-specific conditions. S2 Habitats include all other native vegetation communities and have the potential to support biological resources. Prospective developers would be required to conduct a biological resources inventory to demonstrate existing habitat conditions and the presence of S2 Habitat Sensitivity Indicators. Development would be expected to make every effort to avoid any S2 Habitat Sensitivity Indicators. If avoidance is not possible, the developer must make every effort to minimize impacts to S2 Habitat Sensitivity Indicators and provide mitigation to off-set impacts. Development could be restricted if it is determined that the development would result in a decline of a native species in the North Area.

S3 Habitat: Disturbed, Non-Native, and Cleared Habitat

S3 Habitat includes areas supporting ruderal or disturbed plant communities, non-native vegetation, legally cleared areas, and fuel modification zones. There are no Habitat Sensitivity Indicators for S3 habitat. However, there is a potential to locate S1 or S2 Habitat Sensitivity Indicators within areas

mapped as S3. Fire breaks and legally cleared areas may support some disturbance-tolerant plants including Lyon's pentachaeta or Branton's milk-vetch. Some species of mariposa lilies and several annual plants may lay dormant in the soil and not be detected until an area is cleared of brush. Many small drainages can occur in these areas and they are often overlooked during surveys. Special emphasis must be placed on these areas to ensure Habitat Sensitivity Indicators are not disregarded. S3 features include:

- Disturbed plant communities and non-native vegetation;
- Ornamental vegetation and legally cleared lands; and
- Fuel modification zones.

S3 Development Restrictions: S3 habitat may be subject to development after consideration of site-specific conditions. These areas should be the focus of development where possible. A reconnaissance-level survey should be conducted to assess if S1 or S2 Habitat Sensitivity Indicators (sensitive plants and wildlife) could occur on or near the site. Note that many areas mapped as S3 (or even S4) may be in S2 (or S1) habitat areas following the results of a site-specific biological assessment.

S4 Habitat: Developed and Agricultural Lands

S4 Habitat includes areas supporting legally authorized residential, commercial, or agricultural development. S4 includes low-density rural residences. These areas should be the focus of development where possible. There are no Habitat Sensitivity Indicators for S4 habitat. However, there is a potential to locate S1 or S2 Habitat Sensitivity Indicators within areas mapped as S4. Some developed areas abut perennial streams or sensitive vegetation communities. Disturbed road edges at vineyards or recently graded areas can support several species of rare plants. While the potential to encounter rare species is generally low, care must be taken to ensure Habitat Sensitivity Indicators are not disregarded.

S4 Development Restrictions: S4 habitat may be subject to development after consideration of site-specific conditions. Some sensitive plants and wildlife may occur in these areas. A reconnaissance-level survey should be conducted to assess if S1 or S2 Habitat Sensitivity Indicators (sensitive plants and wildlife) could occur on or near the site and if additional studies are warranted.

4.2 Implementation Guide to Habitat Sensitivity Rankings and Habitat Sensitivity Indicators

This section describes how the Habitat Sensitivity Rankings should be used when planning a project in the North Area. Each ranking in Habitat Sensitivity Ranking System defines the sensitivity of the habitat and provides recommendations on allowable uses. Maps of the North Area were created using vegetation, land use designations (e.g., designated critical habitat) and other factors. The intent of the Habitat Sensitivity Maps and the Habitat Sensitivity Indicators is to assist County Planners, developers, and residents to:

- Be informed of the development standards and conservation strategies in the North Area;
- Highlight areas that warrant the highest conservation priorities versus areas more suitable for development;

- Identify sensitive habitat, species, land use designations, or features that may occur on proposed development sites;
- Provide lists of habitats, species, land use designations, or features that warrant special protection or avoidance in the North Area; and
- Streamline the development process in locations that do not support protected resources.

The Habitat Sensitivity Maps and Habitat Sensitivity Indicators are intended to be a screening tool when planning development in the North Area and are not intended to be used as the sole source of information for planners or developers. Some important considerations when using the Habitat Sensitivity Maps and Habitat Sensitivity Indicators include:

- Vegetation communities change over time and areas mapped as one community type may be different in the future due to fire, succession, fuel modification zones, or other disturbance.
- The scale of the maps may not accurately characterize habitat conditions on a small parcel or the parcel may include important habitats not detected during the larger mapping effort.
- The maps cannot accurately show the distribution of sensitive plants and wildlife or include all important habitat features such as rock outcrops or drainages.
- The Habitat Sensitivity Indicators list may change over time as new species are added or species are removed from the list due to recovery efforts or changes in their populations.
- The maps are not intended to bypass existing laws, ordinances, or regulations that protect sensitive resources including the California Environmental Quality Act (CEQA), or regulations administered by the U.S. Fish and Wildlife Service (USFWS), California Department of Fish and Wildlife (CDFW), U.S. Army Corps of Engineers (USACE), or Regional Water Quality Control Board (RWQCB). See Attachment 4 for a description of regulations related to biological resources.

The Habitat Sensitivity Maps and Habitat Sensitivity Indicators should be considered a high-level pre-development planning tool that raises awareness of a site and should be paired with site-specific assessments. These assessments are required to verify habitat conditions and to confirm the Habitat Sensitivity Ranking is appropriate for a proposed project site. For example, the best available data presented on the maps may assign a Habitat Sensitivity Ranking that is too high or too low based on actual field conditions. This allows the developer the ability to verify site conditions, make an informed decision on the development risk at a given site, and to prove-in or prove-out of a Habitat Sensitivity Ranking.

Development Application: Pre-Development Review Process

As part of the application process, the land owner should identify the Habitat Sensitivity Ranking of the proposed development site, field verify habitat conditions, and ensure their parcels are accurately characterized. This is often referred to as a “prove-in/prove-out” process. Conducting a preliminary investigation allows the land owner or developer to:

- Ensure the site’s mapped Habitat Sensitivity Ranking is accurate and the appropriate development conditions are identified
- Identify if the site supports any S1 or S2 Habitat Sensitivity Indicators that could affect development on the site

- If S1 or S2 Habitat Sensitivity Rankings or Habitat Sensitivity Indicators are detected, evaluate whether design changes can avoid or minimize adverse effects to these resources
- Evaluate if additional permits from the USFWS, CDFW, USACE, or RWQCB are required (in coordination with the County)

S1 and S2 Habitat Sensitivity Indicators could occur in any of the four mapped rankings (S1, S2, S3, and S4) and may act as “sensitivity triggers” if detected during project-specific evaluations. The indicators would be used in conjunction with other Habitat Sensitivity Ranking information and would be verified during the “prove-in/prove-out” process. For example, an S1 Habitat Sensitivity Indicator such as a rock outcrop supporting a listed plant species could occur in an area mapped as S3 (Disturbed, Non-Native, and Cleared Habitat). Under this scenario, the S3 habitat may be elevated to S1 depending on the type and location of the Habitat Sensitivity Indicator with respect to the proposed development. Similarly, if an S2 Habitat Sensitivity Indicator such as an annual grassland occurs in an area mapped as S3, the S3 habitat may also be elevated to S2 depending on the species composition of the grassland. The presence of an S1 or S2 Habitat Sensitivity Indicator in an area mapped as S2, S3, or S4 could be the result of several factors including changes to the vegetation communities or incomplete resource data. Table 5 presents a series of examples that describe how or when a Habitat Sensitivity Ranking can change based on actual field conditions.

Table 5. Examples of When Habitat Sensitivity Rankings Could Change		
Mapped Habitat Sensitivity Ranking	Actual Site Conditions	Revised Habitat Sensitivity Ranking Based on Field Inspection
S1	Area mapped as riparian vegetation but consists of ornamental plantings and rural development with no sensitive resources. No drainage located on or near the site.	Revised to S3 or S4
S1	Area mapped as critical habitat for Lyon's pentachaeta; however, the site consists of graded field, ornamental plantings, and rural residential properties. Botanical surveys did not detect the presence this plant or suitable habitat conditions.	Revised to S3 or S4.
S1	Area mapped as oak woodland adjacent to residential communities. The area under the oak trees is cleared of vegetation for a fuel modification zone but oak trees remain.	Area within fuel modification zone revised to S2
S2	Area mapped as coastal sage scrub but consists of cleared habitat for fuel modification zone. No sensitive species detected.	Revised to S3
S2	Area consists of chaparral. However, listed plant species are detected across most of the site.	Revised to S1
S2	Area mapped as native chaparral, but site is now a vineyard.	Revised to S4 (assuming work was done legally; discuss with planning staff and address history in site-specific report)
S3	Area consists of cleared habitat for fuel modification zone. A small area supports a rock outcrop with a listed plant species.	Portion of site revised to S1
S3	Disturbed field dominated by non-native weedy species. A small drainage (an S1 Habitat Indicator) crosses one portion of the site.	Portion of site revised to S1

Table 5. Examples of When Habitat Sensitivity Rankings Could Change

Mapped Habitat Sensitivity Ranking	Actual Site Conditions	Revised Habitat Sensitivity Ranking Based on Field Inspection
S3	Entire site mapped as disturbed vegetation, but sliver of native-rich grassland detected in corner of site (<0.1 acre).	Portion of site revised to S2
S3	Area supports large windrows of gum trees and non-native shrubs. A white-tailed kite is nesting in the trees.	Portion of site revised to S1
S4	Area mapped as development, but large oak trees scattered amid houses, providing significant bird/wildlife habitat	Retain as S4 but avoid impacts to resources as feasible.
S4	Area mapped as development but consists of riparian habitat and a perennial stream.	Portion of site revised to S1
S4	Area mapped as agriculture but has remained fallow for years. Several rare plants and uncommon species of wildlife have been detected in the fallow fields.	Revised to S1 or S2

S1: Habitat of Limited Distribution, Particular Rarity, or Important Habitat Function

S2: Intact but Broadly Distributed Habitat

S3: Disturbed, Non-native, and Cleared Habitat.

S4: Developed and Agricultural Lands

During the prove-in/prove-out process, an S1 or S2 Habitat Sensitivity Indicator may have been detected in an area otherwise suitable for development. The presence of an S1 or S2 Habitat Sensitivity Indicator alone does not mean the entire site would be re-classified or preclude some level of development. Development on the site would consider factors such as how the Habitat Sensitivity Indicator's ecology would be disrupted by the proposed development. Was the Habitat Sensitivity Indicator a species that only occurred as a transient and may never be detected again? Does the site contain rock outcrops supporting a large population of a federally listed plant species? Or is there a small stream or seep that could be avoided by relocating the development footprint or re-aligning an access road to another location? During this process, if the land owner can demonstrate the project would avoid the S1 Habitat Sensitivity Indicators or would be able to avoid or minimize impacts to an S2 Habitat Sensitivity Indicator then the project can proceed through the review process.

Planning the Pre-Development Site Review Process

Prior to submitting an application for development to the County, land owners and developers should assess the biological sensitivity for each proposed development site. This would require the services of a qualified biologist. The level of effort largely depends on the site conditions. Areas supporting residential development, ornamental landscaping, or agricultural would require a less intensive effort compared to lands supporting natural vegetation communities. Weedy fields, fuel modification zones, and even disturbed areas should be evaluated for the presence of sensitive species or habitat features. It is incumbent on the land owner or developer to evaluate the sensitivity of the site to prevent delays in processing permits.

During these assessments, there are a number of factors that should be evaluated to determine the ultimate sensitivity of the site. These include documenting the habitat conditions on the site, evaluating the known or potential distribution of sensitive species that have the potential to occur, the presence of S1/S2 habitat sensitivity indicators, and various anthropogenic disturbances. Key considerations when assessing a site include:

- Factor 1. Vegetation (Structure, Composition, Diversity, Successional Stages);
- Factor 2. Geomorphology (Soils, Landforms, Slope, Hydrology);
- Factor 3. Sensitive Plants or Wildlife (Documented Occurrence of Listed or Sensitive Species);
- Factor 4. Wildlife (Presence, Nesting Potential, Habitat Quality, Connectivity and Movement Corridors); and
- Factor 5. Anthropogenic Disturbance (Adjacent land uses, Trails, Urban Interface, Roadways)

Factor 1. Vegetation (Structure, Composition, Diversity, Successional Stages)

The proposed development site should be identified on the County's Habitat Sensitivity Rankings map, and the mapped ranking should be verified or adjusted as necessary. The first step in verifying the Habitat Sensitivity Ranking is to conduct a survey to document the type of vegetation, if any, or development that is present on the proposed project site and within 300 feet of any proposed development. The survey should document the following:

- Does the site support existing development?
- Does the site support any vegetation above six inches in height?
- Is the site a natural barren area supporting scattered annuals with soil crusts?
- Is the site dominated by non-native landscaping or native vegetation?
- Does the site support a native herbaceous layer, shrub layer, and trees?
 - If so what community type is present as described by Sawyer, Keeler-Wolf, and Evans (2009)
 - Are any communities on the site listed as an S1 or S2 habitat sensitivity indicators?
- Other important notes would include:
 - Does the site support a diverse assemblage of native plants or is the site limited to monotypic vegetation?
 - Does the site support leaf litter, fine woody debris and/or coarse woody debris?
 - Does the site show evidence of native recruitment?
 - Does the site support greater than 15 percent exotics or noxious weeds?

Factor 2. Geomorphology (Soils, Landforms, Slope, Hydrology)

Many S1 Habitat features are based on the presence of creeks, drainages, rock outcrops and other landforms. The survey should document any S1/S2 habitat sensitivity indicators including the following:

- Does the site contain a stream, drainage, or swale that can convey water? Many of these features may not be apparent to the layperson as they only flow during storm events and may require the assistance of a qualified wetland delineator.
 - If present, is the drainage perennial, intermittent, or ephemeral?
 - Is the drainage strictly confined, channelized, concrete lined, or deeply incised?
 - Does the drainage contain flood-prone areas such as terraces, floodplains, or natural vegetated uplands?
 - Are multiple soil types present (silt, sand, gravel, cobble, rock, boulders)?
- Does the site contain volcanic, sandstone, or other rock outcrops?
- Does the area support thin soils over a rocky substrate?
- Does the site contain any areas with a slope greater than 25 percent?

Factor 3. Sensitive Plants or Wildlife (Documented Occurrence of Listed or Sensitive Species)

Regardless of the habitat type present on the site, it is important to determine if sensitive biological resources have the potential to occur on or near the proposed development. This can be accomplished by conducting a site investigation with a qualified biologist who is familiar with the resources of the North Area. There are also a variety of databases that can be reviewed to supplement the field surveys. The survey and database review should evaluate the following:

- Do listed or sensitive wildlife, or locally uncommon species (S1/S2 Habitat Indicator Species) occur on or within 300 feet of the project site? If so, document the locations of these species for consideration during the pre-development planning process.
- Does the site support breeding, foraging, or refugia habitat for any S1/S2 Habitat Indicator Species?
- Is the site located within designated critical habitat or contain recorded occurrences of sensitive plants or wildlife?

Factor 4. Wildlife (Presence, Nesting Potential, Habitat Quality, Connectivity and Movement Corridors)

Determine any wildlife habitat sensitivity indicators including the following:

- Does the site support nesting habitat for any bird, particularly any habitat that is different from the surrounding area?
- Does the site provide foraging habitat for particular types of small mammals, reptiles, or other wildlife, including habitat that is different from the surrounding area?
- Does the site support breeding, foraging, or refugia habitat (e.g., friable soils, intact habitat, uplands buffers, areas outside the flood plain)?
- Does the site show evidence of consistent wildlife use, including burrows, scat, wildlife trails, whitewash, pellets, prey remains, or evidence of grazing/browsing?
- Does the site support important habitat for dispersal (e.g., important uplands, drainages, vegetation)?
- Is the site located in an important wildlife corridor (at either a local or regional scale), or would development disrupt movement between blocks of open space, or to an important feature to wildlife such as a stream, ridgeline, or a large culvert or undercrossing?

Factor 5. Anthropogenic Disturbance (Adjacent Land Uses, Trails, Urban Interface, Roadways) Note: this includes both unpermitted/illegal disturbance and legal use.

Identify anthropogenic disturbances that could affect the sensitivity of the site, including:

- Is the site immediately adjacent to heavily travelled roadways, residential, or commercial development?
- Is the site subject to ongoing disturbance from routine vegetation clearing, recreation, grazing, or other disturbance?
- Is the site fenced, or have other structures been built?
- Is the site subject to water quality impacts such as agricultural runoff, or routine herbicide or pesticide application?
- Is the site located in a brush clearance zone?

Preparing the Biological Report

As described above, there are a variety of factors or ecological indices that a land owner or developer should use to evaluate the biological sensitivity and ecological health of the site. These factors would be considered by the County during the application review process and would be used to verify which Habitat Sensitivity Ranking is appropriate for a proposed development site. For proposed projects that have the potential to support sensitive species or natural habitat, the land owner or developer would be required to prepare a project-specific biological resources assessment documenting the conditions at the site prior to submitting an application. The basic approach to development in the North Area would include:

- 1) Identify the Habitat Sensitivity Ranking of the proposed project site using the County mapping database.
- 2) Conduct biological resources assessment to document the biological resources that occur or have the potential to occur on the project site. The assessment should be conducted by a qualified biologist, and the results of the assessment will verify or require adjustment to the mapped Habitat Sensitivity Ranking (“prove-in/prove-out”). The reporting format for the North Area would be the same as required for the SEAs in the County.
 - a. Identify if any protected trees, vegetation communities, designated critical habitat, or other S1/S2 habitat features occur, or have the potential to occur.
 - i. If these features occur or have the potential to occur, the developer will need to decide whether to proceed with supplemental surveys or re-evaluate the development process.
 - b. If S1 or S2 Indicator Species are observed or have the potential to occur, a biologist should complete focused biological surveys for target species during the appropriate season and weather conditions. Multiple surveys may be required depending on the resource. Protocol surveys for some species may be required depending on the location (e.g., California red-legged frogs for properties with wetland habitat within the Las Virgenes Creek watershed).
 - c. Identify the presence of any drainages including creeks, washes, swales, or other aquatic features. A jurisdictional delineation of State and Federal Waters should be conducted if any of these features are present on the proposed project site.
- 3) For proposed project sites with S1 and S2 Habitat Sensitivity Rankings or S1/S2 indicator species, prepare a site plan that demonstrates avoidance of S1 Habitats and S1 Habitat Sensitivity Indicators and/or minimization of impacts to S2 Habitat and S2 Habitat Sensitivity Indicators.
 - a. Maps must be detailed and clearly identify vegetation communities, sensitive species locations, and other sensitive resources. Maps must clearly identify the proposed development footprint including access roads and outbuildings. The maps must clearly identify any required development buffers or fuel modification zones particularly as they relate to S1 or S2 Habitat or Habitat Indicators.
- 4) Consult with County regarding the site plan and evaluate need to coordinate with the U.S. Fish and Wildlife Service (USFWS), California Department of Fish and Wildlife (CDFW); U.S. Army

Corps of Engineers (USACE), and Regional Water Quality Control Board (RWQCB), if the project would impact State or federal jurisdictional features.

- 5) The final Habitat Sensitivity Ranking, site-specific Biological Resources Assessment Report, and supporting documentation (including site plans that document S1 and S2 resource avoidance and incorporation of minimization measures into the development, if applicable) must be submitted as part of the development application package to support the County's application review process.

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ATTACHMENT 1

FIGURES

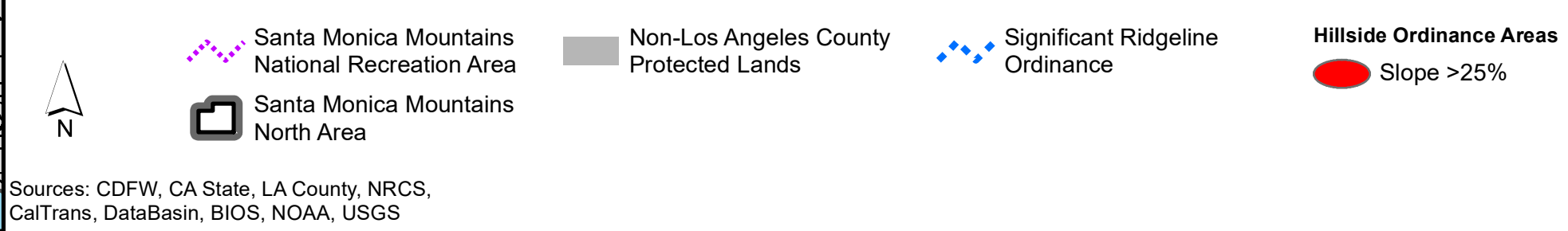
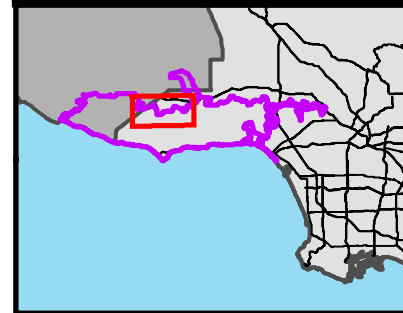
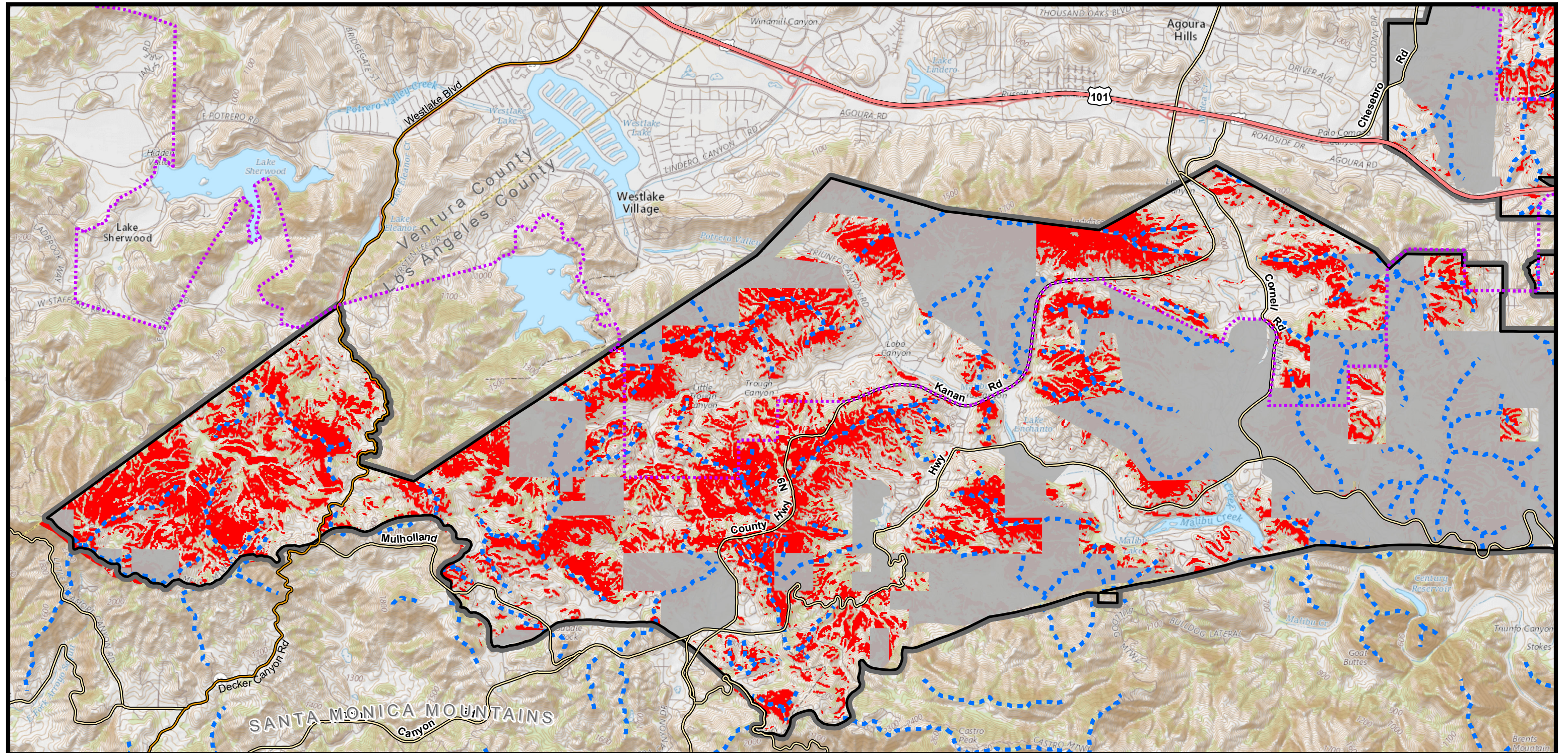
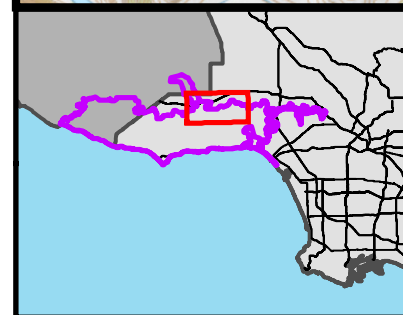
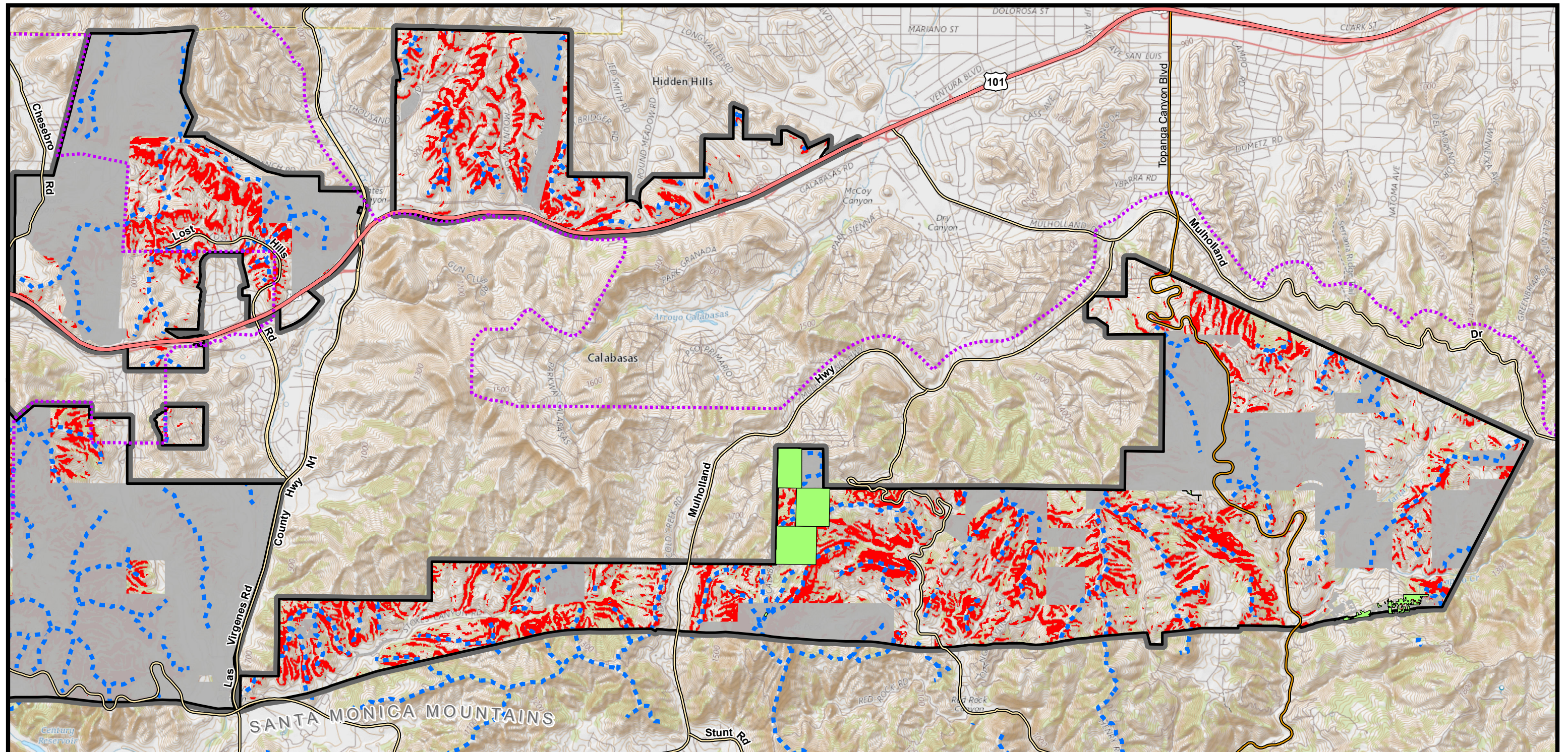


Figure 2a. Unincorporated County Lands and Designations





- Santa Monica Mountains National Recreation Area
 Santa Monica Mountains North Area

Sources: CDFW, CA State, LA County, NRCS, CalTrans, DataBasin, BIOS, NOAA, USGS

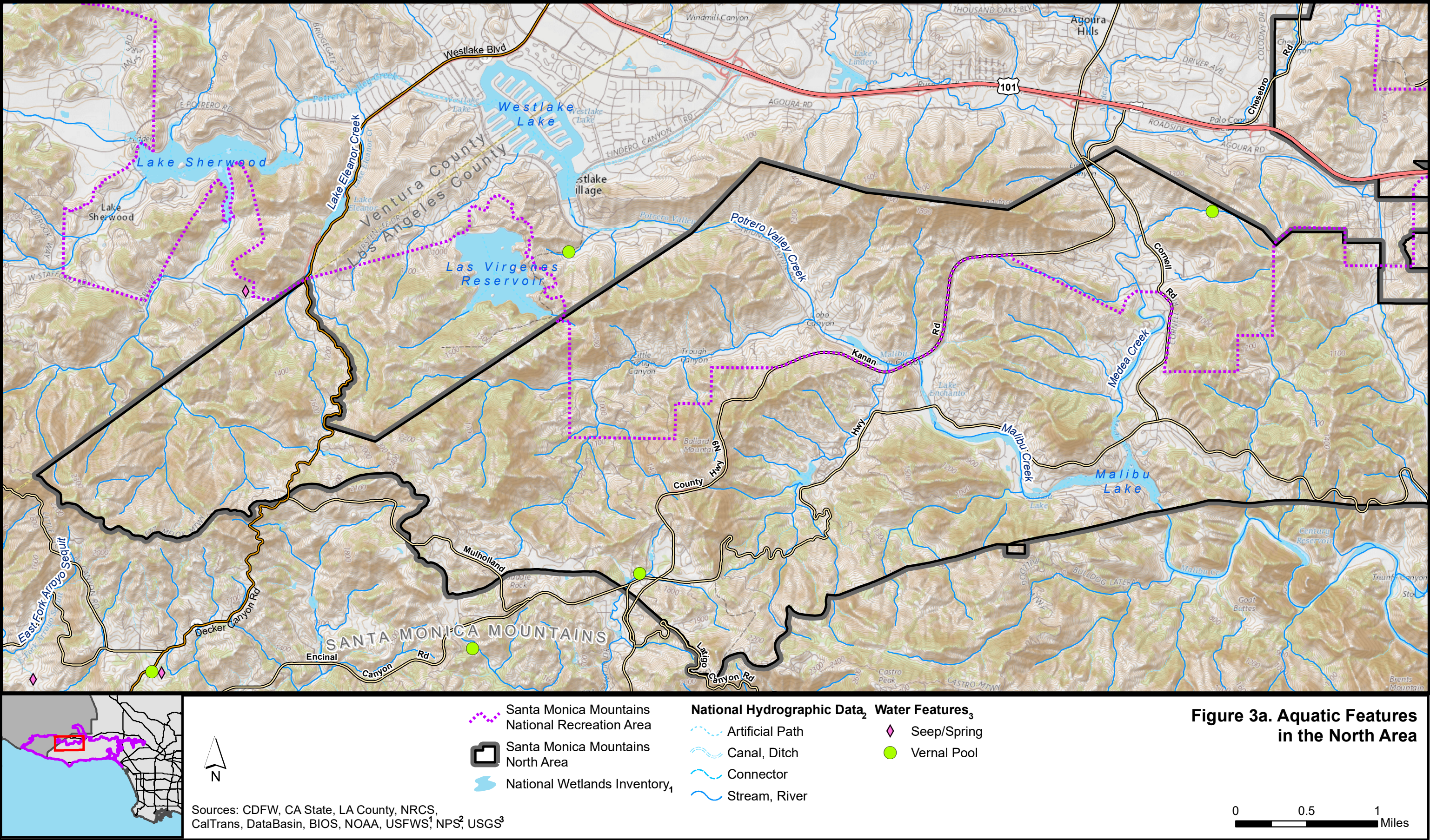
- Los Angeles County Protected Lands
 Non-Los Angeles County Protected Lands

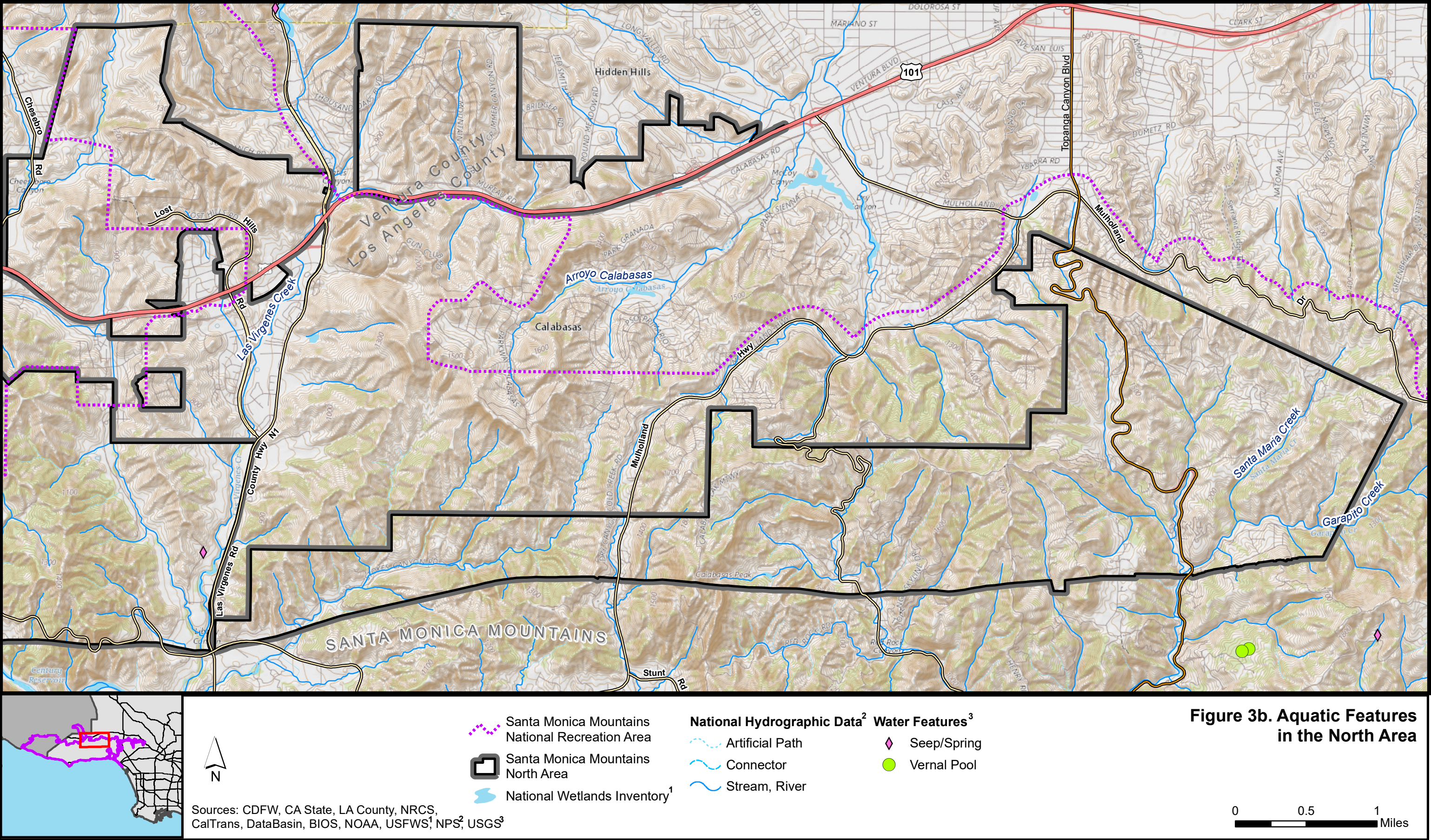
- Significant Ridgeline Ordinance

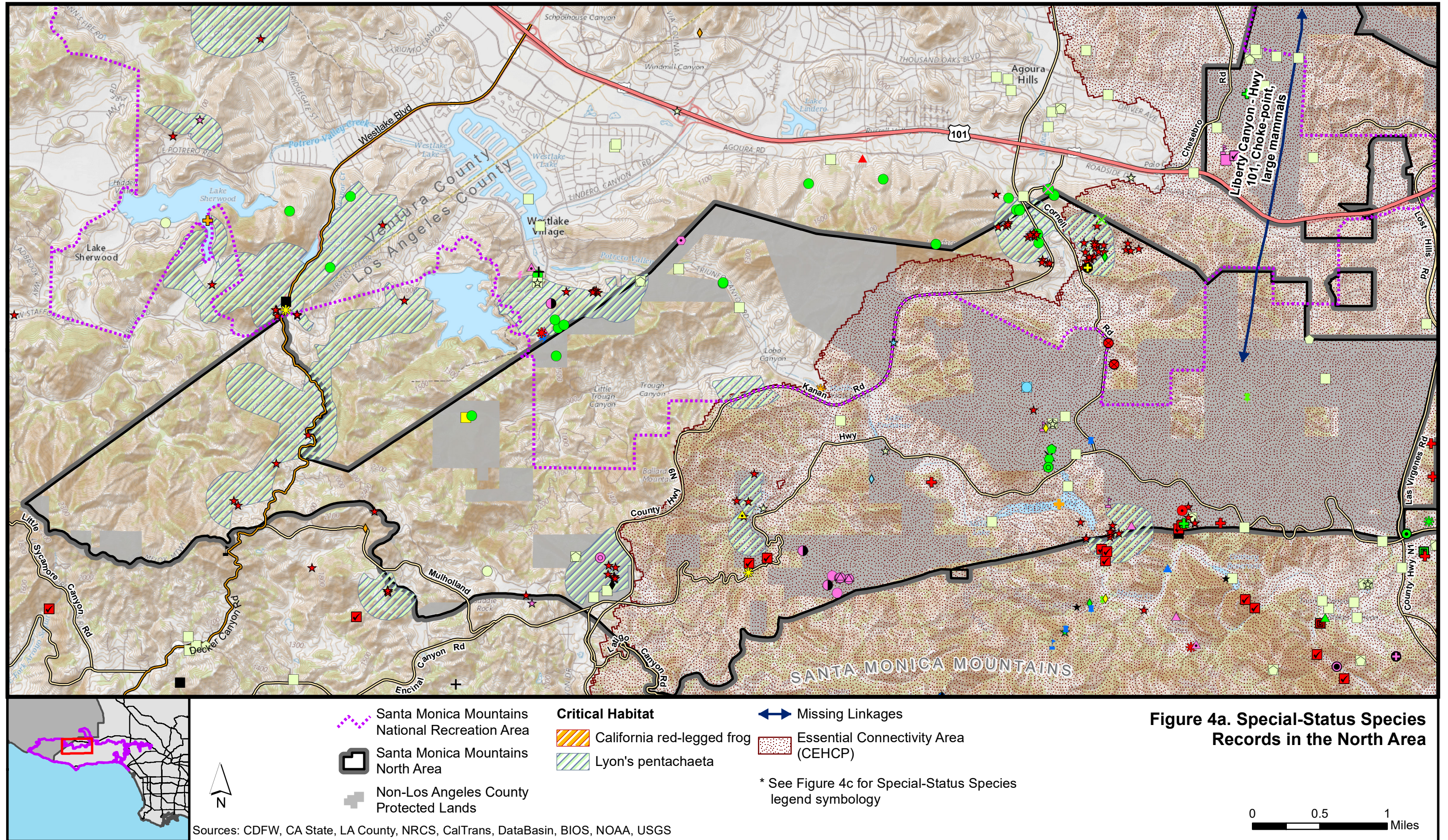
- Hillside Ordinance Areas**
 Slope >25%

Figure 2b. Unincorporated County Lands and Designations

0 0.5 1 Miles







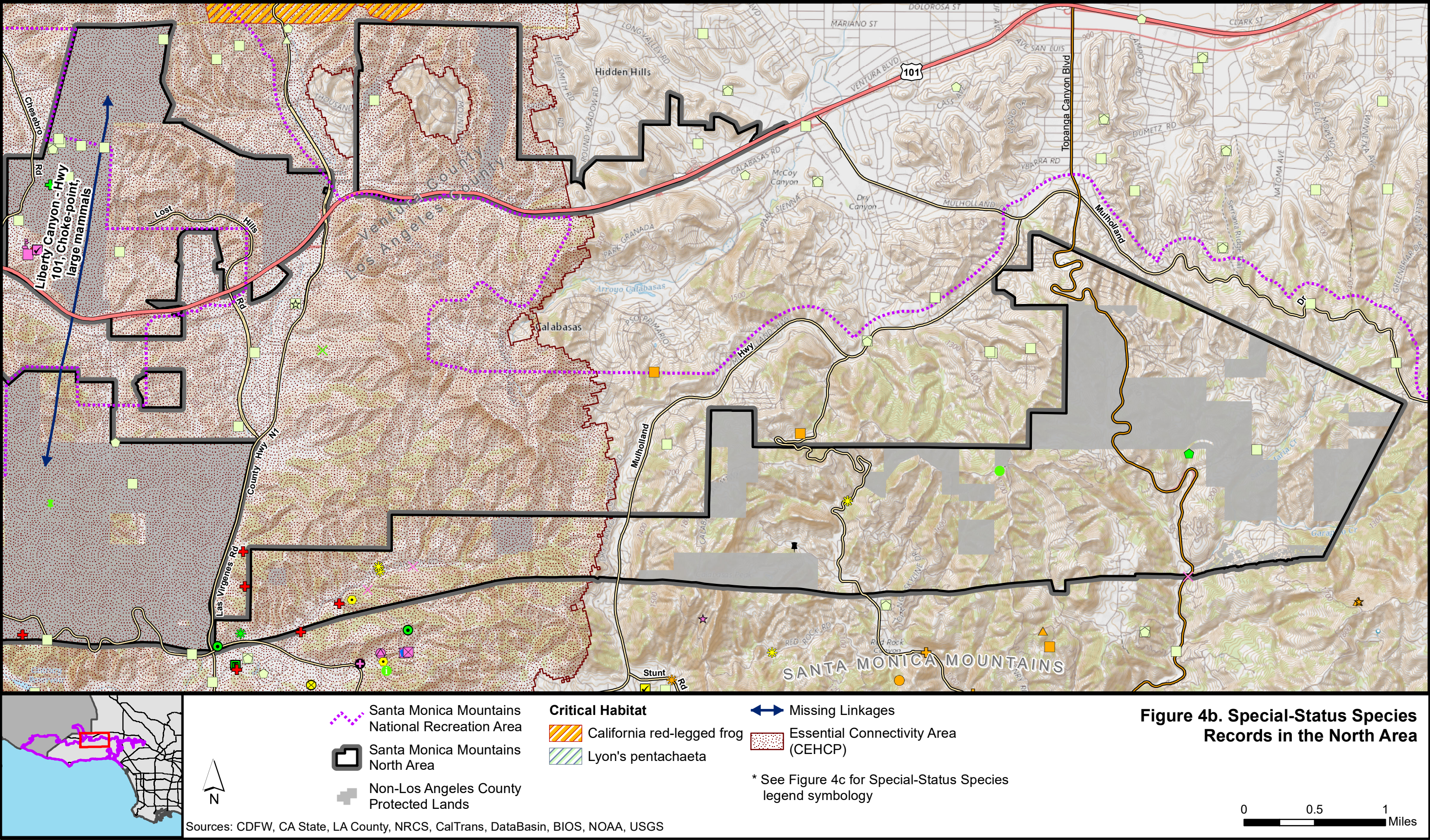


Figure 4c. Special Status Species Records in the North Area

Plants

● Agoura Hills dudleya	▲ June grass
■ Alaska piperia	● Kern dwarf brodiaea
▲ American licorice	★ Lyon's pentachaeta
● Basket rush	✚ Malibu baccharis
● Beardless wild rye	◆ Many flowered monkey flower
◆ Bigelow coreopsis	■ Marcuscent dudleya
★ Bigleaf maple	✱ Miner's lettuce
✚ Blochman's dudleya	● Monolopia
● Braunton's milk-vetch	■ Naked broom rape
⚡ Brewer's calandrinia	● Nuttall's nemacladus
✚ Brewer's ragwort	■ Oceanspray
♣ Bush interior live oak	▲ Ocellated humboldt lily
① California cloak fern	▲ Ojai navarretia
● California hedge parsley	★ Oreja de liebre
✕ California melic	● Parry's collinsia
✚ Camphor weed	◆ Parry's pussypaws
✱ Catalina mariposa lily	✚ Perennial wool star
■ Chaparral pea	■ Plummer's baccharis
✕ Chaparral ragwort	☀ Plummer's mariposa lily
▲ Chasmanthe	⊗ Povertyweed
● Cithara buckwheat	⊕ Pygmy leptosiphon
■ Cleveland's tobacco	● Rareflower heterocodon
● Coast barberry	● Round fruit sedge
▲ Common rupertia	■ Round leaved filaree
✚ Cream cups	● Rush
◆ Curvopod yellow cress	■ San Diego sedge
■ Deergrass	▲ Santa Cruz Island fringeopod
▲ Dolores campion	● Santa Monica Mountains dudleya
● Dunn's lobelia	★ Santa Susana tarplant
● Dwarf pepper grass	◆ Short lobed phacelia
✚ Early onion	✚ Sixweeks grass
✕ False indigo	✕ Slender mariposa lily
⚡ Fish's milkwort	✚ Slender pod jewelflower
♣ Fragrant pitcher sage	⚡ Small flowered lotus
✱ Hasse's vetch	✱ Small flowered morning glory
✓ Hawkweed	♣ Small-flowered fiddleneck
★ Indian hemp	■ Small-flowered microseris
● Indian tobacco	● Smooth western morning glory
	● Sneezeweed

* Bold Indicates Listed Species or Candidate for Listing

Refer to Attachment 2, Special-Status Species Potentially Occurring in the Santa Monica Mountains North Area, for scientific names

✕ Snouted monkey flower
■ Sonoran maiden fern
● Southern blue cup
● Southern mountain misery
● Splendid mariposa lily
● Summer holly
● Tidy tips
■ Triangular fruit sedge
▲ Valley sedge
● Venus looking glass
★ Water pimpernel
✱ Wedge leaved horkelia
♣ Western chain fern
♣ Western lance leaf aster
⚡ White fairy lantern
✚ White leaf monardella
◆ Wind poppy
♣ Wright's buckwheat

Amphibians & Reptiles

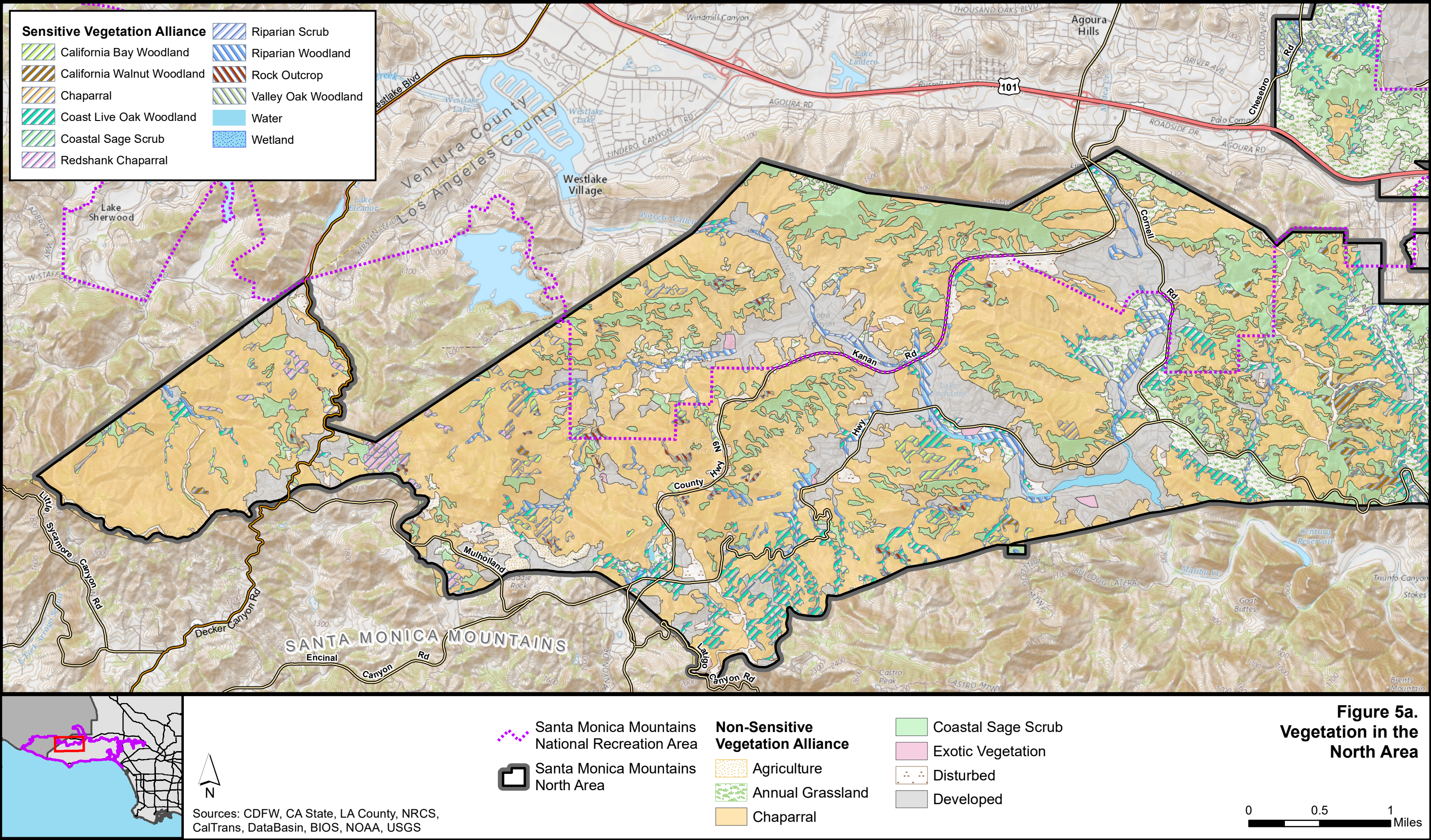
✚ Southern western pond turtle
● California red-sided garter snake
■ Coast horned lizard
★ Coast patch-nosed snake
▲ Coastal whiptail
✚ San Bernardino ringneck snake
▲ San Diego mountain kingsnake
◆ Southern California legless lizard
✱ Two-striped garter snake
✕ Yellow-bellied racer

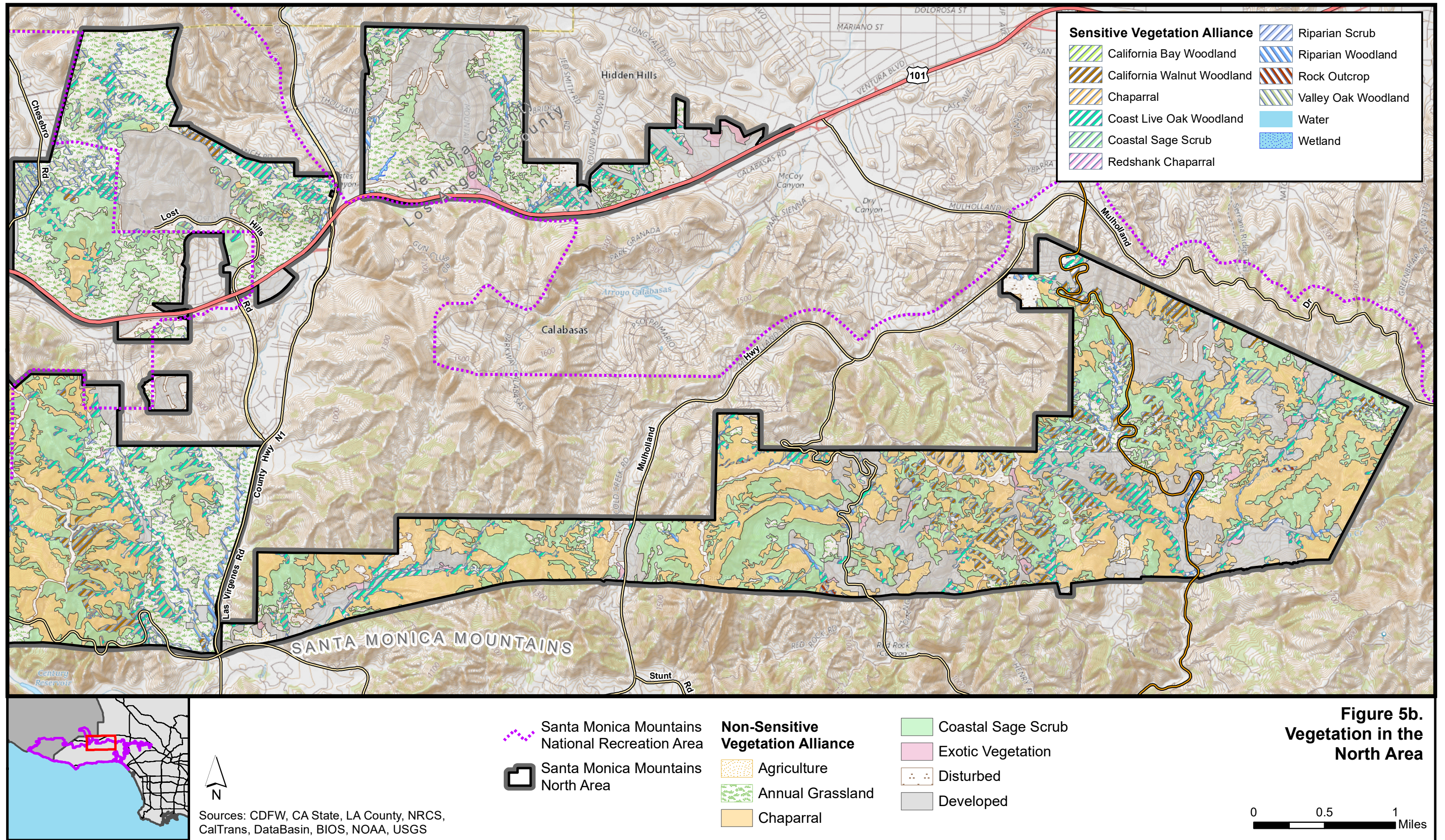
Birds

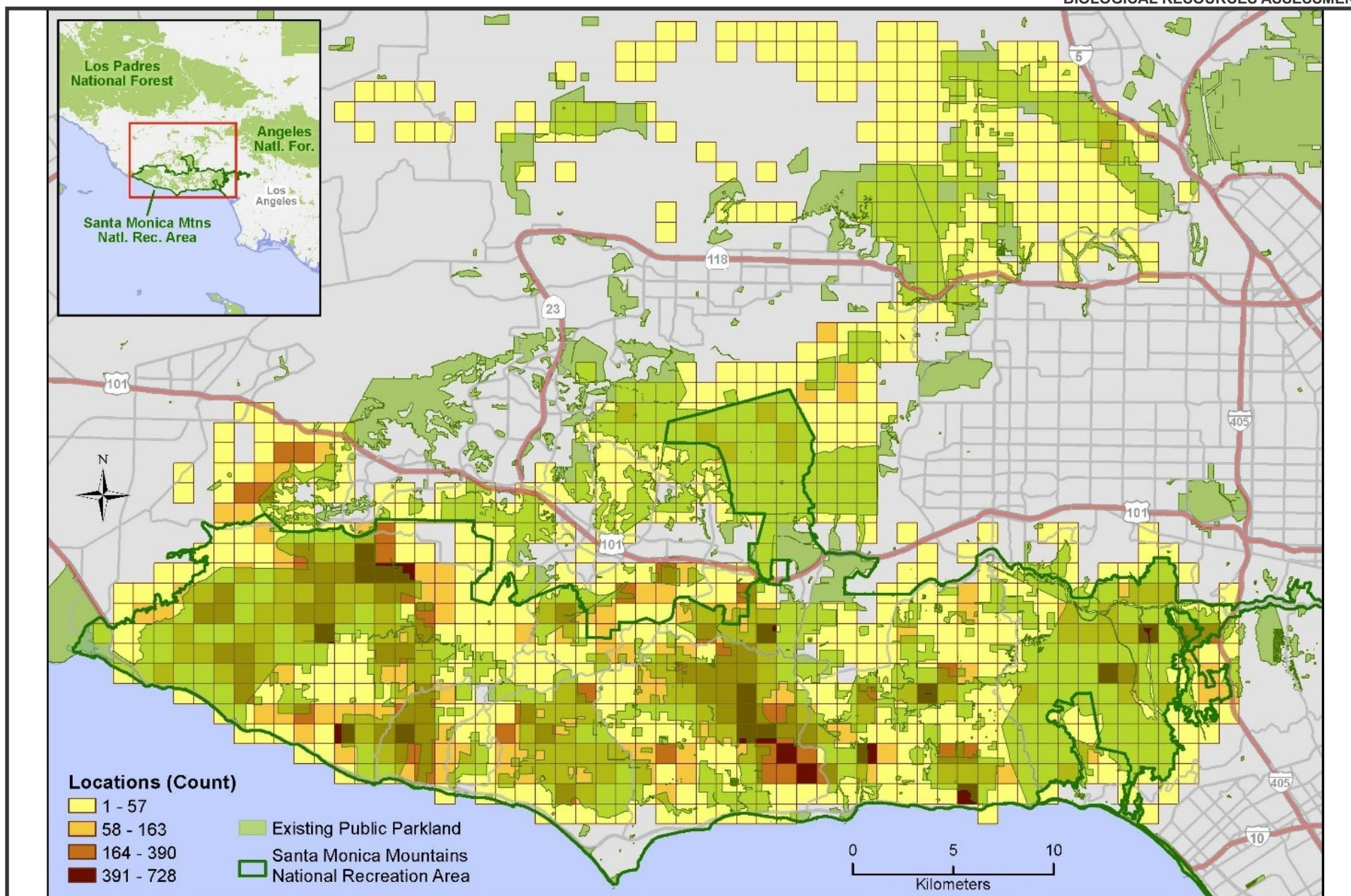
▲ Coastal California gnatcatcher
■ Cooper's hawk
● Sharp-shinned Hawk
● Tricolored blackbird
★ Unidentified hawk

Mammals

★ American badger
◆ Hoary bat
✚ Ringtail
▲ Western grey squirrel
■ Western mastiff bat
● Western red bat







Data sources: mountain lion locations, NRA boundary (NPS); Existing Parks - CPAD 1.7, September 2011 (GreenInfo Network, www.calands.org) & Property Database 2011 (SMMC/MRCA); Roads - StreetMap Pro 2007 (ESRI)

Description: Map showing number of telemetry locations per one kilometer grid cell for 15 radio-collared mountain lions (P1-P15) between 7/19/2002 and 4/12/2011.

Figure 6. Mountain Lion Telemetry Locations

Figure 7a Sensitivity Ranking in the North Area has been superseded by Figure 2 Biological Resources (Western Portion) of the North Area Plan in Appendix 1 of this EIR.

Figure 7b Sensitivity Ranking in the North Area has been superseded by Figure 2 Biological Resources (Eastern Portion) of the North Area Plan in Appendix 1 of this EIR.

ATTACHMENT 2

SPECIAL-STATUS SPECIES POTENTIALLY OCCURRING IN THE SANTA MONICA MOUNTAINS NORTH AREA

Special-Status Species Potentially Occurring in the Santa Monica Mountains North Area				
Scientific Name	Common Name	Status ¹	Habitat	Notes
VASCULAR PLANTS - Dicotyledons				
Apiaceae	Parsley Family			
<i>Sanicula bipinnata</i>	Poison sanicle	Locally uncommon	Slopes in valley grassland, foothill woodland habitats. Perennial herb, endemic to California, blooms Mar-Apr. Elevations of 65 to 6,500 feet.	Recorded at Paramount Ranch and Cornell (California).
<i>Yabea microcarpa</i>	California hedge parsley	Locally uncommon	Variety of upland habitats, occasionally wetlands. Annual herb that blooms Apr-Jun. Elevations of 40 to 6,100 feet.	Several records from North Area, including Paramount Ranch, Malibu Creek State Park, near Seminole Hot Springs (California).
Apocynaceae	Dogbane Family			
<i>Apocynum cannabinum</i>	Indian hemp	Locally uncommon	Coniferous forests, foothill woodland, chaparral, valley grasslands, wetland-riparian habitats. Perennial herb that blooms Jun-Aug. Elevations of 0 to 3,000 feet.	Malibu Creek State Park (California).
Asteraceae	Aster Family			
<i>Baccharis malibuensis</i>	Malibu baccharis	CRPR 1B.1	Chaparral, coastal sage scrub, cismontane woodland, and riparian woodland habitats. Perennial deciduous shrub that blooms in Aug. Known from fewer than 10 occurrences in the Santa Monica Mtns. Elevations of 500 to 1,000 feet.	Population recorded in 1991 near the west end of Malibu Lake is thought to have been extirpated by development. Current status of populations recorded in Stokes Canyon, King Gillette Ranch unknown (CNDDB).
<i>Baccharis plummerae</i>	Plummer's baccharis	CRPR 4.3	Rocky soils in chaparral, coastal scrub, cismontane woodland, and broadleaved upland forest habitats. Perennial deciduous shrub that blooms May-Oct. Elevations of 10 to 1,400 feet.	Recorded in the Coastal Zone, suitable habitat throughout in the North Area.
<i>Bidens laevis</i>	Bur marigold	Locally uncommon	Perennial herb that occurs in wetlands and blooms Aug-Sept. Elevations of 0 to 6,600 feet.	California records only one historic occurrence in the Santa Monica Mountains, Topanga Canyon south of the North Area.
<i>Chaenactis glabriuscula</i> var. <i>lanosa</i>	Pincushion flower	Locally uncommon	Open areas with loose sand, gravel; often coastal dunes. Annual herb that blooms Jan-Aug, elevations of 65 to 7,500 feet.	California records only one historic occurrence in the Santa Monica Mountains, along Ventura-Los Angeles County line near Lake Eleanor.
<i>Deinandra</i> (= <i>Hemizonia</i>) <i>minthornii</i>	Santa Susana tarplant	SR, CRPR 1B.2	Rocky soils in chaparral and coastal scrub habitats. Perennial deciduous shrub that blooms Jul-Nov. Elevations of 920 to 2,500 feet.	Calabasas Peak in the North Area, and elsewhere in Santa Monica Mountains (California).
<i>Ericameria arborescens</i>	Golden fleece	Locally uncommon	Chaparral, foothill woodlands often on serpentine soils. Shrub that blooms Aug-Sept. Elevations of 260 to 7,100 feet.	Limited suitable habitat in North Area.
<i>Ericameria parishii</i>	Parish's rabbitbrush	Locally uncommon	Chaparral. Shrub that blooms Jul-Oct. Elevations of 1,100 to 6,900 feet.	Several historic records in the Santa Monica Mountains east of the North Area (California).

Special-Status Species Potentially Occurring in the Santa Monica Mountains North Area				
Scientific Name	Common Name	Status ¹	Habitat	Notes
<i>Helenium puberulum</i>	Sneezeweed	Locally uncommon	Meadows in valley grassland, wetlands. Perennial herb that blooms Jun-Aug. Elevations of 0 to 6,300 feet.	Malibu Creek State Park, Topanga Cyn (California).
<i>Heterotheca sessiliflora</i> ssp. <i>fastigiata</i>	Camphor weed, Erect goldenaster	Locally uncommon	Variety of habitats in mtns of So. Calif. Perennial herb that blooms Mar-Dec. Elevations of 600 to 5,800 feet.	Two historic records in eastern Santa Monica Mountains east of North Area (California).
<i>Hieracium argutum</i>	Southern hawkweed	Locally uncommon	Closed-cone pine forests and oak woodlands. Perennial herb that blooms Jun-Oct. Elevations of 360 to 7,600 feet.	Recorded south of North Area (California); but suitable habitat occurs in oak woodlands of North Area.
<i>Iva axillaris</i> ssp. <i>robustior</i>	Povertyweed	Locally uncommon	Coastal salt marsh, alkali sink, wetlands. Perennial herb that blooms Apr-Oct. Elevations of 10 to 8,000 feet.	Malibu Creek State Park (California).
<i>Lasthenia coronaria</i>	Royal goldfields	Locally uncommon	Coastal sage scrub, valley grasslands, chaparral, sagebrush scrub. Annual herb that blooms Mar-May. Elevations of 50 to 4,500 feet.	Cheseboro Cyn Las Virgenes Ranch, Cornell (California).
<i>Lasthenia glabrata</i> ssp. <i>coulteri</i>	Coulter's goldfields	CRPR 1B.1	Marshes and swamps (coastal salt), playas, and vernal pools. Blooms Feb-Jun. Elevations of 0 to 4,000 feet.	Historic records south of North Area.
<i>Layia platyglossa</i>	Tidy tips	Locally uncommon	Variety of habitats including northern coastal scrub, yellow pine forest, foothill woodland, chaparral, and valley grassland. Annual herb that blooms Feb-May. Elevations of 0 to 5,600 feet.	Multiple records throughout North Area.
<i>Leptosyne bigelovii</i> (<i>Coreopsis bigelovii</i>)	Bigelow coreopsis	Locally uncommon	Creosote bush scrub, Joshua tree woodland, pinyon-juniper woodland, foothill woodland. Annual herb that blooms Feb-May. Elevations of 330 to 8,000 feet.	Triangle Ranch near Kanan Rd. and Conell Rd.
<i>Lessingia glandulifera</i>	Valley lessingia	Locally uncommon	Open areas to 5,500 feet; cismontane valleys, sandy soils, desert washes, pine forests. Annual herb that blooms May-Nov.	Possible in sandy soils in North Area.
<i>Malacothrix coulteri</i>	Snake's head	Locally uncommon	On slopes in creosote bush scrub, valley grassland, coastal sage scrub. Annual herb that blooms Mar-May. Elevations of 230 to 5,100 feet.	Possible in grasslands and coastal sage scrub of the North Area.
<i>Microseris douglasii</i> ssp. <i>tenella</i>	Short-scaled microseris, small-flowered microseris	Locally uncommon	Clay soils, grassland, often near serpentine pools outcrops or vernal pools. Annual herb that blooms Mar-May. Elevations below 3,600 feet.	Cornell (California).
<i>Monolopia lanceolata</i>	Monolopia	Locally uncommon	Slopes in valley grassland, chaparral, foothill woodland, and southern oak woodland. Annual herb that blooms Mar-May. Elevations of 360 to 4,900 feet.	Cheeseboro Cyn Cornell, several records east of Las Virgenes Rd and north/west of Mulholland Hwy in Calabasas (California).
<i>Packera breweri</i> (<i>Senecio breweri</i>)	Brewer's ragwort	Locally uncommon	Slopes in foothill woodland, yellow pine forest, chaparral. Perennial herb that blooms Apr-May. Elevations of 40 to 5,700 feet.	Cheeseboro Cyn Malibu Creek State Park and vicinity (California).
<i>Pentachaeta lyonii</i>	Lyon's pentachaeta	FE, SE, CRPR 1B.1	On rocky, clay soils in openings in chaparral, coastal sage scrub, and grasslands. Annual herb that blooms Feb-Aug. Elevations of 100 to 2,300 feet.	Multiple extant and extirpated populations in the central and western portions of the North Area.

Special-Status Species Potentially Occurring in the Santa Monica Mountains North Area				
Scientific Name	Common Name	Status ¹	Habitat	Notes
				The North Area overlaps 8 discrete designated critical habitat areas, but the species occurs widely and unpredictably on thin, often rocky, volcanic-derived soils.
<i>Pseudognaphalium stramineum</i> (<i>Gnaphalium stramineum</i>)	Cottonbatting plant	Locally uncommon	Yellow pine forest, foothill woodland, chaparral, valley grassland, wetland-riparian habitats. Perennial herb that blooms May-Oct. Elevations below 7,600 feet.	Possible in North Area.
<i>Senecio aphanactis</i>	Chaparral ragwort, California groundsel	CRPR 2B.2	Foothill woodland, northern coastal scrub, coastal sage scrub. Annual herb that blooms Jan-Apr. Elevations of 50 to 3,900 feet.	Historic record along Ventura-Los Angeles County line east of Lake Eleanor (California).
<i>Solidago confinis</i>	Southern goldenrod, Oreja de liebre	Locally uncommon	Along streambanks, occasionally in uplands. Coastal sage scrub, chaparral, yellow pine forest, wetland-riparian. Perennial herb that blooms Apr-Oct. Elevations below 8,200 feet.	Possible in or near streambanks in North Area.
<i>Symphyotrichum lanceolatum</i> var. <i>hesperium</i>	Western lance leaf aster	Locally uncommon	Wetlands in southern oak woodland, chaparral, sagebrush scrub, riparian habitats. Perennial herb that blooms Jul-Aug. Elevations of 130 to 7,700 feet.	Northeast of Malibu Lake (California).
Berberidaceae	Barberry Family			
<i>Berberis pinnata</i> ssp. <i>pinnata</i>	Coast barberry	Locally uncommon	Rocky slopes in coniferous forest, oak woodland at elevations from 0 to 3,900 feet. Shrub that blooms Feb-May.	Historic records from vicinity of Seminole Hot Springs and Old Topanga Cyn (California).
Boraginaceae	Borage Family			
<i>Amsinckia menziesii</i> var. <i>menziesii</i>	Small-flowered fiddleneck	Locally uncommon	Valley grassland at elevations between 30 and 7,200 feet. Annual herb that blooms Mar-May.	Multiple records in North Area (California).
<i>Pectocarya linearis</i> ssp. <i>ferocula</i>	Slender comb seed	Locally uncommon	Coastal sage scrub, chaparral, valley grassland, foothill woodland. Annual herb that blooms Mar-May. Elevations of 25 to 5,900 feet.	Vicinity of Malibu Creek State Park (California).
<i>Phacelia brachyloba</i>	Short-lobed phacelia	Locally uncommon	Disturbed soils in chaparral, coastal sage scrub. Annual herb that blooms Apr-May. Elevations of 360 to 6,900 feet.	Multiple records in and near North Area (California).
<i>Phacelia ramosissima</i> var. <i>austrolitoralis</i>	South coast branching phacelia	CRPR 3.2	Sandy, sometimes rocky soils in chaparral, coastal dunes, coastal scrub, and coastal salt marshes and swamps. Perennial herb that blooms Mar-Aug. Elevations of 15 to 1,000 feet.	Possible in North Area, but recorded primarily at the coast (California).
<i>Plagiobothrys collinus</i> var. <i>californicus</i>	California popcorn flower	Locally uncommon	Valley grassland, coastal sage scrub. Annual herb that blooms Feb-May. Elevations of 30 to 5,600 feet.	Suitable habitat throughout North Area,
<i>Plagiobothrys collinus</i> var. <i>fulvescens</i>	Rusty haired popcorn flower	Locally uncommon	Chaparral, coniferous forest at elevations between 2,000 and 6,600 feet. Annual herb that blooms Mar-Jun.	Possible in North Area.
<i>Plagiobothrys tenellus</i>	Slender popcorn flower	Locally uncommon	Chaparral, foothill woodland, yellow pine forest, wetland-riparian at elevations of 60	Possible in North Area.

Special-Status Species Potentially Occurring in the Santa Monica Mountains North Area				
Scientific Name	Common Name	Status ¹	Habitat	Notes
			to 6,700 feet. Annual herb that blooms Mar-May.	
Brassicaceae	Mustard Family			
<i>Caulanthus coulteri</i>	Coulter's jewel flower	Locally uncommon	Slopes in valley grassland, chaparral, foothill woodland. Annual herb that blooms Mar-Jul. Elevations of 420 to 6,000 feet.	Historic record ½ mi west of Topanga Summit (Calflora).
<i>Caulanthus heterophyllus</i> var. <i>heterophyllus</i> or <i>Caulanthus heterophyllus</i> var. <i>pseudosimulans</i>	Slender pod jewelflower	Locally uncommon	Disturbed places in coastal sage scrub, chaparral. Annual herb that blooms Mar-May. Elevations of 60 to 5,400 feet.	Malibu Creek State Park, Cornell (Calflora).
<i>Draba cuneifolia</i>	Wedge leaved draba	Locally uncommon	Pinyon-juniper woodland, chaparral, coastal sage scrub, creosote bush scrub. Annual herb that blooms Jan-May. Elevations of 100 to 8,000 feet.	Possible in North Area.
<i>Lepidium latipes</i>	Dwarf pepper grass	Locally uncommon	Wetlands in valley grassland. Annual herb that blooms Mar-May. Elevations below 8,900 feet.	Historic record at Cheeseboro Cyn (Calflora).
<i>Rorippa curvisiliqua</i>	Curvepod yellow cress	Locally uncommon	Wetlands. Annual or perennial herb that blooms May-Aug. Elevations below 10,800 feet.	Several historic records in North Area (Calflora).
<i>Stanleya pinnata</i>	Prince's plume	Locally uncommon	Creosote bush scrub, Joshua tree woodland, pinyon-juniper woodland. Perennial herb or shrub that blooms Apr-Sept. Elevations of 200 to 8,800 feet.	Several historic records from Calabasas near North Area (Calflora).
<i>Thysanocarpus conchuliferus</i>	Santa Cruz Island fringe-pod	FE, CRPR 1B.2	Rocky soils in chaparral, cismontane woodland. Annual herb that blooms Mar-May. Known from fewer than 15 occurrences. Elevations of 150 to 2,200 feet.	Malibu Creek State Park and just outside North Area in Triunfo Creek Park.
Campanulaceae	Bellflower Family			
<i>Githopsis diffusa</i> ssp. <i>diffusa</i>	Southern blue cup	Locally uncommon	Wetland areas in chaparral. Annual herb that blooms Apr-Jun. Elevations of 880 to 5,000 feet.	Possible in North Area.
<i>Heterocodon rariflorum</i>	Rareflower heterocodon	Locally uncommon	Yellow pine forest, red fir forest, lodgepole forest, subalpine forest, foothill woodland, chaparral, valley grassland, (many plant communities), wetland-riparian. Annual herb that blooms May-Jul. Elevations of 100 to 7,800 feet.	Possible in North Area.
<i>Lobelia dunnii</i> var. <i>serrata</i>	Dunn's lobelia	Locally uncommon	Wetlands, occasionally uplands in canyons within coastal sage scrub, chaparral. Perennial herb that blooms Jul-Oct. Elevations of 700 to 4,600 feet.	Nearest records along coast (Calflora), but could occur in North Area.
<i>Nemacladus ramosissimus</i>	Nuttall's nemacladus	Locally uncommon	Chaparral, coastal sage scrub. Annual herb that blooms Apr-May. Elevations of 400 to 5,000 feet.	Several historic records in and near North Area (Calflora).
<i>Triodanis biflora</i>	Venus looking glass	Locally uncommon	Disturbed areas in variety of habitats including chaparral, valley grassland, foothill woodland, lodgepole forest, red fir forest, yellow pine forest. Annual herb that	Nearest record is along coast (Calflora), but could occur in North Area.

Special-Status Species Potentially Occurring in the Santa Monica Mountains North Area				
Scientific Name	Common Name	Status ¹	Habitat	Notes
			blooms Apr-Jun. Elevations of 50 to 4,800 feet.	
Caprifoliaceae	Honeysuckle Family			
<i>Lonicera hispidula</i>	Pink honeysuckle	Locally uncommon	Streambanks and slopes in mixed evergreen forest, redwood forest, Douglas-fir forest, foothill woodland. Vine or shrub that blooms Apr-Jul. Elevations below 5,300 feet.	Malibu Creek State Park (California) and south of North Area.
Caryophyllaceae	Pink Family			
<i>Loeflingia squarrosa</i>	Spreading pygmyleaf	Locally uncommon	Coastal sage scrub, chaparral, valley grassland. Annual herb that blooms Apr-May. Elevations of 200 to 4,800 feet.	Liberty Cyn just north of U.S. 101 (California).
<i>Silene verecunda</i>	Dolores campion	Locally uncommon	Slopes in coastal strand, northern coastal scrub. Annual herb that blooms Mar-Jun. Elevations of 50 to 11,900 feet.	Historic record south of North Area (California).
Chenopodiaceae	Chenopod Family			
<i>Atriplex serenana</i> var. <i>davidsonii</i>	Davidson's saltscale	CRPR 1B.2	Coastal bluff scrub, coastal scrub in alkaline soil. Blooms Apr-Oct. Elevations of 10 to 820 feet.	Known from King Gillette Ranch just south of North Area.
Convolvulaceae	Morning Glory Family			
<i>Calystegia collina</i> ssp. <i>venusta</i>	South Coast Range morning-glory, Parry's pussypaws	CRPR 4.3, Locally uncommon	Serpentine or sedimentary soils in chaparral, cismontane woodland, and grassland habitats. Blooms Apr-Jun. Elevations of 1,400 to 4,900 feet.	Known from volcanic-derived soils in Malibu Lake/Paramount Ranch area.
<i>Calystegia purpurata</i> ssp. <i>purpurata</i>	Smooth western morning glory	Locally uncommon	Chaparral, northern coastal scrub. Perennial herb that blooms Apr-Sept. Elevations below 2,800 feet.	Hennesy Property near Seminole Hot Springs (California).
<i>Convolvulus simulans</i>	Small-flowered morning glory	CRPR 4.2	Seeps, serpentine soils in valley grassland, northern coastal scrub, coastal sage scrub. Annual herb that blooms Mar-Jul. Elevations of 30 to 2,800 feet.	Chesebro Rd. just north of U.S. 101 (California).
<i>Dichondra occidentalis</i>	Western dichondra	CRPR 4.2	Chaparral, valley grassland, foothill woodland, northern coastal scrub, coastal sage scrub. Perennial (rhizomatous) herb that blooms Mar-Jul. Elevations of 10 to 2,100 feet.	Nearest records along coast (California), but could occur in North Area.
Crassulaceae	Stonecrop Family			
<i>Dudleya blochmaniae</i> ssp. <i>blochmaniae</i>	Blochman's dudleya	CRPR 1B.1	Rocky, often clay or serpentine soils in coastal bluff scrub, chaparral, coastal sage scrub, and valley and foothill grassland habitats. Blooms Apr-Jun. Elevations of 15 to 1,480 feet.	Recorded outside of North Area at Point Dume, Chatsworth Reservoir, and near Malibu Beach.
<i>Dudleya cymosa</i> ssp. <i>agouensis</i>	Agoura Hills dudleya	FT, CRPR 1B.2	Rocky, volcanic outcrops in chaparral and cismontane woodlands. Known only from	Populations at upper end and central portion of Triunfo Canyon, along Kanan Road and

Special-Status Species Potentially Occurring in the Santa Monica Mountains North Area				
Scientific Name	Common Name	Status ¹	Habitat	Notes
			the western Santa Monica Mtns Blooms May-Jun. Elevations of 650 to 1,640 feet.	Cornell Road south of Agoura Hills, and NW side of Mulholland Hwy about 1 mile SW of Seminole Hot Springs.
<i>Dudleya cymosa</i> ssp. <i>marcescens</i>	Marcescent dudleya	FT, SR, CRPR 1B.2	Volcanic, rocky soils in chaparral. Blooms Apr-Jul. Known from fewer than 10 occurrences in the Santa Monica Mtns Elevations of 500 to 1,700 feet.	Recorded near Lake Malibu spillway, and in Malibu Creek State Park on the border of the Plan Area.
<i>Dudleya cymosa</i> ssp. <i>ovatifolia</i>	Santa Monica Mountains dudleya	FT, CRPR 1B.1	Volcanic or sedimentary rock outcrops in chaparral and coastal scrub habitats. Blooms Mar-Jun. Elevations of 490 to 5,500 feet.	Recorded at several locations south of the Plan Area.
<i>Dudleya multicaulis</i>	Many-stemmed dudleya	CRPR 1B.2	Often clay soils in chaparral, coastal scrub, and grassland habitats. Blooms Apr-Jul. Elevations of 50 to 2,600 feet.	Historic record east of Plan Area near Chatsworth Reservoir in Simi Hills.
Ericaceae	Heath Family			
<i>Comarostaphylis diversifolia</i> ssp. <i>planifolia</i>	Summer holly	Locally uncommon	Dry slopes in coastal chaparral. Shrub that blooms Apr-Jun. Elevations of 230 to 2,300 feet.	Several records in Santa Monica Mtns south of North Area (California).
Fabaceae	Legume Family, Pea Family			
<i>Acmispon micranthus</i> (<i>Lotus hamatus</i>)	Small-flowered lotus	Locally uncommon	Coastal sage scrub, chaparral. Annual herb that blooms Mar-Jun. Elevations of 10 to 4,200 feet.	Cornell (California).
<i>Amorpha californica</i>	False indigo	Locally uncommon	Slopes in yellow pine forest, chaparral, mixed evergreen forest, northern oak woodland. Shrub that blooms Apr-Jul. Elevations of 40 to 8,500 feet.	Several records in North Area and vicinity (California).
<i>Astragalus brauntonii</i>	Braunton's milk-vetch	FE, CRPR 1B.1	Recently burned or disturbed areas usually on sandstone soils with carbonate layers in chaparral, coastal scrub, and valley and foothill grassland habitats. Blooms Jan-Aug. Elevations of 10 to 2,100 feet.	Historically recorded in Topanga Canyon area (possibly extirpated) and known also from locations in the Coastal Zone and the Simi Hills, including in largely urbanized areas. Only emerges following fire, so presence is difficult to confirm until conditions are favorable for germination.
<i>Glycyrrhiza lepidota</i>	American licorice	Locally uncommon	Disturbed soils in yellow pine forest, red fir forest, lodgepole forest, subalpine forest, foothill woodland, chaparral, valley grassland, (many plant communities), wetland-riparian. Perennial herb that blooms Jun-Aug. Elevations below 7,600 feet.	Possible in North Area.
<i>Pickeringia montana</i> var. <i>montana</i>	Chaparral pea	CRPR 4.3	Gabbroic, granitic, clay soils in chaparral habitats.	Recorded in the Coastal Zone, possible in the North Area.
<i>Rupertia physodes</i>	Common rupertia, California tea	Locally uncommon	Brush and wooded areas below 7,500 feet, many cismontane plant communities from San Bernardino and Orange Cos. North. Perennial herb that blooms May-Jul.	Malibu Creek State Park, historic record in Stokes Cyn (California).

Special-Status Species Potentially Occurring in the Santa Monica Mountains North Area				
Scientific Name	Common Name	Status ¹	Habitat	Notes
<i>Trifolium depauperatum</i> var. <i>truncatum</i>	Dwarf sack clover	Locally uncommon	Grassy flats, disturbed slopes, openings in woodlands. Annual herb that blooms Feb-May. Elevations below 2,600 feet.	Possible in North Area.
<i>Vicia hassei</i>	Hasse's vetch	Locally uncommon	Variety of coastal and inland habitats. Vine that blooms Mar-May. Elevations of 30 to 3,700 feet.	Lobo Cyn Rd near Triunfo Cyn Rd and Kanan Rd (California).
<i>Vicia ludoviciana</i>	Louisiana vetch	Locally uncommon	Variety of upland habitats. Annual herb that blooms Mar-Jun. Elevations of 30 to 4,100 feet.	Malibu Creek State Park (California)
Fagaceae	Oak Family			
<i>Quercus wislizeni</i> var. <i>frutescens</i>	Bush interior live oak	Locally uncommon	Tree or shrub that grows in canyons, slopes, and valleys, at elevations from 1,000 to 6600 feet.	Several records south of North Area (California).
Gentianaceae	Gentian Family			
<i>Zeltnera exaltata</i> (<i>Centaurium exaltatum</i>)	Cancha lagua	Locally uncommon	Coastal sage scrub, chaparral, creosote bush scrub, wetland-riparian. Annual herb that blooms May-Aug. Elevations of 360 to 5,300 feet.	Possible in North Area.
Geraniaceae	Geranium Family			
<i>California macrophylla</i>	Round-leaved filaree	CRPR 1B.2	Clay soils in cismontane woodland, grassland habitats. Annual herb that blooms Mar-May. Elevations of 50 to 4,000 feet.	Liberty Canyon area, including Chesebro/Fran Pavley Meadow.
Juglandaceae	Walnut Family			
<i>Juglans californica</i>	Southern California black walnut	CRPR 4.2	Southern oak woodland, wetland-riparian. Tree that blooms Mar-Jun. Elevations of 15 to 5,900 feet.	Multiple records throughout North Area (California).
Lamiaceae	Mint Family			
<i>Clinopodium douglasii</i> (<i>Satureja douglasii</i>)	Yerba buena	Locally uncommon	Northern coastal scrub, closed-cone pine forest, redwood forest, chaparral, mixed evergreen forest. Perennial herb that blooms May-Jul. Elevations below 3,300 feet.	Possible in North Area, but may be south of current range.
<i>Lepechinia fragrans</i>	Fragrant pitcher sage	CRPR 4.2	Chaparral habitats. Perennial shrub that blooms Mar-Oct. Elevations of 60 to 4,300 feet.	Recorded just outside of the Plan Area in Decker Cyn.
<i>Monardella breweri</i> ssp. <i>lanceolata</i> (<i>Monardella lanceolata</i>)	Mustang mint	Locally uncommon	Locally common in dry places and open, rocky often disturbed sites up to 8,000 feet in chaparral and woodland. Annual herb that blooms from May-Oct.	Historic record from Stokes Cyn, Topanga State Park (California).
<i>Monardella hypoleuca</i> ssp. <i>hypoleuca</i>	White-veined monardella, white leaf monardella	CRPR 1B.3	Chaparral, cismontane woodland. Blooms Apr-Dec. Elevations of 160 to 5,000 feet.	Historic collection from the Topanga Canyon area. Also known from Stunt Ranch, Santa Ynez Cyn outside of North Area.
Montiaceae	Miner's Lettuce Family			
<i>Calandrinia breweri</i>	Brewer's calandrinia	CRPR 4.2	On disturbed sites and burned areas with sandy or loamy soils in chaparral and coastal sage scrub habitats. Blooms Mar-Jun, possibly as early as Jan. Elevations of 30 to 4,000 feet.	Along Mulholland Hwy north of Castro Crest (J. Decruyenaere). Extremely variable in occurrence, typically post-fire only.

Special-Status Species Potentially Occurring in the Santa Monica Mountains North Area				
Scientific Name	Common Name	Status ¹	Habitat	Notes
<i>Claytonia exigua</i> ssp. <i>exigua</i>	Serpentine spring beauty	Locally uncommon	Serpentine soils in foothill woodland, chaparral, valley grassland, mixed evergreen forest, yellow pine forest. Annual herb that blooms Feb-May. Elevations of 30 to 6,900 feet.	Along Ventura-Los Angeles County line near Lake Eleanor (California).
<i>Lewisia rediviva</i>	Bitterroot	Locally uncommon	Slopes (often on serpentine soils) in yellow pine forest, sagebrush scrub, foothill woodland, mixed evergreen forest, pinyon-juniper woodland. Perennial herb that blooms May-Jun. Elevations of 460 to 9,700 feet.	Historic record along Ventura-Los Angeles County line near Lake Eleanor (California).
Onagraceae	Evening Primrose Family			
<i>Epilobium campestre</i> (<i>Epilobium pygmaeum</i>)	Smooth boisduvalia	Locally uncommon	Wetlands. Annual herb that blooms Jun-Aug. Elevations below 7,100 feet.	Possible in North Area.
Orobanchaceae	Broomrape Family			
<i>Orobanche californica</i>	California broomrape	Locally uncommon	Coastal strand, northern coastal scrub, sagebrush scrub, yellow pine forest, red fir forest, pinyon-juniper woodland. Parasitic perennial herb that blooms May-Aug. Elevations below 9,200.	Possible in North Area.
<i>Orobanche fasciculata</i>	Clustered broom rape	Locally uncommon	Variety of habitats including sagebrush scrub, yellow pine forest, red fir forest, lodgepole forest, subalpine forest, pinyon-juniper woodland. Parasitic perennial herb that blooms Mar-Aug. Elevations of 30 to 10,300 feet.	Cornell (California).
<i>Orobanche uniflora</i>	Naked broom rape	Locally uncommon	Woodland areas. Parasitic perennial herb that blooms Apr-Jul. Elevations of 130 to 9,500 feet.	Malibu Creek State Park (California).
Papaveraceae	Poppy Family			
<i>Meconella denticulata</i>	Small flowered meconella	Locally uncommon	Chaparral, coastal sage scrub. Annual herb that blooms Mar-Jun. Elevations of 450 to 4,100 feet.	Several (mostly historic) records in and near North Area (California).
<i>Papaver heterophyllum</i> (<i>Stylomecon heterophylla</i>)	Wind poppy	Locally uncommon	Slopes in chaparral, valley grassland, foothill woodland, southern oak woodland, northern oak woodland. Annual herb that blooms Apr-May. Elevations of 15 to 5,400 feet.	Several (mostly historic) records in North Area (California).
<i>Platystemon californicus</i>	Cream cups	Locally uncommon	Coastal sage scrub, northern oak woodland, southern oak woodland, foothill woodland, chaparral, valley grassland; often on serpentine soils. Annual herb that blooms Feb-May. Elevations below 6,200 feet.	Triunfo Creek Park, Malibu Creek State Park (California).
Phrymaceae	Lopseed Family			
<i>Mimulus floribundus</i>	Many flowered monkey flower	Locally uncommon	Wetlands. Annual herb that blooms Apr-Jul. Elevations of 30 to 10,400 feet.	Mulholland Hwy at Rocky Oaks Park (California).
<i>Mimulus pilosus</i>	Snouted monkey flower	Locally uncommon	Usually in wetlands in a variety of habitats including yellow pine forest, red fir forest, lodgepole forest, subalpine forest, foothill woodland, chaparral, valley grassland.	Malibu Creek State Park, several records south of North Area (California).

Special-Status Species Potentially Occurring in the Santa Monica Mountains North Area				
Scientific Name	Common Name	Status ¹	Habitat	Notes
			Annual herb that blooms Apr-Oct. Elevations of 30 to 9,500 feet.	
Plantaginaceae	Plantain Family			
<i>Collinsia parryi</i>	Parry's collinsia	Locally uncommon	Chaparral. Annual herb that blooms Apr-May. Elevations of 300 to 5,800 feet.	Historic records from Stokes Cyn, vicinity of Mulholland Hwy and Old Topanga Rd (California)
Polemoniaceae	Phlox Family			
<i>Eriastrum densifolium</i> ssp. <i>elongatum</i>	Perennial wool star	Locally uncommon	Coastal strand, coastal sage scrub, Joshua tree woodland, pinyon-juniper woodland, chaparral, yellow pine forest, red fir forest. Perennial herb that blooms May-Sept. Elevations of 200 to 8,600 feet.	Possible in North Area
<i>Eriastrum filifolium</i>	Lavender eriastrum	Locally uncommon	Coastal sage scrub, chaparral. Annual herb that blooms Apr-Jul. Elevations of 40 to 6,600 feet.	Historic records from Century Ranch/Malibu Creek State Park (California)
<i>Leptosiphon ciliatus</i>	Whiskerbrush	Locally uncommon	Variety of habitats including yellow pine forest, red fir forest, lodgepole forest, subalpine forest, foothill woodland, chaparral, valley grassland. Annual herb that blooms Apr-Jun. Elevations of 230 to 10,400 feet.	Possible in North Area
<i>Navarretia atractyloides</i>	Holly leaf navarretia	Locally uncommon	Many plant communities in dry places to 2,000 feet, coastal sage scrub, chaparral, widely distributed. Annual herb that blooms May-Jun.	Possible in North Area
<i>Navarretia ojaiensis</i>	Ojai navarretia	CRPR 1B.1	Openings in chaparral, coastal scrub, grassland habitats. Annual herb that blooms May-Jul. Elevations of 900 to 2,000 feet.	Historic record from near Malibu Lake. Also recorded in La Sierra Canyon, Cheeseboro Meadow, and scattered occurrences south of Agoura Rd between Kanan Rd and Lindero Cyn Rd. Remains one of the rarest plants in the Santa Monica Mountains.
Polygalaceae	Milkwort Family			
<i>Polygala cornuta</i> var. <i>fishiae</i>	Fish's milkwort	CRPR 4.3	Chaparral, cismontane woodland, riparian woodland. Perennial deciduous shrub that blooms May-Aug. Elevations of 300 to 3,300 feet.	Present sporadically along the base of the north side of Ladyface Mtn and at King Gillette Ranch (California); also historic occurrences in Triunfo Cyn and Malibu Creek State Park. Additional records south of North Area in Coastal Zone.
Polygonaceae	Buckwheat Family			
<i>Chorizanthe parryi</i> var. <i>fernandina</i>	San Fernando Valley spineflower	Proposed FT, SE, CRPR 1B.1	Sandy soils in coastal scrub, grassland habitats. Annual herb that blooms Apr-Jul. Elevations of 500 to 4,000 feet.	After having been thought to be extinct, was rediscovered in 1999 at Laskey Mesa just north of the Plan Area.
<i>Chorizanthe parryi</i> var. <i>parryi</i>	Parry's spineflower	CRPR 1B.1, Locally uncommon	Openings in chaparral, coastal sage scrub. Annual herb that blooms Apr-Jun. Elevations of 950 to 3,800 feet.	Possible in North Area

Special-Status Species Potentially Occurring in the Santa Monica Mountains North Area				
Scientific Name	Common Name	Status ¹	Habitat	Notes
<i>Eriogonum angulosum</i>	Angle-stem wild buckwheat	Locally uncommon	Valley grassland, foothill woodland, Joshua tree woodland, pinyon-juniper woodland. Annual herb that blooms year-round. Elevations of 260 to 5,600 feet.	One record in Santa Monica Mtns at Paramount Ranch in North Area (California).
<i>Eriogonum cithariforme</i> var. <i>agninum</i>	Santa Ynez wild buckwheat, Cithara buckwheat	Locally uncommon	Sandy soils. West Transverse Range, Liebre Mts, desert side of San Gabriels, Rock Creek area, Mt. Gleason, south side of Table Mt above Wrightwood. Annual herb that blooms May-Oct. Elevations of 1,400 to 6,300 feet.	Single historic record in North Area (California).
<i>Eriogonum wrightii</i> var. <i>membranaceum</i>	Wright's buckwheat	Locally uncommon	Dry stony places to 7,500 feet, chaparral to pinyon-juniper woodland, SW California. Perennial herb or shrub that blooms Jun-Aug.	Several records south of North Area (California).
<i>Lastarriaea coriacea</i>	Leather spineflower	Locally uncommon	Coastal sage scrub, chaparral. Annual herb that blooms Apr-Jun. Elevations of 20 to 3,500 feet.	Possible in North Area
Ranunculaceae	Buttercup Family			
<i>Delphinium parryi</i> ssp. <i>maritimum</i>	Seaside larkspur	Locally uncommon	Valley grassland, coastal sage scrub, chaparral, southern oak woodland, yellow pine forest. Perennial herb that blooms Apr-May. Elevations of 200 to 3,500 feet.	Several records south of North Area (California).
Rhamnaceae	Buckthorn Family			
<i>Ceanothus tomentosus</i> var. <i>olivaceus</i>	Woolly leaf ceanothus	Locally uncommon	Slopes in chaparral, foothill woodland, yellow pine forest. Shrub that blooms Mar-May. Elevations of 100 to 4,800 feet.	Possible in North Area.
Rosaceae	Rose Family			
<i>Chamaebatia australis</i>	Southern mountain misery, southern bearclover	CRPR 4.2, Locally uncommon	Chaparral. Shrub that blooms Nov-May. Elevations of 850 to 6,300 feet.	Rocky Oaks Park (California).
<i>Holodiscus discolor</i>	Oceanspray	Locally uncommon	Slopes, sometimes serpentine soils, in redwood forest, Douglas-fir forest, yellow pine forest, red fir forest, lodgepole forest, mixed evergreen forest, chaparral, wetland-riparian. Shrub that blooms May-Jul. Elevations up to 11,500 feet.	Several records south and east of North Area (California).
<i>Horkelia cuneata</i> ssp. <i>cuneata</i>	Wedge-leaved horkelia	Locally uncommon	Coastal strand, closed-cone pine forest, foothill woodland, northern coastal scrub, chaparral, coastal sage scrub. Perennial herb that blooms Feb-Jul. Elevations up to 5,600 feet.	Possible in North Area.
<i>Horkelia cuneata</i> var. <i>puberula</i>	Mesa horkelia	CRPR 1B.1	On sandy or gravelly sites in chaparral, cismontane woodland, coastal scrub. Elevations of 230 to 2,660 feet. Blooms Feb-Sep.	Historic collection from near the junction of U.S. 101 and Las Virgenes Road, but likely extirpated from Santa Monica Mountains.
Sapindaceae	Soapberry Family			
<i>Acer macrophyllum</i>	Bigleaf maple	Locally uncommon	Streambanks, canyons. Tree that blooms Apr-May. Elevations up to 6,400 feet.	Several locations in North Area, including Malibu Creek State Park and La Sierra Canyon.

Special-Status Species Potentially Occurring in the Santa Monica Mountains North Area				
Scientific Name	Common Name	Status ¹	Habitat	Notes
Saxifragaceae	Saxifrage Family			
<i>Boykinia occidentalis</i>	Western boykinia	Locally uncommon	Northern coastal scrub, mixed evergreen forest, redwood forest, chaparral, yellow pine forest, wetland-riparian. Perennial herb that blooms Jun-Aug. Elevations of 50 to 4,900 feet.	Recorded south of the North Area (California).
<i>Boykinia rotundifolia</i>	Round leaved boykinia	Locally uncommon	Riparian areas. Perennial herb that blooms May-Jul. Elevations of 550 to 6,800 feet.	Historic records along Malibu Cyn Rd south of North Area (California)
Solanaceae	Nightshade Family			
<i>Nicotiana quadrivalvis</i>	Indian tobacco	Locally uncommon	Variety of habitats including yellow pine forest, foothill woodland, chaparral, valley grassland, coastal sage scrub, wetland-riparian. Annual herb that blooms May-Oct. Elevations below 6,400 feet.	Several locations in North Area, including King Gillette Ranch, Paramount Ranch, Malibu Creek State Park (California)
Theophrastaceae	Threophrasta Family			
<i>Samolus parviflorus</i>	Water pimpernel	Locally uncommon	Wetlands. Perennial herb that occurs at elevations up to 3,200 feet.	Recorded south of North Area (California).
VASCULAR PLANTS - Monocotyledons				
Alliaceae	Onion Family, Garlic Family			
<i>Allium praecox</i>	Early onion	Locally uncommon	Chaparral, southern oak woodland. Perennial herb (bulb) that blooms Mar-May. Elevations of 40 to 3,400 feet.	Possible in North Area.
Cyperaceae	Sedge Family			
<i>Carex barbarae</i>	Valley sedge	Locally uncommon	Slopes in valley grassland, foothill woodland, coastal prairie, mixed evergreen forest, wetland-riparian. Perennial grasslike herb that blooms Jun-Aug. Elevations below 6,900 feet.	Recorded south of North Area (California).
<i>Carex globosa</i>	Round fruit sedge	Locally uncommon	Southern oak woodland, northern coastal scrub, mixed evergreen forest, redwood forest. Perennial grasslike herb that occurs from 20 to 5,800 feet elevation.	Seminole Hot Springs (California).
<i>Carex praegracilis</i>	Field sedge	Locally uncommon	Usually in wetlands within coastal strand, valley grassland, coastal sage scrub, creosote bush scrub, yellow pine forest, red fir forest, wetland-riparian. Perennial grasslike herb that blooms May-Jun. Elevations to 10,700 feet.	Calabasas near North Area boundary (California).
<i>Carex spissa</i>	San Diego sedge	Locally uncommon	Coastal sage scrub, chaparral, southern oak woodland, wetland-riparian. Perennial grasslike herb that occurs from 20 to 4,200 feet elevation.	Recorded south of North Area (California).
<i>Carex triquetra</i>	Triangular fruit sedge	Locally uncommon	Coastal sage scrub, chaparral. Perennial grasslike herb that occurs from 60 to 5,400 feet elevation.	Recorded south and east of North Area (California).
<i>Isolepis cernua</i> (<i>Scirpus cernuus</i>)	Low bulrush	Locally uncommon	Wetlands. Perennial grasslike herb that occurs to 7,700 feet elevation.	Possible in North Area
<i>Scirpus microcarpus</i>	Mountain bog bulrush	Locally uncommon	Wetlands. Perennial grasslike herb that occurs to 9,700 feet elevation.	Historic record near Seminole Hot Springs (California).

Special-Status Species Potentially Occurring in the Santa Monica Mountains North Area				
Scientific Name	Common Name	Status ¹	Habitat	Notes
Juncaceae	Rush Family			
<i>Juncus patens</i> or <i>Juncus textilis</i>	Basket rush	Locally uncommon	Wetlands, occasionally uplands. Perennial grasslike herb that occurs to 4,700 feet elevation.	Recorded south and east of North Area (California).
Liliaceae	Lily Family			
<i>Calochortus albus</i>	White fairy lantern	Locally uncommon	Foothill woodland, chaparral, yellow pine forest. Perennial herb that blooms Apr-May. Elevations of 20 to 5,800 feet.	Multiple records in and near North Area (California).
<i>Calochortus catalinae</i>	Catalina mariposa lily	CRPR 4.2	Chaparral, cismontane woodland, coastal scrub, and valley and foothill grassland habitats. Blooms Feb-Jun. Elevations of 50 to 2,300 feet.	Locally abundant throughout North Area, on clay soil.
<i>Calochortus clavatus</i> var. <i>gracilis</i>	Slender mariposa-lily	CRPR 1B.2	Chaparral, coastal scrub, and grassland habitats. Perennial bulbiferous herb that blooms Mar-Jun. Elevations of 1,000 to 3,300 feet.	Locally common in a variety of habitats, including openings within chaparral and in oak woodland understory.
<i>Calochortus plummerae</i>	Plummer's mariposa-lily	CRPR 4.2	Granitic, rocky soils in chaparral, coastal scrub, grasslands, cismontane woodland, and lower montane coniferous forest. Perennial bulbiferous herb that blooms May-Jul. Elevations of 300 to 5,600 feet.	Locally common (to abundant) in chaparral and coastal sage scrub throughout North Area, particularly south of U.S. 101.
<i>Calochortus splendens</i>	Splendid mariposa lily	Locally uncommon	Chaparral, foothill woodland, yellow pine forest. Perennial herb that blooms Apr-Jul. Elevations of 50 to 9,000 feet.	Multiple records in and near North Area (California).
<i>Calochortus venustus</i>	Butterfly mariposa lily	Locally uncommon	Valley grassland, foothill woodland, yellow pine forest. Perennial herb that blooms May-Jun. Elevations of 300 to 7,200 feet.	Cheeseboro Cyn several additional historic records in north Area (California)
<i>Lilium humboldtii</i> ssp. <i>ocellatum</i>	Ocellated humboldt lily	CRPR 4.2	Openings in chaparral, coastal scrub, cismontane woodland, lower montane coniferous forest, and riparian woodland. Perennial bulbiferous herb that blooms Mar-Aug. Elevations of 100 to 5,900 feet.	Historic record in La Sierra Cyn; several records south of the North Area (California).
Orchidaceae	Orchid Family			
<i>Piperia elegans</i>	Rein orchid	Locally uncommon	Chaparral, foothill woodland, yellow pine forest, red fir forest, northern coastal scrub, closed-cone pine forest. Perennial herb that blooms Jul-Oct. Elevations to 4,500 feet.	Possible in North Area.
<i>Piperia unalascentis</i>	Alaska piperia	Locally uncommon	Chaparral, valley grassland, foothill woodland, southern oak woodland, northern oak woodland, mixed evergreen forest, yellow pine forest, red fir forest, wetland-riparian. Perennial herb that blooms Apr-Jul. Elevations of 300 to 7,900 feet.	Several records in and near North Area (California).
Poaceae	Grass Family			
<i>Festuca octoflora</i> (<i>Vulpia octoflora</i>)	Sixweeks grass	Locally uncommon	Native annual bunchgrass that grows in open, sunny places on sandy soils between shrubs and in burn areas (common fire follower). Blooms Mar-Jun. Elevations of 50 to 7,600 feet.	Several historic records near North Area; some are extirpated (California).
<i>Hordeum depressum</i>	Alkali barley	Locally uncommon	Annual grass that grows in moist habitats such as vernal pools. Blooms Apr-May. Elevations to 7,100 feet.	Recent record in Calabasas near North Area (California).

Special-Status Species Potentially Occurring in the Santa Monica Mountains North Area				
Scientific Name	Common Name	Status ¹	Habitat	Notes
<i>Koeleria macrantha</i>	June grass	Locally uncommon	Perennial bunchgrass that occupies a variety of habitats, especially prairie. Blooms May-Jun. Elevations up to 14,200 feet.	Several records in and near North Area (California).
<i>Leymus triticoides</i>	Beardless wild rye	Locally uncommon	Perennial grass that often grows in moist habitat, sometimes with heavy and saline soils. Blooms Jun-Jul. Elevations to 10,200 feet.	Recent record at Stunt Ranch, south of the North Area (California).
<i>Melica californica</i>	California melicgrass	Locally uncommon	Perennial grass that grows on slopes and ridges in a variety of habitats. Blooms Jun-Aug. Elevations of 25 to 7,200 feet.	Several records in and near North Area (California).
<i>Muhlenbergia rigens</i>	Deergrass	Locally uncommon	Valley grassland, chaparral, yellow pine forest, wetland-riparian. Perennial grass that blooms May-Jun. Elevations of 60 to 7,300 feet.	Several records in and near North Area, including Rocky Oaks Park (California).
Ruscaceae Butcher's Broom Family				
<i>Nolina cismontana</i>	Chaparral nolina	CRPR 1B.2	Sandstone or gabbro soils in chaparral and coastal scrub habitats. Blooms Mar-Jul. Elevations of 450 to 4,200 feet.	Found with <i>Astragalus brauntonii</i> in Simi Hills at northern edge of North Area; also known from near Chatsworth Reservoir.
Themidaceae Brodiaea Family				
<i>Brodiaea terrestris</i> ssp. <i>kernensis</i>	Kern dwarf brodiaea	Locally uncommon	Grasslands, open woodlands. Perennial herb that blooms May-Jun. Elevations of 160 to 5,700 feet.	Just north of North Area at Kanan Rd and Agoura Rd in Agoura Hills (California).
VASCULAR PLANTS - Conifers				
Cupressaceae Cypress Family				
<i>Juniperus californica</i>	California juniper	Locally uncommon	Slopes in pinyon-juniper woodland, Joshua tree woodland, foothill woodland. Shrub that occurs at elevations of 200 to 10,300 feet.	Cornell, Paramount Ranch (California).
VASCULAR PLANTS - Ferns				
Blechnaceae Chain Fern Family				
<i>Woodwardia fimbriata</i>	Western chain fern	Locally uncommon	Forests, seeps or near springs in shade or part shade. Elevations of 10 to 5,700 feet.	Several records in and near North Area (California).
Pteridaceae Maidenhair Fern Family				
<i>Cheilanthes newberryi</i>	Newberry's lip fern	Locally uncommon	Chaparral, coastal sage scrub.	Historic record just outside North Area near Lake Eleanor (California).
<i>Notholaena californica</i>	California cloak fern	Locally uncommon	Coastal sage scrub, creosote bush scrub. Elevations of 300 to 4,900 feet.	Cornell (California).
Thelypteridaceae Marsh Fern Family				
<i>Thelypteris puberula</i> var. <i>sonorensis</i>	Sonoran maiden fern	CRPR 2B.2	Meadows, seeps, stream banks. Elevations of 160 to 2,000 feet.	Present on Triangle Ranch, east of Kanan Rd. Additional historic records south of North Area.
NON-VASCULAR PLANTS - Bryophytes				
Pottiaceae Moss Family				
<i>Tortula californica</i>	California screw moss	CRPR 1B.2	Sandy soils in chenopod scrub and valley and foothill grassland habitats. Elevations of 30 to 4,800 feet.	Recorded at Newton Falls in Newton Cyn 1 mi south of North Area.

Special-Status Species Potentially Occurring in the Santa Monica Mountains North Area				
Scientific Name	Common Name	Status ¹	Habitat	Notes
NON-VASCULAR PLANTS - Lichens				
Teloschistaceae	Lichen Family			
<i>Teloschistes chrysophthalmus</i>	Gold-eye lichen	Locally uncommon	On oak in valley and foothill woodlands and coastal scrub, from sea level to 2,000 feet.	Possible in North Area.
WILDLIFE – Insects and Arachnids				
Acrididae	Short-Horned Grasshoppers			
<i>Trimerotropis occidentiloides</i>	Santa Monica grasshopper	SA	Bare hillsides and along dirt trails in chaparral.	1973 collection from Kanan Road west of Saratoga Hills.
Apidae	Cuckoo, Carpenter, Digger, Bumble, and Honey Bees			
<i>Bombus crotchii</i>	Crotch bumble bee	SA	Grassland and scrub habitats, feeds on milkweeds, dustymaidens, lupines, medics, phacelias, and sages. Nests underground. Thought to have declined ~67% from historic range.	Multiple records from the Santa Monica Mtns outside North Area, but suitable habitat occurs.
Haplotrematidae	Predatory Land Snails			
<i>Haplotrema caelatum</i>	Slotted lancetooth snail	Locally uncommon	Predatory terrestrial snail known from Los Angeles, San Diego, Santa Barbara, and Ventura Cos.	Possible in North Area.
Helminthoglyptidae	Air-Breathing Land Snails			
<i>Helminthoglypta tudiculata</i>	Southern California shoulderband snail	Locally uncommon	Terrestrial snail known from Los Angeles, Riverside, and San Bernardino Cos.	Possible in North Area.
<i>Helminthoglypta willeti</i>	Matilija shoulderband snail	Locally uncommon	Terrestrial snail that occurs in a variety of habitats, including coastal sage scrub, chaparral, oak woodland, and riparian woodland.	Possible in North Area.
Lycaenidae	Gossamer-Winged Butterflies			
<i>Lycaena arota</i>	Cloudy tailed-copper	Locally uncommon	Open mixed woodland, sagebrush, chaparral.	Recorded east of Stokes Cyn (iNaturalist).
<i>Lycaena gorgon</i>	Gorgon copper	Locally uncommon	Chaparral, grasslands, oak or oak-pine woodlands, and granitic sand slopes with its host plants (<i>Eriogonum</i> spp.).	Possible in North Area.
<i>Satyrium auretorum fumosum</i>	Santa Monica Mountains hairstreak	Locally uncommon	Oak hillsides and chaparral.	Known from the western Santa Monica Mtns in Los Angeles and Ventura Cos.; distribution not well understood.
Nymphalidae	Brush-Footed Butterflies			
<i>Danaus plexippus</i> pop. 1	Monarch - California overwintering population	SA	Winter roost sites extend along the coast from northern Mendocino to Baja California, Mexico. Roosts located in wind-protected tree groves (eucalyptus, Monterey pine, cypress), with nectar and water sources nearby.	Common year-round in North Area, but large overwintering roosting sites in the Santa Monica Mtns are on the immediate coast, outside of the North Area.
<i>Euphydryas editha quino</i>	Quino checkerspot butterfly	FE	Larvae may use either dwarf plantain (<i>Plantago erecta</i>) or exserted Indian paintbrush (<i>Castilleja exserta</i> spp. <i>exserta</i> ; also called purple owl's clover), both of	Populations in Santa Monica Mtns apparently extirpated, but host plants are present.

Special-Status Species Potentially Occurring in the Santa Monica Mountains North Area				
Scientific Name	Common Name	Status ¹	Habitat	Notes
			which may be common in meadows and upland sage scrub/ chaparral habitat.	
<i>Polygonia satyrus</i>	Satyr anglewing	Locally uncommon	Valley bottoms, along streams, wooded prairie ravines, marshes, openings in riparian woods, fields and edges near moist woods. Host plant is various nettles (<i>Urticaceae</i> spp.)	Possible in North Area.
<i>Speyeria callippe comstocki</i>	Comstock's fritillary	Locally uncommon	Larval host plant is Johnny jumpup (<i>Viola pedunculata</i>).	Populations are near extirpation in Santa Monica Mtns (iNaturalist).
Tettigoniidae	Bush Crickets			
<i>Aglaothorax longipennis</i>	Santa Monica shieldback katydid	SA	Nocturnal, occurs in chaparral and canyon stream-bottom vegetation in Santa Monica Mtns. Associated with introduced iceplant and native chaparral plants.	Historic collection from Big Rock Canyon at the coast, outside of the North Area.
Timematodea	Stick Insects			
<i>Timema monikensis</i>	Santa Monica Mountains timema	Locally uncommon	Chaparral in the western Santa Monica Mtns.	Possible in the North Area.
Zoropsidae	False Wolf Spiders			
<i>Socalchemmis gertschi</i>	Gertsch's socalchemmis spider	SA	Sage scrub, chaparral, oak woodland, coniferous forest usually on rocky outcrops or talus slopes.	Historic collection from Old Topanga Canyon just south of North Area.
WILDLIFE - Fish				
Cyprinidae	Carps, True Minnows, and Relatives			
<i>Gila orcuttii</i>	Arroyo chub	CSSC	Native to streams from Malibu Creek to San Luis Rey River basin. Slow water stream sections with mud or sand bottoms. Feeds on aquatic vegetation and associated invertebrates.	Malibu Creek, Las Virgenes Creek.
Gobiidae	Gobies			
<i>Eucyclogobius newberryi</i>	Tidewater goby	FE, CSSC	Brackish water habitats along the Calif coast from Agua Hedionda Lagoon, San Diego Co. to the mouth of the Smith River. Found in shallow lagoons and lower stream reaches, they need fairly still but not stagnant water and high oxygen levels.	Malibu Creek and Lagoon downstream of North Area.
Salmonidae	Salmon			
<i>Oncorhynchus mykiss irideus</i>	Steelhead - southern California DPS	FE	Federal listing refers to runs in coastal basins from the Santa Maria River south to the U.S.-Mexico border. Anadromous adults migrate upstream to spawn in cool, clear, well-oxygenated streams. Juveniles remain in fresh water for 1 or more years before migrating downstream to the ocean. Requires perennial stream and barrier-free passage to the Pacific Ocean.	Both resident (rainbow trout) and anadromous (steelhead) forms are present in Malibu Creek and Lagoon, Arroyo Sequit and Leo Carillo, and Topanga Creek and Beach; all downstream of North Area (R. Dagit pers. comm.).

Special-Status Species Potentially Occurring in the Santa Monica Mountains North Area				
Scientific Name	Common Name	Status ¹	Habitat	Notes
WILDLIFE - Amphibians				
Hylidae	Treefrogs			
<i>Pseudacris cadaverina</i>	California treefrog	Locally uncommon	Typically found around canyon streams and rocky washes with permanent quiet pools. Found in desert streams and palm oases, coastal streams, and up into the mountain pine belt.	Several locations in and near North Area including Malibu Creek State Park (iNaturalist), but becoming less common in the Santa Monica Mtns.
Pelobatidae	Spadefoot Toads and Relatives			
<i>Spea hammondi</i>	Western spadefoot	CSSC	Occurs in numerous habitat types, primarily in grasslands but can be found in valley-foothill hardwood woodlands, sage scrubs, chaparral where pooled/ponded water, supporting typically clay-rich soils, remains through early spring (April/May); in some areas, vernal pools, stock ponds, and road pools are essential for breeding, egg-laying, and larval development.	Recorded in the Simi Hills north of the North Area (iNaturalist).
Ranidae	True Frogs			
<i>Rana draytonii</i>	California red-legged frog	FT, CSSC	Endemic to California. Associated with quiet perennial to intermittent ponds, stream pools and wetlands. Prefers shorelines with extensive riparian and/or emergent vegetation. Documented to disperse through upland habitats after rains.	Natural population in the Simi Hills in Las Virgenes Creek watershed (has been used as a source population to reintroduce the species at other locations in the watershed. Successful reproduction at one of the reintroduction sites was recorded in 2017.)
Salamandridae	Newts			
<i>Taricha torosa torosa</i>	Coast Range newt	CSSC	Coastal drainages from Mendocino County to San Diego County; CSSC status applies only from the Salinas River south. Lives in terrestrial habitats (generally forest and woodland) and will migrate over 1 kilometer to breed in ponds, reservoirs and slow-moving streams.	Known from Topanga Canyon (iNaturalist).
WILDLIFE - Reptiles				
Anniellidae	North American Legless Lizards			
<i>Anniella stebbinsi</i> (formerly <i>A. pulchra pulchra</i>)	Southern California legless lizard	CSSC	Burrowing species found in loose sandy or loamy soils within beach, chaparral, woodland and other habitats. Soil must be suitably moist for survival.	Recorded in the Santa Monica Mtns outside of the North Area, but suitable habitat occurs.
Boidae	Boas			
<i>Lichanura orcutti</i> (<i>L. trivirgata</i>)	Rosy boa	Locally uncommon	Arid scrublands, semi-arid shrublands, rocky shrublands, rocky deserts, canyons, and other rocky areas. Appears to be common in riparian areas, but does not require permanent water.	Possible in the North Area.
Colubridae	Colubrid Snakes			
<i>Arizona elegans occidentalis</i>	California glossy snake	CSSC	Arid scrub, rocky washes, grasslands, chaparral.	Possible in the North Area.
<i>Coluber constrictor</i>	Yellow-bellied racer	Locally uncommon	Prefers open areas with sunny exposure - meadows, grassland, sagebrush flats,	Occurs in the North Area (NPS data).

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			brushy chaparral, woodlands, riparian areas such as pond edges, and forest openings. Found in arid and moist habitats, but not usually found in deserts or high mountains.	
<i>Diadophis punctatus modestus</i>	San Bernardino ringneck snake	SA	Canyons with rocky outcrops or rocky talus slopes in conifer forest or chaparral habitats.	Common in North Area (NPS data, iNaturalist).
<i>Lampropeltis zonata</i>	San Diego mountain kingsnake	WL	Inhabits variety of habitats incl. valley-foothill hardwood, coniferous, chaparral, riparian, and wet meadows.	Recorded at various locations in the Santa Monica Mtns, including just outside the Plan Area in Topanga Cyn (CNDDDB, NPS data).
<i>Rhinocheilus lecontei</i>	Long-nosed snake	Locally uncommon	Arid and semi-arid deserts, grasslands, shrublands, and prairies up to 6,200 feet.	Possible in North Area.
<i>Salvadora hexalepis virgulata</i>	Coast patch-nosed snake	CSSC	Brushy or shrubby vegetation in coastal southern California. Requires small mammal burrows for refuge and overwintering sites.	Malibu Creek State Park (iNaturalist).
<i>Thamnophis hammondi</i>	Two-striped gartersnake	CSSC	Occurs in coastal California from vicinity of Salinas to northwest Baja California. Highly aquatic, found in or near freshwater. Often along streams with rocky beds and riparian growth.	Triunfo Creek; likely occurs in several streams with perennial water in the Plan Area.
<i>Thamnophis sirtalis</i>	California red-sided garter snake	CSSC	Often near ponds, marshes, or streams in a variety of habitats including forests, mixed woodlands, grasslands, chaparral, and farmlands.	Extirpated from region.
Emydidae	Box and Basking Turtles			
<i>Actinemys pallida</i>	Southern western pond turtle	CSSC	Occurs in perennial ponds, lakes, rivers and streams with suitable basking habitat (mud banks, mats of floating vegetation, partially submerged logs), submerged shelter and terrestrial nest sites. Requires friable soil for breeding. Documented to disperse and wander over upland habitats.	Las Virgenes Creek, unnamed tributary to Old Topanga Creek, Medea Creek, Triunfo Creek. Apparently declining and disappearing from drainages throughout the Santa Monica Mtns (Cooper and Hamilton, 2014).
Phrynosomatidae	Spiny Lizards			
<i>Phrynosoma blainvillii</i>	Coast horned lizard	CSSC	Loose, fine soils in a variety of habitats including coastal sage scrub, chaparral, grassland, coniferous forest, oak woodland, riparian woodland, and the margins of higher-elevation deserts in juniper desert chaparral. Abundant prey base of native ants and other insects required.	Recorded in several locations; widespread but localized in scrub and grassland habitats where specific conditions occur (sandy soils, abundant native ants).
Teiidae	Whiptails and Racerunners			
<i>Aspidoscelis tigris stejnegeri</i>	Coastal whiptail	CSSC	Found in deserts and semi-arid habitats with sparse vegetation and open areas; also found in woodland and riparian habitats; substrates may be firm soil, sandy, or rocky.	Common in North Area in intact habitat (NPS data, iNaturalist).

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WILDLIFE - Birds				
Accipitridae	Kites, Hawks, Eagles, and Allies			
<i>Accipiter cooperii</i>	Cooper's hawk	WL	Woodland, chiefly of open, interrupted, or marginal type; nest sites mainly in riparian growths of deciduous trees.	Abundant breeding resident (eBird).
<i>Accipiter striatus</i>	Sharp-shinned hawk	WL	Prefers, but not restricted to riparian habitats; breeds in ponderosa pine, black oak, riparian deciduous, mixed conifer, and Jeffrey pine habitats; requires north-facing slopes with perches.	Multiple records in and around the North Area (eBird).
<i>Aquila chrysaetos</i>	Golden eagle	FP, WL, BCC, CSB	Resident, though wanders widely. Found in rolling foothill and mountain areas, sage-juniper flats, dessert. Cliff-walled canyons provide nesting habitat in most parts of range.	Historically nested (prior to 2000); now rare in fall/winter (eBird).
<i>Buteo regalis</i>	Ferruginous hawk	WL, BCC, CSB	Forages in grasslands and agricultural fields.	Cheeseboro Cyn (eBird).
<i>Buteo swainsoni</i>	Swainson's hawk	ST, BCC, CSB	Breeds in grasslands with scattered trees, juniper sage flats, riparian areas, savannahs, and agricultural or ranch land. Requires suitable foraging areas such as grasslands, or alfalfa or grain fields supporting rodent populations.	Not know to nest in the region, but may fly over during migration.
<i>Circus cyaneus</i>	Northern harrier	CSSC, CSB	Prefer open country, grasslands, steppes, wetlands, meadows, agriculture fields; roost and nest on ground in shrubby vegetation often at edge of marshes.	Regular in fall and winter to extensive grassland (eBird).
<i>Elanus leucurus</i>	White-tailed kite	FP, CSB	Typically nests at lower elevations in riparian trees, including oaks, willows, and cottonwoods; forages over open country.	Formerly nested widely across North Area and at urban-wildland interface (NPS data); few records since 2012, likely due to drought.
<i>Haliaeetus leucocephalus</i>	Bald eagle	SE, FP, BCC, CSB	Nests on large trees in the vicinity of large lakes, reservoirs and rivers. Wintering birds are most often found near large concentrations of waterfowl or fish.	Malibu Creek State Park (eBird).
Alaudidae	Larks			
<i>Eremophila alpestris actia</i>	California horned lark	WL, CSB	Occurs in open habitats, forages in bare dirt in short and/or sparse grassland and areas of scattered shrubs.	King Gillette Ranch, Malibu Creek State Park (eBird).
Alcedinidae	Kingfishers			
<i>Megasceryle alcyon</i>	Belted kingfisher	CSB	Need access to bodies of water for feeding, and vertical earthen banks for nesting. Hunt in unclouded water that allows them to see prey below the surface, with perches nearby but minimal vegetation obstructing the water. Some of their most common habitats are streams, rivers, ponds, lakes, estuaries, and calm marine waters.	Recorded at multiple locations in North Area including Malibou Lake, Paramount Ranch, Malibu Creek State Park (eBird).

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Scientific Name	Common Name	Status ¹	Habitat	Notes
Anatidae	Ducks, Geese, and Swans			
<i>Anser albifrons</i>	Greater white-fronted goose	CSB	Marshes, prairies, fields, lakes, bays; breeds on tundra in summer. Generally in open country; most spend winter where agricultural fields (for foraging) are close to extensive shallow waters (for roosting).	Several lakes and waterbodies in and near North Area, including Malibu Creek State Park, Lake Sherwood, Lake Calabasas (eBird).
<i>Aythya americana</i>	Redhead	CSSC, CSB	Lakes, saltwater bays, estuaries; in summer, fresh marshes. For nesting season favors large marshes in prairies or intermountain valleys. Migrants gather on large lakes. In winter, mainly on coastal bays and lagoons, also on freshwater lakes inland.	Several lakes and waterbodies in and near North Area, including Malibu Creek State Park, Lake Sherwood, Lake Calabasas (eBird).
Apodidae	Swifts			
<i>Chaetura vauxi</i>	Vaux's swift	CSSC	Breeds in coniferous and mixed coniferous forests; requires large-diameter, hollow trees for breeding and roosting; forages in areas of open water where insect prey congregates.	Regularly observed in and around North Area during migration (eBird).
<i>Cypseloides niger</i>	Black swift	CSSC, BCC, CSB	Open sky over mountains, coastal cliffs. Forages widely over most terrain but is very local in occurrence, probably limited to regions with suitable nesting sites. Nests on ledges or in crevices in steep cliffs, either along coast or near streams or waterfalls in mountains.	Regularly observed in and around North Area during migration (eBird).
Ardeidae	Hérons, Egrets, and Bitterns			
<i>Botaurus lentiginosus</i>	American bittern	CSB	Marshes, reedy lakes. Breeds in freshwater marshes, mainly large, shallow wetlands with much tall marsh vegetation (cattails, grasses, sedges) and areas of open shallow water. Winters in similar areas, also in brackish coastal marshes. Sometimes feeds in dry grassy fields.	Historic records just west and south of North Area (eBird).
<i>Ixobrychus exilis</i>	Least bittern	CSSC, BCC, CSB	Fresh marshes, reedy ponds. Mostly freshwater marsh but also brackish marsh, in areas with tall, dense vegetation standing in water. May be over fairly deep water, because it mostly climbs in reeds rather than wading. Sometimes in salt marsh or in mangroves.	Resident at Lake Sherwood just west of North Area (eBird); may occur at Malibu Lake, in cattail/reed marshes.
Caprimulgidae	Nightjars			
<i>Chordeiles acutipennis</i>	Lesser nighthawk	CSB	Arid scrub, dry grassland, desert washes. Found in open arid habitats including desert, grassland, brushy country.	Possible in North Area.
<i>Phalaenoptilus nuttallii</i>	Common poorwill	CWL	Dry hills, open brush. Various kinds of open dry terrain at low elevation in the west, including rocky mesas with scattered shrubs, washes and hills in Sonoran desert, scrubby areas in dry open pine forest. May be found in open grassland, but usually only around rocky outcrops.	Regularly recorded in and near North Area (eBird).

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Cardinalidae	Cardinals			
<i>Passerina cyanea</i>	Indigo bunting	CWL	Brushy pastures, bushy wood edges. For nesting favors roadsides, old fields growing up to bushes, edges of woodlands, and other edge habitats such as along rights-of-way for powerlines or railroads. Also in clearings within deciduous woods, edges of swamps. In the west, usually near streams. During winter in the tropics, most common around brushy edges of farm fields.	Paramount Ranch, Malibu Creek State Park (eBird).
<i>Pheucticus melanocephalus</i>	Black-headed grosbeak	CWL	Deciduous and mixed woods. Breeds mainly in oak woodland, streamside groves of cottonwood and willow, pine-oak woods in mountains, pinyon-juniper woodland; seldom in purely coniferous forest. In migration, occurs in any kind of open woods, streamside trees, suburbs, mesquite groves, desert washes. Winters in open woods and brush of the tropics, from lowlands to mountains.	Breeds in North Area.
Cathartidae	New World Vultures			
<i>Cathartes aura</i>	Turkey vulture	CSB	Widespread over open country, woods, deserts, foothills. Most common over open or semi-open country, especially within a few miles of rocky or wooded areas providing secure nesting sites. Generally avoids densely forested regions.	Resident throughout North Area.
Cuculidae	Cuckoos and Relatives			
<i>Geococcyx californianus</i>	Greater roadrunner	CSB	Deserts, open country with scattered brush. Most common in Sonoran desert and in other kinds of brushy country, including chaparral, in areas with a mix of open ground and dense low cover. At limits of range, found in dry grassland, forest edges, and limestone hills with scattered junipers.	Resident in North Area (eBird).
Emberizidae	Sparrows, Buntings, Warblers, and Relatives			
<i>Aimophila ruficeps canescens</i>	Southern California rufous-crowned sparrow	WL, CWL	Resident in southern California coastal sage scrub and sparse mixed chaparral. Prefers steep rocky hillsides with grass and forb patches.	Abundant breeding resident (eBird).
<i>Ammodramus savannarum</i>	Grasshopper sparrow	CSSC, CSB	Grassland, hayfields, prairies. Breeds in rather dry fields and prairies, especially those with fairly tall grass and weeds and a few scattered shrubs. Also nests in overgrown pastures and hayfields, and sometimes in fields of other crops.	Rare and sporadic in spring/summer in extensive grassland (eBird).
<i>Amphispiza bilineata</i>	Black-throated sparrow	CWL	Arid brush, creosote-bush deserts. Lives in a variety of dry open habitats, from Sonoran desert with its mix of shrubs and cactus to very barren flats of creosote bush	Possible in North Area.

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			or saltbush. Also locally in grassland with scattered cactus, sagebrush flats, open pinyon-juniper woods.	
<i>Artemisiospiza belli belli</i>	Bell's sage sparrow	WL, BCC, CWL	Found in shrubby habitats including coastal sage scrub and chaparral, primarily of the chamise type.	Local breeding resident in chamise-dominated chaparral throughout North Area (eBird).
<i>Melospiza crissalis</i>	California towhee	CWL	Brushy areas, chaparral, coastal scrub, gardens. Found in a wide variety of dense low habitats, including streamside thickets, chaparral, pinyon-juniper woods, coastal sage scrub, semi-desert scrub, edges and openings in oak woodland, and well-vegetated gardens and city parks.	Abundant breeding resident (eBird).
<i>Piranga rubra</i>	Summer tanager	CSSC, CSB	Breeds in mature, desert riparian habitats dominated by cottonwood and willow.	Possible in North Area in winter.
<i>Pooecetes gramineus</i>	Vesper sparrow	CSB	Meadows, fields, prairies, roadsides. At all seasons, favors open grassy or weedy fields, often in rather dry situations with much open soil. May be in weedy roadsides, gravel pits, high mountain grasslands, stubble fields, grassy areas just above sandy beaches. Often breeds where there are a few taller plants for use as song perches.	Occasionally recorded in and around North Area in fall/winter (eBird).
<i>Spizella atrogularis</i>	Black-chinned sparrow	CWL	Brushy mountain slopes, open chaparral, sagebrush. Found mostly in arid scrub on hillsides, from low foothills up to almost 7,000 feet in mountains, in chaparral and open thickets of manzanita, scrub oak, sagebrush, chamise, and other low shrubs. In winter also found locally in desert areas, mesquite thickets.	Rocky Oaks Park (eBird).
<i>Spizella breweri</i>	Brewer's sparrow	BCC, CWL	Sagebrush, brushy plains; in winter, also weedy fields. In summer typically in open flats covered with sagebrush; sometimes in stands of saltbush, on open prairie, or in pinyon-juniper woodland.	Occasionally recorded in and around North Area (eBird).
Falconidae	Falcons and Caracaras			
<i>Falco columbarius</i>	Merlin	WL	Wide variety of habitats including marshes, deserts, seacoasts, open woodlands, fields.	Uncommon winter resident throughout North Area (eBird).
<i>Falco mexicanus</i>	Prairie falcon	WL, BCC, CSB	Rare in southern California; nests along cliff faces or rocky outcrops; forages over open spaces, agricultural fields.	Formerly nested on Simi Peak (NPS data), now a scarce fall/winter visitor (eBird).
<i>Falco peregrinus anatum</i>	American peregrine falcon	FP, BCC	Resident and winter visitor. Winters throughout the Central Valley and along portions of the coast; breeds at various coastal sites. Requires protected cliffs and ledges for nesting. Feeds primarily on water birds.	Frequent in fall/winter (eBird); recent nesting in Topanga Canyon State Park (NPS data).

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Fringillidae	Finches and Relatives			
<i>Spinus lawrencei</i>	Lawrence's goldfinch	BCC	Breeds in a variety of habitats throughout its range in southern California, including mixed conifer-oak forest, blue oak savannah, pinyon-juniper woodland, chaparral, riparian woodland, and desert oases.	Uncommon breeding resident (somewhat nomadic) throughout North Area (eBird).
Hirundinidae	Swallows			
<i>Progne subis</i>	Purple martin	CSSC, CSB	Towns, farms, semi-open country near water; in west, also mountain forest, saguaro desert. In the west, isolated colonies breed around woodland edges, clearings in mountain forest, and lowland desert with giant saguaro cactus.	Possible in North Area.
<i>Riparia riparia</i>	Bank swallow	ST, CSB	Colonial nester; nests primarily in riparian and other lowland habitats west of the desert; requires vertical banks/cliffs with fine-textured/sandy soils near streams, rivers, lakes, or the ocean to dig a nesting hole.	Rare transient in migration (extirpated as a nester in southern California).
Icteridae	New World Blackbirds			
<i>Agelaius tricolor</i>	Tricolored blackbird	Cand. SE, CSSC, BCC, CSB	Highly colonial species, most numerous in central valley & vicinity. Largely endemic to California. Requires open water, protected nesting substrate, & foraging area with insect prey within a few km of the colony.	Recorded at a pond near a rural residence about ¼ mile NE of Mulholland Hwy and Zuma Ridge Fire Road. Thought to be nesting here, CNDDDB record notes that additional surveys planned for spring 2017.
<i>Sturnella neglecta</i>	Western meadowlark	CSB	Grasslands, cultivated fields and pastures, meadows, prairies. Breeds mostly in natural grasslands, abandoned weedy fields, rangeland, also sometimes on cultivated land. In winter, often in stubble fields and other farmland.	Routinely observed in and around North Area (eBird).
<i>Xanthocephalus xanthocephalus</i>	Yellow-headed blackbird	CSSC, CSB	Fresh marshes. Forages in fields, open country. Breeds in freshwater sloughs, marshy lake borders, tall cattails growing in water up to 3-4 feet deep. Forages around marshes and also commonly in open pastures, plowed fields, cattle pens, feedlots.	Occasionally observed in North Area during migration (eBird).
Laniidae	Shrikes			
<i>Lanius ludovicianus</i>	Loggerhead shrike	CSSC, BCC, CSB	Savannah, pinyon-juniper woodland, Joshua tree woodland, riparian woodland, desert oases, scrub, and washes; prefers open country for hunting with perches for scanning and fairly dense shrubs and brush for nesting.	Uncommon in fall, rare in winter (eBird). Formerly bred widely, e.g., Las Virgenes Canyon (WFVZ).
Laridae	Gulls, Terns, and Skimmers			
<i>Hydroprogne caspia</i>	Caspian tern	BCC, CSB	Large lakes, coastal waters, beaches, bays. Found on both fresh and salt water, favoring protected waters such as bays, lagoons, rivers, lakes, not usually foraging	Mostly recorded along the coast, but occasional records at inland areas such as Malibu

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			over open sea. Inland, more likely on large lakes than on small ponds. Nests on open ground on islands, coasts.	Creek State Park and Lake Sherwood (eBird).
Odontophoridae	Partridge and Quail			
<i>Oreortyx pictus</i>	Mountain quail	CWL	Dense brush in wooded foothills and mountains. Most common in pine-oak woodland, coniferous forest, and chaparral; sometimes in pinyon-juniper woods or in scrub at lower elevations. May be common in areas of second-growth brush after fires or clearcuts. Requires dense low thickets for cover. During hot weather, rarely found more than a mile from water.	Locally uncommon. Possible in chaparral habitats throughout North Area.
Paridae	Titmice and Relatives			
<i>Baeolophus inornatus</i>	Oak titmouse	BCC, CWL	Oak woods, pinyon-juniper; locally river woods, shade trees. Along Pacific seaboard, occurs most commonly in oak woodland, including areas where oaks meet streamside trees or pines; also in well-wooded suburbs, rarely in coniferous forest in mountains. In the interior, also occurs in some woodlands dominated by pine or juniper.	Abundant breeding resident (eBird).
Parulidae	New World Warblers			
<i>Geothlypis tolmiei</i>	MacGillivray's warbler	CWL	Low dense undergrowth; shady thickets. Breeds in thickets of willow and alder, near stream bottoms or at edge of coniferous or mixed forest. Favors new growth in logged or burned areas (especially with dead and fallen trees), brushy thickets near low moist ground, and thicketed mountain canyons.	Possible in North Area in spring/summer.
<i>Icteria virens</i>	Yellow-breasted chat	CSSC, CSB	Inhabits riparian thickets of willow and other brushy tangles near water courses; nests in low, dense riparian vegetation; nests and forages within 10 feet of ground.	Localized breeder in spring/summer in riparian areas, including Malibu Creek State Park and Las Virgenes Canyon watershed (eBird).
<i>Oreothlypis ruficapilla</i>	Nashville warbler	CWL	Cool, open mixed woods with undergrowth; forest edges, bogs. Breeds in deciduous, coniferous, and streamside woodlands, also bogs and thickets. Favors cedar and spruce bogs in northern part of range, abandoned fields and mountain pastures with saplings and young trees in eastern United States. In the west, breeds in thickets of manzanita and other shrubs near belts of pine and fir.	Occasionally recorded in North Area in spring/summer (eBird).
<i>Setophaga occidentalis</i>	Hermit warbler	CWL	Conifer forests; in migration, conifers and deciduous woods. Breeds mostly in moist, dense forests near sea level, especially in forests of Douglas-fir, hemlock, and western redcedar. Also nests in cooler, wetter forests of fir and other trees at higher elevations. In winter found in pine-	Occasionally recorded in North Area during migration (eBird).

Special-Status Species Potentially Occurring in the Santa Monica Mountains North Area				
Scientific Name	Common Name	Status ¹	Habitat	Notes
			oak forests of mountains in Mexico, also in oaks and conifers along California coast.	
<i>Setophaga petechia</i>	Yellow warbler	CSSC, CSB	Nests in several larger canyons with permanent water and mature riparian woodland. In coastal southern California, rarely breeds away from willows (e.g., largely absent from oak woodland).	Breeds in drainages within and near Plan Area, including Malibu Creek, Cold Creek, and Topanga Cyn drainages.
<i>Cardellina pusilla</i>	Wilson's warbler	CSB	Thickets along wooded streams, moist tangles, low shrubs, willows, alders. Breeds as far north as timberline, in thickets, second-growth, bogs, or in alder and willow groves near streams and ponds. In migration and winter, occurs from hot lowland thickets up to cool mountain woods; always in scrubby overgrown clearings and thin woods, not in the interior of dense forest.	Commonly recorded in North Area spring through fall (eBird).
Picidae	Woodpeckers			
<i>Picoides villosus</i>	Hairy woodpecker	CSB	Forests, woodlands, river groves, shade trees. Accepts wide variety of habitats so long as large trees present; found in deciduous, coniferous, and mixed forest, groves along rivers in prairie country, open juniper woodland, swamps.	Recorded at several locations in the north and central portions of the North Area (eBird).
Podicipedidae	Grebes			
<i>Podiceps nigricollis</i>	Eared grebe	CSB	Prairie lakes, ponds; in winter, open lakes, salt bays. Favored nesting areas are lakes or large ponds with extensive marshy borders. Opportunistic, it may quickly occupy new or temporary habitats. During migration and winter, mainly on large freshwater or alkaline lakes.	Recorded at several water bodies in and near the North Area, including Malibou Lake (eBird).
Poliophtidae	Gnatcatchers			
<i>Poliophtila californica californica</i>	Coastal California gnatcatcher	FT, CSSC, CSB	Various sage scrub communities, often dominated by California sage and buckwheat; generally avoids nesting in areas with a slope of greater than 40%, and typically less than 820 feet in elevation.	Recorded once in coastal sage scrub in the northern North Area, between the Upper Las Virgenes Canyon Open Space and the Mont Calabasas development. Resident vic. Montclef Ridge formation west of Thousand Oaks and in Moorpark area (Ventura County).
Rallidae	Rails, coots, and gallinules			
<i>Porzana carolina</i>	Sora	CSB	Fresh marshes, wet meadows; in winter, also salt marshes. Occurs in a variety of marshy situations, from extensive river marshes to grassy edges of small ponds. Also in damp meadows, and sometimes in tall-grass fields some distance from water. Breeds mostly in freshwater habitat with large stands of cattails, but moves into salt marshes at times, especially in winter.	Recorded at several locations in and near the North Area, including Malibou Lake and Paramount Ranch (eBird).

Special-Status Species Potentially Occurring in the Santa Monica Mountains North Area				
Scientific Name	Common Name	Status ¹	Habitat	Notes
<i>Rallus limicola</i>	Virginia rail	CSB	Fresh and brackish marshes; in winter, also salt marshes. Nests in a variety of marshy situations, mostly fresh, but also brackish marsh near coast. Often moves into salt marshes in winter. During migration, sometimes found in odd spots, even city streets.	Recorded at several water bodies in and near the North Area, including Malibu Lake (eBird).
Regulidae	Kinglets			
<i>Regulus calendula</i>	Ruby-crowned kinglet	CWL	Winter visitor. Common in woods and thickets during migration and winter.	Regularly recorded in North Area in winter (eBird).
<i>Regulus satrapa</i>	Golden-crowned kinglet	CWL	Winter visitor. During migration, stop in a broad range of habitats at medium to high elevations, including coniferous and deciduous forests, old fields, parks, and backyards. Winter in a variety of coniferous and deciduous habitats, bottomland hardwoods, swamps, riverside habitats, cities, and suburbs.	Regularly recorded in North Area in winter (eBird).
Scolopacidae	Sandpipers and Relatives			
<i>Numenius americanus</i>	Long-billed curlew	WL, BCC, CSB	Generally nests in short grasses including grass prairies or agricultural fields, and moves to denser grasslands after young have fledged. Winter at the coast and in Mexico.	Malibu Creek State Park (eBird).
Sittidae	Nuthatches			
<i>Sitta canadensis</i>	Red-breasted nuthatch	CWL	Conifer forests and stands of ornamental conifers.	Common winter visitor in North Area (eBird).
Strigidae	True Owls			
<i>Asio otus</i>	Long-eared owl	CSSC, CSB	Resident and visitor in the region. Nests in a variety of woodland habitats, including oak and riparian. Requires adjacent open land with rodents for foraging, and the presence of old nests of crows, hawks, magpies etc. for breeding.	Breeding resident in Upper Las Virgenes Open Space and possibly elsewhere (NPS data).
<i>Athene cunicularia</i>	Burrowing owl	CSSC, BCC, CSB	Resident and winter visitor in open, dry annual or perennial grasslands and scrub habitats with low-growing vegetation, perches and abundant mammal burrows. Preys upon insects and small vertebrates. Nests and roosts in old mammal burrows, generally those of ground squirrels.	Extirpated; formerly nested in colony in present-day Oak Park, near Kanan Rd. and Lindero Canyon Rd. (NPS data).
Threskiornithidae	Ibises and spoonbills			
<i>Plegadis chihi</i>	White-faced ibis	WL, CSB	Fresh marshes, irrigated land, tules. For foraging, favors very shallow water, as in marshes, flooded pastures, irrigated fields. Sometimes in damp meadows with no standing water. Prefers fresh water marsh, but sometimes forages in salt marsh.	Recorded at Lake Sherwood west of the North Area (eBird); could occur at lakes/marshes within North Area.
Troglodytidae	Wrens			
<i>Catherpes mexicanus</i>	Canyon wren	CWL	Resident that occupies cliffs, canyons, rocky outcrops, and boulder piles.	Regularly recorded in North Area (eBird).

Special-Status Species Potentially Occurring in the Santa Monica Mountains North Area				
Scientific Name	Common Name	Status ¹	Habitat	Notes
<i>Cistothorus palustris clarkae</i>	Clark's marsh wren	CSSC, CSB	Resident of southern California coast from Los Angeles basin south to Mexican border. Restricted to freshwater and brackish marshes dominated by bulrushes (<i>Scirpus</i> spp.) or cattails (<i>Typha</i> spp.).	Two known sites near the North Area along Arroyo Sesquit.
Turdidae	Thrushes			
<i>Catharus guttatus</i>	Hermit thrush	CWL	Winter visitor, often in lower-elevation forests with dense understory and berry bushes, including pine, broadleaf evergreen, and deciduous woods.	Regularly recorded in North Area in winter (eBird).
<i>Catharus ustulatus</i>	Swainson's thrush	CSB	Summer visitor; breeds in deciduous streamside woodlands, alder or willow thickets, and occasionally in coastal scrub in coastal CA. Found in a variety of habitats during migration.	Multiple locations in North Area including Malibu Creek State Park (eBird).
<i>Sialia currucoides</i>	Mountain bluebird	CSB	Winter visitor in open woodlands, pastures, meadows, grasslands, pinyon-juniper and oak-juniper woodlands, agricultural areas.	Malibu Creek State Park (eBird).
Tyrannidae	Tyrant Flycatchers			
<i>Contopus cooperi</i>	Olive-sided flycatcher	CSSC, BCC, CSB	Summer visitor. Variety of montane forests and coastal areas. Often associated with snags during breeding and migration.	Recorded at Cheeseboro/Palo Comado Canyon, Malibu Creek State Park, and other locations in and around the North Area (eBird).
<i>Contopus sordidulus</i>	Western wood-pewee	CWL	Breeds in open forest, forest edge, and riparian zones.	Regularly recorded in North Area in spring through fall (eBird).
<i>Empidonax traillii extimus</i>	Southwestern willow flycatcher	FE, SE, CSB	Summer resident in the southern third of California and the Southwest. Typically breeds in dense riparian vegetation associated with standing water. Vegetative microhabitats used for nesting variable; willows, mulefat, blackberry and cottonwood are commonly used. Nests typically within ten feet of the ground.	Willow flycatcher is a regular transient through region (eBird), but no breeding has been documented in Santa Monica Mountains, including historically.
Vireonidae	Vireos			
<i>Vireo bellii pusillus</i>	Least Bell's vireo	FE, SE, CSB	Summer visitor. Breeds in riparian woodland and scrub along perennial or nearly perennial streams; prefers early successional vegetation. Willows and mulefat typically used for nesting.	Recent spring/summer records for Las Virgenes Canyon watershed (eBird), but no indication of breeding.
<i>Vireo huttoni</i>	Hutton's vireo	CWL	Year-round resident in mixed evergreen forests and woodlands of western North America; particularly common in areas where live (evergreen) oaks predominate.	Recorded throughout North Area (eBird).
<i>Vireo plumbeus</i>	Plumbeous vireo	CWL	Typically breeds in warm, dry, often montane forests of pine, oak and juniper.	Infrequently recorded in North Area (eBird).
WILDLIFE - Mammals				
Molossidae	Free-Tailed Bats			
<i>Eumops perotis californicus</i>	Western mastiff bat	CSSC	Wide variety of open, arid and semi-arid habitats. Distribution appears to be tied to large rock structures which provide suitable	Recorded at Paramount Ranch, Peter Strauss Ranch, Malibu Creek State Park (CNDDB).

Special-Status Species Potentially Occurring in the Santa Monica Mountains North Area				
Scientific Name	Common Name	Status ¹	Habitat	Notes
			roosting sites, including cliff crevices and cracks in boulders.	Suitable habitat throughout North Area.
Phyllostomidae	Leaf-Nosed Bats			
<i>Macrotus californicus</i>	California leaf-nosed bat	CSSC	Prefers caves, mines and rock shelters in Sonoran desert scrub.	Recorded in the Santa Monica Mtns outside of the North Area (historic record, CNDDDB).
Vespertilionidae	Evening Bats			
<i>Antrozous pallidus</i>	Pallid bat	CSSC	Deserts, grasslands, shrublands, woodlands, and forests. Roost sites include old ranch buildings, rocky outcrops and caves within sandstone outcroppings. Roosts must protect bats from high temperatures. Very sensitive to disturbance of roosting sites.	Recorded in the Santa Monica Mtns outside of the North Area, but suitable habitat occurs (CNDDDB).
<i>Euderma maculatum</i>	Spotted bat	CSSC	Occupies a wide variety of habitats from arid deserts and grasslands, to mixed conifer forests; feeds over water and along washes; needs rock crevices in cliffs or caves for roosting.	Recorded at Malibu Creek State Park; suitable habitat occurs throughout North Area (CNDDDB).
<i>Lasiurus blossevillii</i>	Western red bat	CSSC	Typically solitary, roosting primarily in the foliage of trees or shrubs. Day roosts are commonly in edge habitats adjacent to streams or open fields. There may be an association with intact riparian habitat.	Paramount Ranch, Peter Strauss Ranch; suitable habitat throughout North Area especially in riparian zones (CNDDDB).
<i>Lasiurus cinereus</i>	Hoary bat	SA	Prefers open habitats or habitat mosaics, with access to trees for cover & open areas or habitat edges for feeding. Roosts in dense foliage of medium to large trees. Feeds primarily on moths. Requires water.	Peter Strauss Ranch; suitable habitat throughout North Area (CNDDDB).
<i>Myotis ciliolabrum</i>	Western small-footed myotis	SA	Occurs in a wide variety of arid upland habitats at elevations ranging from sea level to 2,700 meters (8,860 feet); day roosts include rock crevices, caves, tunnels and mines, and, sometimes, buildings and abandoned swallow nests.	Suitable habitat occurs throughout North Area.
<i>Myotis yumanensis</i>	Yuma myotis	SA	Preferred habitats are open forests and woodlands with sources of water over which to feed. Distribution is closely tied to bodies of water. Maternity colonies occur in caves, mines, buildings, or crevices.	Peter Strauss Ranch, Malibu Creek State Park; suitable habitat throughout North Area (CNDDDB).
Leporidae	Hares and Rabbits			
<i>Lepus californicus bennettii</i>	San Diego black-tailed jackrabbit	CSSC, Locally uncommon	Abundant at lower elevations in herbaceous and desert-shrub areas and open, early stages of forest and chaparral habitats.	Apparently extirpated from North Area.
Mephitidae	Skunks			
<i>Spilogale gracilis</i>	Spotted skunk	Locally uncommon	Mixed woodlands, open areas, and farmlands.	Suitable habitat throughout North Area.

Special-Status Species Potentially Occurring in the Santa Monica Mountains North Area				
Scientific Name	Common Name	Status ¹	Habitat	Notes
Muridae	Rats, Mice, and Relatives			
<i>Neotoma lepida intermedia</i>	San Diego desert woodrat	CSSC	Coastal scrub of southern Calif. from San Diego County to San Luis Obispo County. Moderate to dense canopies preferred. Particularly abundant in rock outcrops, rocky cliffs, & slopes.	Suitable habitat throughout North Area.
Mustelidae	Weasels			
<i>Taxidea taxus</i>	American badger	CSSC	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Requires friable soils and open, uncultivated ground. Preys on burrowing rodents.	Multiple records in the Santa Monica Mtns, including within the North Area. Suitable habitat widespread.
Procyonidae	Raccoons and Relatives			
<i>Bassariscus astutus</i>	Ringtail	CFP	Occurs in chaparral, coastal sage scrub, riparian scrub, oak woodlands, and riparian woodlands in proximity to permanent water.	Malibu Creek State Park; potential to occur elsewhere in North Area in a variety of habitats.
Sciuridae	Squirrels and Relatives			
<i>Sciurus griseus</i>	Western grey squirrel	Locally uncommon	Woodland areas with enough tree cover for arboreal travel. Commonly associated with California black walnut (<i>Juglans californica</i>) and black oak (<i>Q. kelloggii</i>) trees, but also uses a variety of other native and non-native trees.	Small populations in native and nonnative stands of trees in North Area (iNaturalist).

Source: CDFW, 2017a; CNPS, 2017; CCH, 2017; Calflora, 2018; Audubon, 2018; eBird, 2017; iNaturalist, 2017; Shuford and Gardali, 2008; NPS n.d.

Federal Rankings:

FE = Federally Endangered
 FT = Federally Threatened
 BCC = USFWS Bird of Conservation Concern

State Rankings:

SE = State Endangered
 ST = State Threatened
 SR = State Rare
 CST = Candidate for listing as State Threatened
 CFP = California Fully Protected
 SA = CDFW Special Animal
 WL = CDFW Watch List
 CSSC = California Species of Special Concern

Local Rankings

CSB = Sensitive Bird in Los Angeles County (Allen et al., 2009)
 CWL = Los Angeles County Bird Watch List (Allen et al., 2009)
 Locally Uncommon

CRPR Rankings:

CRPR 1A – Presumed extinct in California
 CRPR 1B – Rare or endangered in California and elsewhere
 CRPR 2 – Rare or endangered in California, more common elsewhere
 CRPR 3 – More information needed
 CRPR 4 – Limited distribution (Watch List)

For each CRPR Ranking, the following sub-categories apply:

- .1 = Seriously endangered in California (over 80 percent of occurrences threatened/high degree and immediacy of threat)
- .2 = Fairly endangered in California (20 to 80 percent occurrences threatened)
- .3 = Not very endangered in California (less than 20 percent of occurrences threatened or no current threats known)

ATTACHMENT 3

VEGETATION AND LANDFORMS IN THE NORTH AREA

ATTACHMENT 3 – VEGETATION AND LANDFORMS IN THE NORTH AREA

The North Area falls almost entirely within the Santa Monica Mountains Significant Ecological Area (SEA), and the vegetation descriptions that follow are drawn from the vegetation descriptions and classification presented in the *Draft General Plan 2035, Technical Appendix E* (LA County, 2012) and the National Park Service's (NPS's) *Vegetation Classification of the Santa Monica Mountains National Recreation Area and Environs in Ventura and Los Angeles Counties, California* (CDFG et al., 2006), and reflect the NPS's vegetation mapping spatial data as described in Section 2.4 of this report. Each general vegetation or land cover type is described along with its distribution in the North Area and the corresponding Manual of California Vegetation alliances, as mapped in the NPS vegetation project (Sawyer et al., XXX; CDFG et al., 2006; AIS, 2007).

While the vegetation of the Santa Monica Mountains is extremely varied, it can be categorized broadly as chaparral, coastal sage scrub, oak woodlands, riparian woodlands, and grasslands. Within each general category exists many "alliances", or subgroupings defined by the dominant or co-dominant species present. Thus, there can be multiple different alliances that fall into a general category; these all exhibit the same general structure and similar ecological attributes, but vary somewhat in the species composition. Often these subtle differences in species composition reflect different levels of moisture availability, sun exposure, whether the area has experienced a recent or historic fire, soil differences, and different levels of disturbance. The following describes the alliances mapped in the North Area by the NPS and cooperating agencies that fall within each category, and highlights several unique and remarkable vegetation types and landcovers that do not fall within a defined vegetation type (such as developed or open water areas).

As described in Section 2.4, the vegetation information presented in this report is primarily based on the NPS Santa Monica Mountains vegetation mapping project, and several caveats are warranted. First, vegetation coverage is dynamic and changes over time; the NPS data is currently the best available information on the Area-wide vegetation composition and coverage but some areas will have changed since this mapping effort was completed in 2006. In addition, as noted in the vegetation classification report that accompanied the NPS vegetation mapping data (CDFG et al., 2006):

- The development of a vegetation classification and concomitant map is a complex project. Not all vegetation types are equally mappable at a certain scale. Coordination between the vegetation classification team and the aerial photo interpreters is needed to resolve the best way to map the types, whether directly at the finest association level, at the higher-classification levels (such as at the alliance), or as a mosaic or complex. Thus, not all types described in this report are necessarily mapped directly.

Vegetation communities can also overlap in certain characteristics and, over time, may shift from one community type to another. Note also that all vegetation maps and descriptions are subject to imprecision resulting from several sources, including:

- Vegetation types typically intergrade on the landscape, without precise boundaries. In some cases, vegetation boundaries are distinct, often resulting from events such as wildfire or flood. These boundaries may become much less apparent after years of post-disturbance succession. Therefore, mapped boundaries represent best professional judgment, but should not be interpreted as literal delineations between sharply defined vegetation types.

- Natural vegetation tends to exist in general recognizable types, but also may vary over time and geographic region. Written descriptions cannot reflect all local or regional variation. Many stands of natural vegetation do not strictly fit into any named type. Therefore, a mapped unit is given the best name available in the classification, but this name does not imply that the vegetation unambiguously matches written descriptions.
- Vegetation tends to be patchy. Small patches of one named type are often included within larger stands mapped as units of another type.
- Photo interpretation of some types may be difficult. Accuracy of a vegetation map will vary depending on the level of ground-truthing efforts. For the purposes of this Biological Resources Assessment, key areas were field-verified and updated as needed; however, the large size of the North Area precluded detailed field verification across the entire mapped area.

Chaparral

Chaparral consists of broad-leaved or needle-leaved, sclerophyllous (hard-leaved), medium height to tall shrubs that form a dense cover on steep slopes below 5,000 feet in Southern California. Dominant species found within this community include ceanothus, toyon, scrub oak, sugar bush, holly-leaved cherry, holly leaf redberry, chamise, laurel sumac, and manzanita. This plant community occurs throughout the North Area and occupies most of the higher elevations and steep slopes.

Corresponding alliances and NPS mapping units:

- Big Pod Ceanothus (*Ceanothus megacarpus*) and Greenbark Ceanothus (*Ceanothus spinosus*) and Birch Leaf Mountain Mahogany (*Cercocarpus betuloides*) Shrubland Superalliance
- Big Pod Ceanothus Shrubland Alliance
- Birch Leaf Mountain Mahogany Shrubland Alliance
- Ceanothus and Birch Leaf Mountain Mahogany Shrubland Superalliance
- Ceanothus-Chamise (*Adenostoma fasciculatum*) Shrubland Mapping Unit
- Chamise Shrubland Alliance
- Chamise-Black Sage (*Salvia mellifera*) Shrubland Alliance
- Chamise-Eastwood Manzanita (*Arctostaphylos glandulosa*) Shrubland Alliance
- Chamise-Hoary Leaf Ceanothus (*Ceanothus crassifolius*) Shrubland Alliance
- Chamise-Redshank (*Adenostoma sparsifolium*) Shrubland Alliance
- Chamise-Wedge Leaf Ceanothus (*Ceanothus cuneatus*) Shrubland Alliance
- Greenbark Ceanothus Shrubland Alliance
- Hoary Leaf Ceanothus Shrubland Alliance
- Scrub Oak (*Quercus berberidifolia*) Shrubland Alliance
- Scrub Oak-Birch Leaf Mountain Mahogany Shrubland Alliance
- Scrub Oak-Chamise Shrubland Alliance
- Sugar Bush (*Rhus ovata*) Shrubland Alliance

- Wedge Leaf Ceanothus and Chamise-Wedge Leaf Ceanothus Shrubland Superalliance
- Wedge Leaf Ceanothus Shrubland Alliance

Sensitive corresponding alliances and NPS mapping units:

- Hairy Leaf Ceanothus (*Ceanothus oliganthus*) Shrubland Alliance
- Holly Leaf Cherry (*Prunus ilicifolia*) Shrubland Alliance
- Toyon (*Heteromeles arbutifolia*) Shrubland Alliance

Redshank Chaparral

Redshank chaparral is similar to the chaparral described above, with the exception that red shank is the dominant species with lesser amounts of other chaparral species. This community is less common in the North Area. It occurs in small patches, on steep slopes in the far western portion of the North Area. It often occurs within a mosaic of other chaparral communities, and is adapted to slightly cooler and drier microhabitats.

Sensitive corresponding alliances and NPS mapping units:

- Redshank (*Adenostoma sparsifolium*) Shrubland Alliance

Coastal Sage Scrub

Coastal sage scrub consists of drought-deciduous, low, soft-leaved shrubs and herbs on gentle to steep slopes under 1,500 feet in elevation. This community is dominated by California sagebrush, California buckwheat, black sage, purple sage, and California encelia. Coastal sage scrub is distributed throughout the North Area along dry ridgelines, slopes, and areas previously disturbed by fire. Most coastal sage species can regenerate after fires by sprouting new leaves and branches from the base of the burned shrub. The giant wild rye herbaceous alliance tends to be the first recovery stage after fire, later followed by establishment and development of other coastal sage shrubs. In the North Area, giant wild rye can persist independently of fire in areas of human disturbance and urban runoff or in other coastal sage scrub communities where natural slumping and seeps occur (CDFG et al., 2006). Coyote brush shrubland is another type of coastal sage scrub that can follow fire or other disturbance, and typically contains a large component of non-native plants.

Corresponding alliances and NPS mapping units:

- Black Sage Shrubland Alliance
- Black Sage-California Sagebrush (*Artemisia californica*) Shrubland Alliance
- Bush Mallow (*Malacothamnus fasciculatus*) Shrubland Alliance
- California Buckwheat (*Eriogonum fasciculatum*) Shrubland Alliance
- California Sagebrush Shrubland Alliance
- California Sagebrush-California Buckwheat Shrubland Alliance
- Coyote Brush (*Baccharis pilularis*) Shrubland Alliance
- Deerweed (*Lotus scoparius*) Shrubland Alliance

- Laurel Sumac (*Malosma laurina*) Shrubland Alliance
- Poison Oak (*Toxicodendron diversilobum*) Shrubland Alliance
- Purple Sage (*Salvia leucophylla*) Shrubland Alliance

Sensitive corresponding alliances and NPS mapping units:

- Ashy Buckwheat (*Eriogonum cinereum*) Shrubland Alliance
- Bush Monkey Flower (*Mimulus aurantiacus*) Shrubland Alliance
- California Buckwheat-White Sage (*Salvia apiana*) Shrubland Alliance
- California Encelia (*Encelia californica*) Shrubland Alliance
- Giant Wild Rye (*Leymus condensatus*) Herbaceous Alliance
- Sawtooth Goldenbush (*Hazardia squarrosa*) Shrubland Alliance

Riparian Communities

Riparian Scrub

In the North Area, vegetation mapped as riparian scrub is dominated by mule fat. This vegetation occurs on gentle to steep slopes and is widespread across the North Area in intermittent drainages. It is locally variable, and co-occurring shrubs can include arroyo willow, coyote brush, tree tobacco (nonnative), California sagebrush, and laurel sumac. Riparian scrub has sparse tree cover, but emergent or scattered coast live oak, California sycamore, and red willow can occur. Although alliances dominated by mule fat are not considered sensitive by CDFW, they are considered sensitive for the purposes of this report because riparian habitats are increasingly rare in California and they provide habitat for a disproportionately high number of species compared with most upland habitats, including rare and listed species.

Sensitive corresponding alliances and NPS mapping units:

- Mule Fat (*Baccharis salicifolia*) Shrubland Alliance

Riparian Woodland

Riparian woodlands occur along perennial and intermittent streams in the North Area, and have a well-established tree layer usually with sparse to open shrub and herbaceous layers. Riparian woodlands can be dominated or co-dominated by California sycamore, red willow, and arroyo willow. California walnut and coast live oak can also be present. Riparian woodlands are important wildlife habitats in the North Area.

Sensitive corresponding alliances and NPS mapping units:

- California Sycamore (*Platanus racemosa*) Woodland/Forest Alliance
- Willow (*Salix laevigata*-*Salix lasiolepis*) Woodland/Forest Superalliance Mapping Unit

Broad group Category: Woodlands

Coast Live Oak Woodland

Coast live oak woodland is dominated by coast live oak and has a poorly developed shrub layer, which may include toyon, currant, gooseberry, laurel sumac, elderberry, and mulefat. Some coast live oak woodlands in the area include scattered California walnut or valley oaks. This community occurs throughout the North Area, often along canyon bottoms and more mesic, north-facing slopes.

Oak trees are recognized by the County as significant historical, aesthetic, and ecological resources, and impacts to oaks are regulated under the County's Oak Tree Ordinance which requires an oak tree permit for any impacts to oak trees. Although not considered a sensitive alliance by CDFW, for the purposes of this report coast live oak woodland is considered sensitive consistent with County ordinances and regulations.

Sensitive corresponding alliances and NPS mapping units:

- Coast Live Oak (*Quercus agrifolia*) Woodland/Forest Alliance

Valley Oak Woodland

An open woodland community dominated by valley oak. The understory is a grassy savannah composed mostly of non-native grasses. Valley oak woodland occurs mostly in the north and central portions of the North Area in shaded ravines and on north-facing slopes. Stands of valley oaks typically occur inland and at lower elevations, in savannas on lower slopes of rolling hills, valley bottoms, and upper terraces of floodplains. This community is rare and does not occur in extensive stands. (AIS, 2007)

Sensitive corresponding alliances and NPS mapping units:

- Valley Oak (*Quercus lobata*) Woodland/Forest Alliance

California Bay Woodland

California bay woodland is usually associated with a water source such as seeps or drainages below seeps. It occurs on moist north-facing concave to neutral slopes and protected ravine and canyon bottoms, but can also occur on similar south facing situations. Steepness can vary from gently sloping to extremely steep on bottoms to upper slopes. (AIS, 2007)

Sensitive corresponding alliances and NPS mapping units:

- California Bay (*Umbellularia californica*) Woodland/Forest Alliance

California Walnut Woodland

California walnut woodland is an open woodland dominated by Southern California black walnut. Occurring on moist, fine-textured soils, the open tree canopy usually has a grassy understory. Other characteristic species include coast live oak, sugar bush, and skunk bush. This community occurs in shaded ravines and on north-facing slopes. The North Area includes some of the largest remaining stands of California walnut woodland.

Sensitive corresponding alliances and NPS mapping units:

- California Walnut (*Juglans californica*) Woodland/Forest Alliance

- California Walnut/Undifferentiated Tall Shrubs Shrubland Mapping Unit

Annual Grassland

Grassland communities consist of low, herbaceous vegetation that is dominated by grasses. Grasslands also harbor native forbs and bulbs, as well as naturalized annual forbs. Grasslands within the North Area include both non-native grasslands and native grasslands. Non-native grassland consists of dominant invasive annual grasses that are primarily of Mediterranean origin. Dominant species found within this community include wild oat, slender oat, red brome, ripgut brome, and herbs, such as black mustard and wild radish. Annual grasslands are mapped in small to large patches throughout the North Area in previously disturbed areas, cattle pastures, valley bottoms, and along road sides. Some areas mapped as annual grasslands contain a high proportion of native bunchgrasses and wildflowers such as mariposa lilies (many of which are considered rare species). Small patches of native grasslands and wildflower fields also occur within openings in broader areas mapped as coastal sage scrub.

Corresponding alliances and NPS mapping units:

- California Annual Grassland/Herbaceous Alliance
- “Native Grasslands” although maybe not mapped for this plan

Wetland

Only a few wetland sites were mapped in the NPS’s mapping effort. This habitat contains dense to intermittent herbaceous vegetation in wet soil or shallow standing water, usually at the edge of a water body. It has high cover of herbs. (AIS, 2007)

Sensitive corresponding alliances and NPS mapping units:

- Wetland Undifferentiated Superalliance

Land Forms and Features

Rock Outcrop

This mapping category consists of a sparsely vegetated community occurring on cliffs and rock outcroppings of sedimentary, metamorphic, and volcanic rocks along the ridges and peaks of the hills and mountains. Between the rocks and in the crevices, the few plants found are usually representative of a chaparral species composition. Other plants often found on the rock faces in protected areas include *Dudleya*, *Selaginella*, and various lichens. Agoura Hills dudleya (*Dudleya cymosa* ssp. *agouensis*) is federally listed as Threatened and occurs on rock outcrops in and near the North Area. It is an endemic plant that occurs nowhere else. Rock outcrops are found throughout the North Area, especially in areas of steeper topography.

Sensitive corresponding alliances and NPS mapping units:

- Rock Outcrop Mapping Unit
- Rock Outcrop/Herbaceous Mapping Unit

Water

Areas mapped as water include all natural and man-made water bodies, including creeks, ponds, lakes, open reservoirs, estuaries, and ocean. It also includes the sparsely vegetated to non-vegetated sandy, cobble-covered, or gravelly area within a stream floodplain. A sand or gravel bar is a level flat surface that may be a transitory feature. (AIS, 2007)

Sensitive corresponding alliances and NPS mapping units:

- Sand/Gravel Bar Mapping Unit
- Water Mapping Unit

Agriculture

Most of the agriculture mapped in the North Area consists of vineyard and orchards. This land cover type is most prevalent around Mulholland Highway and Kanan Road and in Triunfo Canyon; in fact, additional vineyards have been developed in these areas since the NPS mapping project data was compiled in 2006.

Corresponding alliances and NPS mapping units:

- Agriculture Mapping Unit

Exotic Vegetation

Corresponding alliances and NPS mapping units:

- Giant Reed (*Arundo donax*) Herbaceous Alliance
- Undifferentiated Exotic Vegetation Mapping Unit

Disturbed

Areas mapped as Disturbed include artificial cuts and embankments, cleared land, fire breaks, and areas that are regenerating after fire or clearing. Disturbed areas often support more ruderal plants such as black mustard, thistle, and tumbleweed.

Corresponding alliances and NPS mapping units:

- Artificial cuts/Embankments Undifferentiated Vegetation Mapping Unit
- Cleared Land Mapping Unit
- Firebreak Early Seral Undifferentiated Vegetation Mapping Unit
- Post-fire and Post-Clearance Shrub Regeneration Mapping Unit

Developed

Developed areas include residential and commercial developments and other built-up areas. Many areas broadly mapped as developed contain pockets or matrices of native vegetation; therefore, this mapping unit does not preclude an area's use as wildlife habitat.

Corresponding alliances and NPS mapping units:

- Urban/Disturbed or Built-up Undifferentiated Mapping Unit

ATTACHMENT 4

REGULATORY SETTING

REGULATORY SETTING

There are a number of laws, regulations, and ordinances that relate to the conservation of biological resources in the North Area; these are summarized below.

Federal Regulations

Federal Endangered Species Act. The Endangered Species Act (ESA) (16 USC 1531 et seq.) establishes legal requirements for the conservation of endangered and threatened species and the ecosystems upon which they depend.

Section 9. Section 9 of the ESA lists those actions that are prohibited under the ESA, including take (i.e., to harass, harm, pursue, hunt, wound, or kill) of listed species without special exemption. “Harm” is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, or shelter. “Harass” is further defined as actions that create the likelihood of injury to listed species to an extent as to significantly disrupt normal behavior patterns which include breeding, feeding, and shelter.

Section 10. Section 10 allows for the “incidental take” of endangered and threatened species by non-federal entities. Incidental take is defined by the ESA as take that is “incidental to, and not the purpose of, the carrying out of an otherwise lawful activity.” Section 10 requires an applicant for an incidental take permit to submit a habitat conservation plan that specifies, among other things, the impacts that are likely to result from the taking and the measures the applicant will undertake to minimize and mitigate such impacts.

Critical Habitat. Designation of an area as critical habitat provides a means by which the habitat of an endangered or threatened species can be protected from adverse changes or destruction resulting from federal activities or projects. A critical habitat designation does not set up a preserve or refuge and usually applies only when federal funding, permits, or projects are involved.

Clean Water Act. The Clean Water Act (33 USC 1251 et seq.) establishes legal requirements for the restoration and maintenance of the chemical, physical, and biological integrity of the nation’s waters.

Section 401. Section 401 requires that an applicant for a federal license or permit that allows activities resulting in a discharge to waters of the United States must obtain a State certification that the discharge complies with other provisions of the Clean Water Act. The Regional Water Quality Control Boards (RWQCBs) administer the certification program in California.

Section 404. Section 404 establishes a permit program administered by the U.S. Army Corps of Engineers (USACE) regulating the discharge of dredged or fill material into waters of the United States, including wetlands. Implementing regulations by the USACE are found at 33 CFR Parts 320-330. Guidelines for implementation are referred to as the Section 404(b)(1) Guidelines and were developed by the EPA in conjunction with the USACE (40 CFR Parts 230). The Guidelines allow the discharge of dredged or fill material into the aquatic system only if there is no practicable alternative that would have less adverse impacts.

Migratory Bird Treaty Act. The Migratory Bird Treaty Act (MBTA) (16 USC 703-711) is a treaty signed by the United States, Canada, Mexico, and Japan that prohibits take of any migratory bird, including eggs or active nests, except as permitted by regulation (e.g., hunting waterfowl or upland game species). Under the

MBTA, “migratory bird” is broadly defined as “any species or family of birds that live, reproduce or migrate within or across international borders at some point during their annual life cycle” and thus applies to most native bird species.

Bald and Golden Eagle Protection Act. The BGEPA (16 USC, 668, enacted by 54 Stat. 250) protects bald and golden eagles by prohibiting the taking, possession, and commerce of such birds and establishes civil penalties for violation of this act. Under BGEPA, take includes “disturb,” which means “to agitate or bother a bald eagle or a golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, (1) injury to an eagle, (2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or (3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior.”

Plant Protection Act of 2000. Prevents importation, exportation, and spread of pests that are injurious to plants, and provides for the certification of plants and the control and eradication of plant pests. The Act consolidates requirements previously contained within multiple federal regulations including the Federal Noxious Weed Act, the Plant Quarantine Act, and the Federal Plant Pest Act.

State Regulations

California Endangered Species Act. The California Endangered Species Act (CESA) (Fish and Game Code 2050 et seq.) establishes the policy of the state to conserve, protect, restore, and enhance threatened or endangered species and their habitats. CESA mandates that state agencies not approve projects that would jeopardize the continued existence of threatened or endangered species if reasonable and prudent alternatives are available that would avoid jeopardy. For projects that affect a species listed under both CESA and the federal ESA, compliance with the federal ESA will satisfy CESA if CDFW determines that the federal incidental take authorization is consistent with CESA under Fish and Game Code Section 2080.1. For projects that will result in take of a species listed under CESA but not under the federal ESA, the applicant must apply for a take permit under Section 2081(b).

Fully Protected Designations – California Fish and Game Code Sections 3511, 4700, 5515, and 5050. Prior to enactment of CESA and the federal ESA, California enacted laws to “fully protect” designated wildlife species from take, including hunting, harvesting, and other activities. Unlike the subsequent CESA and ESA, there was no provision for authorized take of designated fully protected species. Currently, 36 fish and wildlife species are designated as fully protected in California, including golden eagle.

California Senate Bill 618 (signed by Governor Brown in October 2011) authorizes take of fully protected species, where pursuant to a Natural Conservation Community Plan, approved by CDFW. The legislation gives fully protected species the same level of protection as is provided under the Natural Community Conservation Planning Act for endangered and threatened species.

Native Birds – California Fish and Game Code Sections 3503 and 3513. California Fish and Game Code Section 3503 prohibits take, possession, or needless destruction of bird nests or eggs except as otherwise provided by the Code; Section 3503.5 prohibits take or possession of birds of prey or their eggs except as otherwise provided by the Code; and Section 3513 provides for the adoption of the MBTA’s provisions (above). With the exception of a few non-native birds such as European starling, the take of any birds or loss of active bird nests or young is regulated by these statutes. Most of these species have no other special conservation status as defined above. The administering agency for these sections is the CDFW. As with the MBTA, these statutes offer no statutory or regulatory mechanism for obtaining an incidental take permit for the loss of non-game migratory birds.

California Native Plant Protection Act – California Fish and Game Code Sections 1900 *et seq.* Prior to enactment of CESA and the federal ESA, California adopted the Native Plant Protection Act (NPPA). CESA (above) generally replaces the NPPA for plants originally listed as endangered under the NPPA. However, plants originally listed as rare retain that designation, and take is regulated under provisions of the NPPA. The California Fish and Game Commission has adopted revisions to the NPPA allowing CDFW to issue incidental take authorization for listed rare plants, effective January 1, 2015.

Lake and Streambed Alteration Agreements – California Fish and Game Code Sections 1600-1616. Under these sections of the Fish and Game Code, an applicant is required to notify CDFW prior to constructing a project that would divert, obstruct, or change the natural flow, bed, channel, or bank of a river, stream, or lake. Preliminary notification and project review generally occur during the environmental review process. When a fish or wildlife resource may be substantially adversely affected, CDFW is required to propose reasonable project changes to protect the resource. These modifications are formalized in a Lake and Streambed Alteration Agreement (LSAA) that becomes part of the plans, specifications, and bid documents for the project. CDFW jurisdiction is determined to occur within the water body of any natural river, stream, or lake. The term “stream,” which includes creeks and rivers, is defined in Title 14, CCR, Section 1.72.

California Porter-Cologne Water Quality Control Act. Pursuant to the California Porter-Cologne Water Quality Control Act, the State Water Resources Control Board (SWRCB) and the nine RWQCB may require permits (“waste discharge requirements”) for the fill or alteration of “Waters of the State.” The term “Waters of the State” is defined as “any surface water or groundwater, including saline waters, within the boundaries of the state” (California Water Code, Section 13050[e]). Although “waste” is partially defined as any waste substance associated with human habitation, the SWRCB interprets this to include fill discharge into water bodies. The SWRCB and the RWQCB have interpreted their authority to require waste discharge requirements to extend to any proposal to fill or alter “Waters of the State,” even if those same waters are not under the jurisdiction of the USACE.

Pursuant to this authority, the SWRCB and the RWQCB may require the submission of a “report of waste discharge” under Water Code Section 13260, which is treated as an application for a waste discharge requirement.

Oak Woodlands Conservation (SB 1344). California Public Resources Code Section 21083.4 requires each county in California to consider a project’s impacts to oak woodlands during the CEQA environmental review process. If a county determines that there would be significant impacts to oak woodlands, it must require one or more specified mitigation alternatives to mitigate the significant effect of the conversion of oak woodlands.

County of Los Angeles Plans and Ordinances

Santa Monica Mountains North Area Plan (2000). A component of the Los Angeles County General Plan, the SMMNAP’s primary role is to provide more focused policy for the regulation of development within the unincorporated area of the Santa Monica Mountains west of the City of Los Angeles and north of the Coastal Zone boundary--the planning area--as part of the overall General Plan area of Los Angeles County. The North Area Plan refines the policies of the county-wide General Plan as it applies to this planning area. It includes goals and policies to preserve and protect biological resources including undeveloped areas, key watersheds, and biological habitats and linkages.

Santa Monica Mountains Community Standards District. The Santa Monica Mountains North Area Community Standards District is established to implement the goals and policies of the Santa Monica Mountains North Area Plan in a manner that protects the health, safety, and welfare of the community, especially the surrounding natural environment.

Los Angeles County Oak Woodlands Conservation Management Plan (2011). The main goal of the Plan is to preserve and restore oak woodlands so they are conserved in perpetuity with no net loss of existing woodlands. There are three important objectives of the Plan: prioritize the preservation of oak woodlands, promote conservation by integrating oak woodlands into the development process in a sustainable manner, and effectively mitigate the loss of oak woodlands. The Plan implements these objectives through a series of recommendations that are grouped in the following categories:

- Alterations to the County’s development and environmental review process;
- Revisions to the process by which County agencies address impacts to oak woodlands;
- Expansion of goals and policies contained in the County’s General Plan;
- Changes to the County Zoning Code; and
- Long-range implementation and monitoring efforts.

Significant Ecological Areas. SEAs are officially designated areas within Los Angeles County identified as having irreplaceable biological resources. These areas represent the wide-ranging biodiversity of the County and contain some of the County’s most important biological resources. Each individual SEA was configured to support sustainable populations of its component species, and includes undisturbed to lightly disturbed habitat along with linkages and corridors that promote species movement. The Santa Monica Mountains North Area is almost entirely within the Santa Monica Mountains SEA. The County’s SEA Ordinance is currently undergoing an update.

Hillside Management Areas Ordinance. The policies of the Los Angeles County General Plan, and area and community plans where applicable, seek to preserve significant natural features in hillside areas. The Hillside Management Areas Ordinance and the Hillside Design Guidelines implement those policies by ensuring that hillside development projects use sensitive and creative engineering, architectural, and landscaping site design techniques.

Oak Tree Ordinance. The purpose of the County’s Oak Tree Ordinance is to preserve and maintain healthy oak trees in the development process. It requires a permit for impacts to oak trees and their protected zones (i.e., the area within an oak tree’s dripline plus five feet outside the dripline, or 15 feet from the trunk(s) of the oak, whichever is greater).

Rural Outdoor Lighting District Ordinance. This ordinance is an amendment to Title 22 – Planning and Zoning of the Los Angeles County Code to establish a rural outdoor lighting district and regulate outdoor lighting in the district to promote and maintain dark skies at night for the residents and wildlife in the district. The Santa Monica Mountains North Area is within the rural outdoor lighting district.

Vineyard Ordinance. On December 8, 2015, the Los Angeles County Board of Supervisors adopted an ordinance amending Title 22, Section 22.44.133 – Santa Monica Mountains North Area Community Standards District (CSD), which regulates vineyard development in the Santa Monica Mountains North Area. The ordinance defines vineyards as a use, requires a Conditional Use Permit (CUP) for all new and expanding vineyards, and establishes development standards for all new, expanding, and existing vineyards. The regulations contained in the vineyard ordinance are intended to address the potential impacts of vineyard development in the Santa Monica Mountains North Area.