

CHAPTER 3.0

Affected Environment

3.1 Introduction

Chapter 3 describes the environmental components of Bureau of Land Management (BLM) administered lands in the Planning Area that would potentially be affected by implementation of the Proposed RMP. This chapter is organized by resources, resource uses, special designations, public health and safety, social and economic considerations, and environmental justice conditions.

Resources include air, soil, water, vegetative communities, wildlife, special status species, wildland fire ecology and management, and cultural, paleontological, and visual resources. Resource uses include livestock grazing management, minerals, recreation management, transportation and public access, and lands and realty. Special designations include Areas of Critical Environmental Concern (ACECs), units of the National Trails System, Wilderness, and Wilderness Study Areas (WSAs).

3.1.1 Planning Area Setting

The South Coast Planning Area encompasses portions of five highly urbanized southern California counties inhabited by a burgeoning population. The population within the planning area is over 20 million people and is extraordinarily diverse. In addition, over three million people live in Baja California, Mexico, within a few miles of the border. The South Coast Planning Area, formerly known as the South Coast Resource Area, includes the BLM-administered public lands in Southern California that were not designated as part of the California Desert Conservation Area under the Federal Land Policy and Management Act of 1976. In general, these public lands are the scattered parcels west of the coastal mountain ranges, and are interspersed with the major metropolitan cities of Southern California. The entire planning area covers 8,890,000 acres, of which about 3% are BLM-managed public lands.

Ninety-five percent of the BLM public land base in the planning area is in western San Diego and western Riverside Counties. The remainder is in southwestern San Bernardino, Los Angeles, and Orange Counties. Collectively these five counties are experiencing a growth rate over twelve percent, which has resulted in an increase in population from 16.8 million in 1990 to 21.1 million in 2007. Expansion of development is increasingly taking over the remaining open spaces. BLM public lands, in conjunction with four National Forests, form the basis for much of the remaining open space in the region.

The existing environment and the challenges for future management of the BLM public lands within this area are shaped by a multitude of demands related to the dynamic social and economic climate. Heavy demands are placed on resources, such as sand and gravel for construction and land for community expansion, landfills, and corridors for utility, transportation and communication systems. Also needed, however, are viable

natural habitat areas for sensitive species, open space, parks, and recreation. Both Riverside and San Diego Counties have developed habitat conservation plans which preserve open space and sensitive species habitat, and include BLM public lands which serve as the core reserves. As urban expansion continues in southern California, there will be increasing demand for undeveloped land and the values associated with it.

3.1.2 Geographic Setting

The planning area is contained within the Californian biotic province (Munz & Keck, 1968). This biotic province includes the southern California coastal areas, Coast Ranges, and northern Baja California. It reaches up to the edge of the Mojave Desert, on the northern side of the San Gabriel and San Bernardino Mountains in Los Angeles and San Bernardino County respectively, and to the eastern side of the San Jacinto and Laguna Mountains in Riverside and San Diego County respectively. The BLM public land parcels range in elevation from near sea level to over 6,000 feet in elevation. Mean yearly precipitation ranges from 14 inches along the coast to 40 inches in the San Gabriel and Laguna Mountains, and to less than 5 inches in eastern San Diego County.

This east-west precipitation gradient has a profound effect on vegetation. While evergreen broad-leaf and coniferous forests can be found in coastal areas such as the western flank of Otay Mountain, the dry, rocky soils of eastern San Diego County may sustain only sparse chaparral or sage scrub plant communities that contain plants normally associated with desert communities. This range of communities includes a vast number of plant species and also provides habitat for many species of wildlife. Due to development pressures, some of these plant communities, habitats and species are becoming increasingly rare.

There are 62 special status species (36 plant and 26 animal species) that are known to occur or are suspected to occur on BLM lands within the South Coast Planning Area (Table 3-4). A Special Status Species is defined here as a species that is listed by the federal government as endangered, threatened, or as a candidate species, by the State of California as endangered, threatened, or rare, or by the BLM as a Sensitive Species.

In addition to special status species, eleven habitat types identified as rare by Holland (1986) are analyzed in this document. Most of these habitat types are rapidly disappearing in southern California; a few have not historically been common. All eleven habitat types are discussed under the vegetation sections throughout the document. In the wildlife discussions, habitat types are grouped into two general classifications: coastal sage scrub communities and riparian communities. Approximately 130 miles of riparian habitat and approximately 11,033 acres of coastal sage scrub were identified on BLM public lands in the planning area. These two groups of habitat types provide significant values for sensitive species as well as general wildlife.

Over 20 million people live within a one-hour drive of BLM public lands within the South Coast Planning Area. With the wide variety of land forms and vegetation types present, a variety of recreational uses takes place on many of the 296 parcels. Activities include equestrian use, camping, hiking, nature study, photography, off-highway vehicle use, target shooting, and hunting. BLM public land, however, is frequently not used to its full

potential. Use of these lands is most frequently limited by the lack of legal public access across adjoining private lands. In addition, potential users are often deterred from entry because the BLM public lands are rarely signed. In some cases, access is available across another landowning agency's property, or on public roadways.

3.2 Air Resources

The Planning Area encompasses a wide-ranging topography and portions of four air basins — the Mojave Air Basin (MAB), the Salton Sea Air Basin (SSAB), the South Coast Air Basin (SCAB), and the San Diego Air Basin (SDAB). As such, the existing air resource environment in the Planning Area varies by location and may be characterized by identifying of the climatology of the local region, which regulates the transport of emissions; the existing air quality within the local region; and the existing sources of air pollution in the local region. Air resources within the Planning Area are discussed in the following sections.

3.2.1 Climate and Weather

3.2.1.1 Planning Area Climate and Weather

Air basins are regional areas that share the same air masses. Because they tend to restrict air movement on a large scale, mountain ranges or other large topographic features generally define air basins. Although the Planning Area encompasses portions of four air basins in southern California, the climate and weather of these air basins, and southern California in general, is relatively uniform. Therefore, the following discussion of climate and weather covers the entire Planning Area.

The Planning Area consists of a series of mountain ranges that generally extend from north to southeast. West of these ranges the climate is dominated by the influences of the Pacific Ocean. Warm winters, cool summers, small daily and seasonal temperature ranges, and a high relative humidity are characteristic of the coastal area. With increasing distance from the ocean, the marine influence decreases. Compared to the coastal areas, the inland areas experience warmer summers, colder winters, and lower humidity. The coastal mountain areas, which are only affected by ocean influences to a limited degree, experience warmer summers and winters cold enough to allow snowfall at the higher elevations. In the areas east of the coastal mountain ranges, a continental desert regime prevails that is largely a result of the “rainshadow” effect created by the coastal mountains (Western Regional Climate Center [WRCC] 2008a).

A dominating factor in California weather is the semi-permanent high-pressure area that lies in the northeastern Pacific Ocean (Pacific high). With the northward migration of this semi-permanent Pacific high-pressure center during summer, most storm tracks are deflected far to the north. Southern California seldom receives precipitation from Pacific storms during the summer. Occasionally though, moist air drifts northward during the warm summer months from the Gulf of Mexico or the Gulf of California and, scattered,

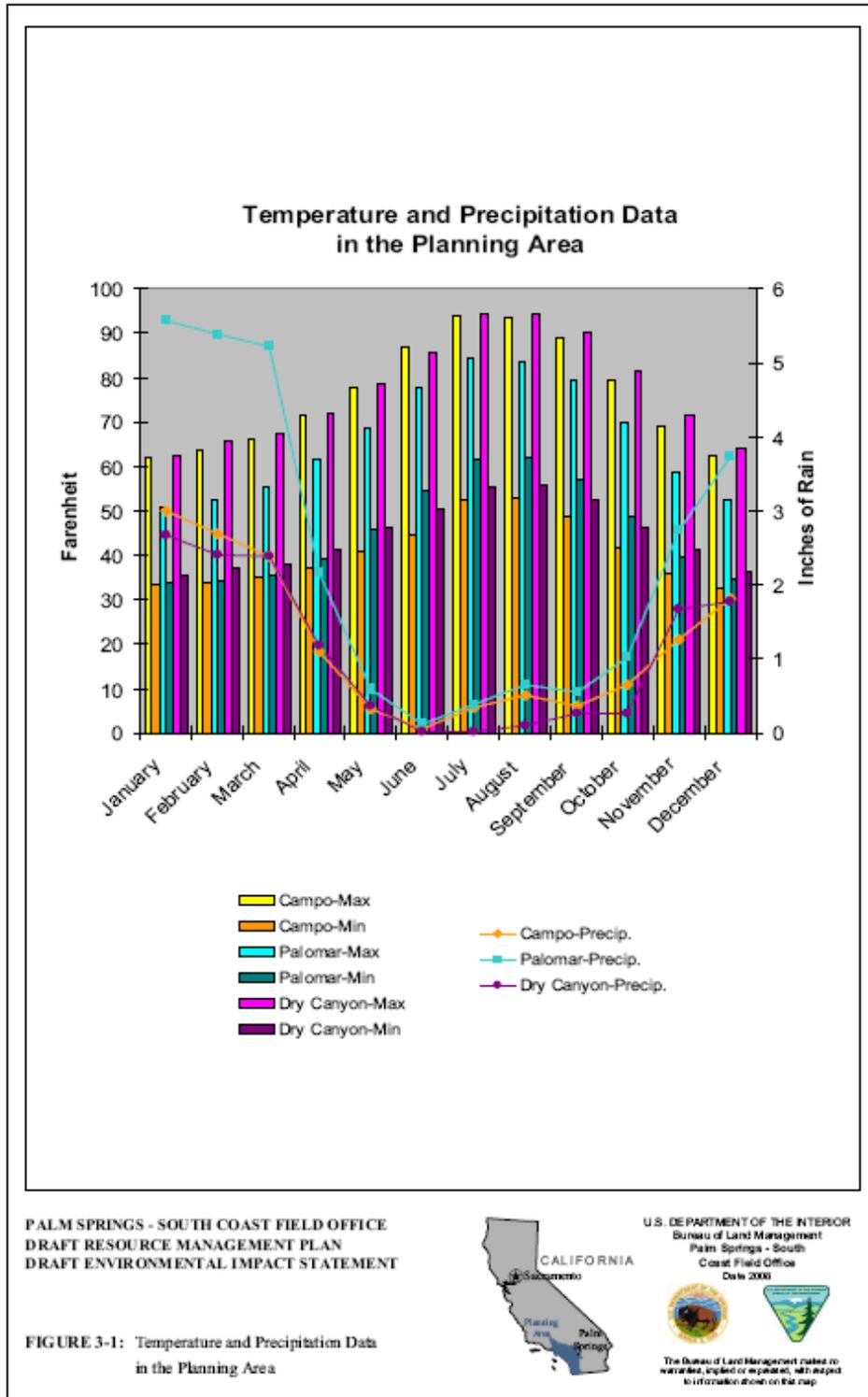
locally heavy showers and thunderstorms occur, mostly over the desert and mountain regions. It is during this period that flash flooding is of greatest concern.

In winter, the Pacific high decreases in intensity and generally moves southward permitting storm centers to swing into and across California. These storms bring widespread, moderate precipitation to southern California at low elevations and snow at higher elevations. Some of these storms travel far enough to the south to spread moisture beyond the Mexican border. When changes in the circulation pattern permit storms to approach the coast from a southwesterly direction, copious amounts of moisture may be carried by the northeastward streaming air. This can result in heavy rains over the region and often produces widespread flooding.

Also during the winter under certain weather conditions, "Santa Ana Winds" may develop. Santa Ana winds flow out of the Great Basin into the Central Valley, the Southeastern Desert Basin, the South Coast, and San Diego areas. The air is typically very dry with strong, gusty winds that sometimes exceed 100 miles per hour (mph), particularly near the mouth of canyons oriented along the direction of airflow. This creates a situation that may lead to serious fire suppression problems and often results in the temporary closing of sections of main highways to campers, trucks, and light cars (WRCC 2008a). It is during these Santa Ana wind events that some of the worst wildfires in the State's history have occurred.

It is of note that the maximum intensity of precipitation for periods of 12 hours or longer which might be expected at intervals of 10 to 100 years is greater in portions of the San Gabriel and San Bernardino Mountains in southern California than anywhere else in the continental United States (WRCC 2008a). Because most storms affecting southern California originate in the north and move south, rainfall amounts are generally greater in the northern portions of the Planning Area than in the southern portions.

Temperature and rainfall data were obtained from Campo, located in southern San Diego County within the San Diego County Management Area; Palomar Mountain Observatory, located in the San Diego County Management Area near the Beauty Mountain Management Area; and Dry Canyon Reservoir, near BLM-administered lands in Northern Los Angeles County. Map 3-1 shows the location of these weather stations in relation to the Planning Area, and Figure 3-1 shows the temperature and precipitation data from these stations. Temperature data from Campo show average annual monthly temperatures ranging between maximums of 62° to 94° Fahrenheit (F) and minimums of 33° to 53°F. Temperature data from the Palomar Mountain Observatory show average annual monthly temperatures ranging between maximums of 51° to 84° and minimums of 34° to 62°F. Temperature data from Dry Canyon Reservoir show average monthly temperatures ranging between maximums of 63° to 94°F and minimums of 36° to 56°F. The average annual precipitation is 15, 28, and 33 inches at Campo, Palomar Mountain Observatory, and Dry Canyon Reservoir, respectively. The annual average snowfall is 0.5, 34, and 0.1 inches at Campo, Palomar Mountain Observatory, and Dry Canyon Reservoir, respectively. The majority of precipitation falls from November to April (WRCC 2008b).

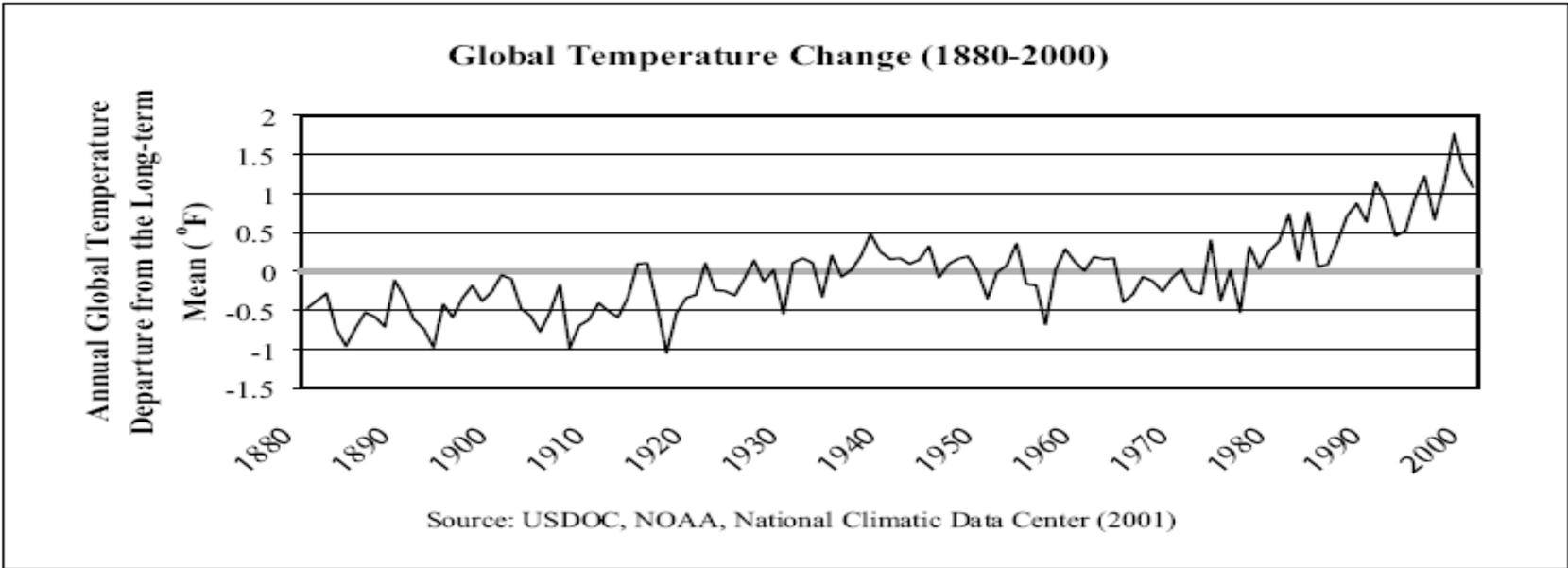


3.2.1.2 Global Climate Change

So-called “greenhouse” gases include carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), and other natural and manmade compounds. Under natural conditions, greenhouse gases are vital, because they maintain global ambient temperatures within ranges suitable for life on earth. However, excess greenhouse gas emissions, including those resulting from human activities, increase the concentration of these gases in the atmosphere and contribute to overall global climatic changes. Large quantities of greenhouse gas emissions may decrease the amount of infrared or heat energy radiated by the earth back to space and upset the global temperature balance. Thus, increased greenhouse gas concentrations in the atmosphere are believed to be associated with the current warming of the earth typically referred to as “global warming.” Human activities associated with increased carbon dioxide emissions include fossil fuel combustion and the loss/destruction of tropical forests. Global warming may ultimately contribute to a rise in sea level and changes in regional temperature and rainfall pattern (Arctic Climate Impact Assessment [ACIA] 2004).

Global mean surface temperatures have increased 0.5°F to 1.0°F since the late 19th century (Figure 3-2). The 20th century’s 10 warmest years all occurred in the last 15 years of the century. Of these, 1998 was the warmest year on record. Globally, the sea level has risen 4 to 8 inches over the past century.

Current trends of global climate change include temperature increases and may also include changes in rainfall patterns. Statewide average temperatures are anticipated to increase by between 3°F and 10.5°F by 2100. Total annual precipitation and statewide rainfall patterns are anticipated to change little over the next century. However, because of rising temperatures much of this precipitation may fall as rain rather than snow thus affecting the Sierra snowpack and future water supplies. It is also possible that the intensity and frequency of extreme storm events could increase (State of California 2006).



PALM SPRINGS - SOUTH COAST FIELD OFFICE
DRAFT RESOURCE MANAGEMENT PLAN
DRAFT ENVIRONMENTAL IMPACT STATEMENT

FIGURE 3-2: Global Temperature Change (1880-2000)



3.2.2 Air Quality

The Clean Air Act (CAA), enacted in 1970, authorized the Environmental Protection Agency (EPA) to set air quality standards and regulate emissions of pollutants into the air to protect human health and the environment. The CAA authorized the EPA to achieve this objective by setting air quality standards for mobile (e.g., automobile) and stationary (e.g., factories) sources of pollutant emissions. Emissions controls and regulations developed to achieve the air quality standards are implemented in California through the EPA and California Air Resources Board. Regional air pollution control agencies are responsible for enforcement of regulations within their respective jurisdictions. These agencies are described below for each of the management areas within the South Coast Planning Area.

The EPA has established primary and secondary National Ambient Air Quality Standards (NAAQS) for seven criteria pollutants (carbon monoxide, nitrogen dioxide, particulate matter less than 10 microns [PM₁₀], particulate matter less than 2.5 microns [PM_{2.5}], ozone, sulfur dioxide, and lead). Primary standards are adopted to protect public health, and secondary standards are adopted to protect public welfare. States are allowed to adopt ambient air quality standards which are at least as stringent as the federal NAAQS. California has adopted standards more stringent than federal standards for some pollutants. Table 3-1 lists both the federal and California ambient air quality standards.

**Table 3-1
Ambient Air Quality Standards**

Pollutant	Averaging Time	California Standards	Federal Standards	
		Concentration	Primary	Secondary
Ozone (O ₃)	1 Hour	0.09 ppm (180 µg/m ³)	—	Same as Primary Standard
	8 Hour	0.070 ppm (137 µg/m ³)	0.075 ppm [†]	
Respirable Particulate Matter (PM ₁₀)	24 Hour	50 µg/m ³	150 µg/m ³	Same as Primary Standard
	Annual Arithmetic Mean	20 µg/m ³	—	
Fine Particulate Matter (PM _{2.5})	24 Hour	No Separate State Standard	35 µg/m ³	Same as Primary Standard
	Annual Arithmetic Mean	12 µg/m ³	15 µg/m ³	
Carbon Monoxide (CO)	8 Hour	9.0 ppm (10 mg/m ³)	9 ppm (10 mg/m ³)	None
	1 Hour	20 ppm (23 mg/m ³)	35 ppm (40 mg/m ³)	
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m ³)	—	—

**Table 3-1
Ambient Air Quality Standards**

Pollutant	Averaging Time	California Standards	Federal Standards	
		Concentration	Primary	Secondary
Nitrogen Dioxide (NO ₂)*	Annual Arithmetic Mean	0.030 ppm (56 µg/m ³)	0.053 ppm (100 µg/m ³)	Same as Primary Standard
	1 Hour	0.18 ppm (338 µg/m ³)	—	
Sulfur Dioxide (SO ₂)	Annual Arithmetic Mean	—	0.030 ppm (80 µg/m ³)	—
	24 Hour	0.04 ppm (105 µg/m ³)	0.14 ppm (365 µg/m ³)	—
	3 Hour	—	—	0.5 ppm (1300 µg/m ³)
	1 Hour	0.25 ppm (655 µg/m ³)	—	—
Lead	30 Day Average	1.5 µg/m ³	—	—
	Calendar Quarter	—	1.5 µg/m ³	Same as Primary Standard
Visibility Reducing Particles	8 Hour	Extinction coefficient of 0.23 per kilometer – visibility of 10 miles or more due to particles when relative humidity is less than 70 percent.	No Federal Standards	
Sulfates	24 Hour	25 µg/m ³	No Federal Standards	
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m ³)	No Federal Standards	
Vinyl Chloride	24 Hour	0.01 ppm (26 µg/m ³)	No Federal Standards	

Table 3-1 NOTES:

ppm = parts per million

µg/m³ = micrograms per cubic meter.

*The Nitrogen Dioxide ambient air quality standard was amended on February 22, 2007, to lower the 1-hr standard to 0.18 ppm and establish a new annual standard of 0.030 ppm. These changes become effective after regulatory changes are submitted and approved by the Office of Administrative Law, expected later this year.

‡ The Federal ambient air quality standard for ozone was amended on March 12, 2008, to lower the 8-hr standard from 0.08 ppm to 0.075 ppm.

Air basins are designated as in attainment or non-attainment of the air quality standards for each air pollutant. Section 176 of the Clean Air Act (CAA) requires any action on the part of a federal agency in a non-attainment area that does not meet one or more of the NAAQS for the criteria pollutants to conform to the state's plans to attain and maintain these standards (i.e., State Implementation Plans or SIPs).

As indicated, the Planning Area falls within four air basins. Where an air basin occurs within a single county — as is the case for the San Diego Air Basin — a county air pollution control district (APCD) is formed that sets and enforces air quality rules and regulations. Where an air basin encompasses several counties, air quality management

districts (AQMD) are formed to set and enforce air quality rules and regulations across the jurisdictional boundaries. Map 3-1 shows the locations of the air basin, air pollution control district, and air quality management district boundaries in relation to the Planning Area.

As seen in Map 3-1, the Planning Area encompasses portions of the Mojave, Salton Sea, San Diego, and South Coast Air Basins. Within the Planning area, these various air basins are under the jurisdictions of the Antelope Valley AQMD, the Mojave Desert AQMD, the San Diego APCD, or the South Coast AQMD.

3.2.2.1 Los Angeles County Management Area

The Los Angeles County Management Area lies primarily within a western portion of the South Coast Air Basin, managed by the South Coast Air Quality Management District. A small portion of the Los Angeles County Management Area also lies within the Mojave Desert Air Basin that is managed by the Antelope Valley Air Quality Management District.

South Coast Air Basin (South Coast Air Quality Management District). Air quality within the South Coast Air Basin is described in Section 3.1.2.2 above.

Mojave Desert Air Basin (Antelope Valley Air Quality Management District). The portion of the Mojave Desert Air Basin managed by the Antelope Valley Air Quality Management District is a moderate non-attainment area for ozone (O₃) under federal standards and is classified as an extreme non-attainment area for ozone under state standards. The Mojave Desert Air Basin within the Antelope Valley Air Quality Management District is a non-attainment area for PM₁₀ under state standards, and is listed as unclassified for PM_{2.5} under state standards. The Mojave Desert Air Basin within the Antelope Valley Air Quality Management District is listed as unclassifiable / attainment for the federal PM₁₀ and PM_{2.5} standards.

Air Monitoring Stations. There are 27 air monitoring stations within the Los Angeles County Management Area in the South Coast Air Basin. Map 3-2 indicates the relationship of the various monitoring stations to the BLM-administered lands within the Riverside–San Bernardino County Management Area.

3.2.2.2 Riverside–San Bernardino County Management Area

The Riverside–San Bernardino County Management Area lies primarily within a central portion of the South Coast Air Basin, managed by the South Coast Air Quality Management District. Small portions of the Riverside–San Bernardino County Management Area also lie within the Salton Sea Air Basin, which is also managed by the South Coast Air Quality Management District, and the Mojave Desert Air Basin, which is managed by the Mojave Desert Air Quality Management District.

South Coast Air Basin (South Coast Air Quality Management District). Air quality within the South Coast Air Basin is described in Section 3.1.2.2 above.

Salton Sea Air Basin (South Coast Air Quality Management District). The portion of the Salton Sea Air Basin that is managed by the South Coast Air Quality Management

District is a serious non-attainment area for ozone (O_3) under federal standards and is classified as an extreme non-attainment area for ozone under state standards. The Salton Sea Air Basin is also a non-attainment area for PM_{10} under both state and federal standards. The Salton Sea Air Basin is listed as unclassifiable / attainment for the state and federal $PM_{2.5}$ standards.

Mojave Desert Air Basin (Mojave Desert Air Quality Management District). The portion of the Mojave Desert Air Basin managed by the Mojave Desert Air Quality Management District is a moderate non-attainment area for ozone (O_3) under both federal and state standards. The Mojave Desert Air Basin is also a non-attainment area for PM_{10} under both state and federal standards. The Mojave Desert Air Basin is listed as unclassifiable/attainment for the federal $PM_{2.5}$ standard, and is listed as a state $PM_{2.5}$ non-attainment area for the portion of the basin which is within the Planning Area.

Air Monitoring Stations. There are 21 air monitoring stations within the Riverside–San Bernardino County Management Area in the South Coast Air Basin. Map 3-2 indicates the relationship of the various monitoring stations to the BLM-administered lands within the Riverside–San Bernardino County Management Area.

3.2.2.3 Beauty Mountain Management Area

The Beauty Mountain Management Area lies within portions of the San Diego Air Basin, managed by the San Diego Air Pollution Control District; and the South Coast Air Basin, managed by the South Coast Air Quality Management District.

San Diego Air Basin (San Diego Air Pollution Control District). Air quality within the San Diego Air Basin is described in Section 3.2.2.1 above.

South Coast Air Basin (South Coast Air Quality Management District). The South Coast Air Basin is a severe non-attainment area for ozone (O_3) under federal standards and is classified as an extreme non-attainment area for ozone under state standards. The South Coast Air Basin is also a non-attainment area for $PM_{2.5}$ and PM_{10} under both state and federal standards. The South Coast Air Basin is listed as a federal maintenance area for CO and NO_x .

Air Monitoring Stations. There are no air monitoring stations within the Beauty Mountain Management Area. The nearest air monitoring station to BLM-administered lands in the Beauty Mountain Management Area is the Agua Tibia monitoring station located approximately seven miles west of the management area. This station, operated by the National Park Service, only monitors particulate matter. Map 3-2 indicates the locations of other monitoring stations within the Planning Area.

3.2.2.4 San Diego County Management Area

The San Diego County Management Area lies entirely within the San Diego Air Basin, managed by the San Diego Air Pollution Control District.

San Diego Air Basin (San Diego Air Pollution Control District). The San Diego air basin is a basic non-attainment area for ozone (O_3) under federal standards and is

classified as a serious non-attainment area for ozone under state standards. The San Diego air basin is also a non-attainment area for PM_{2.5} and PM₁₀ under state standards. The San Diego air basin is listed as unclassifiable/attainment for the federal PM₁₀ and PM_{2.5} standards, and is a federal maintenance area for CO. It is in attainment of all other criteria pollutant standards.

Air Monitoring Stations. As seen in Map 3-2, there are numerous air monitoring stations located throughout and adjacent to the Planning Area. Generally, the monitoring stations are located in or near to urbanized areas. There are 12 air monitoring stations within the San Diego County Management Area plus seven air monitoring stations in Mexico near the border with San Diego which are operated by a contractor to the California Air Resources Board.

3.2.3 General Conformity

On November 30, 1993, the EPA promulgated its rules for determining general conformity of federal actions with state air quality implementation plans, as required by CAA Section 176(c). The State Implementation Plan (SIP) is a collection of documents that set forth the state's strategies for achieving the air quality standards. The various air pollution control and air quality management districts are responsible for preparing and implementing the portion of the SIP applicable to the air basins within the Planning Area. The districts adopt rules, regulations, and programs to attain state and federal air quality standards, and appropriate money (including permit fees) to achieve these objectives.

To demonstrate conformity with a local SIP, an action must clearly demonstrate that it does not:

- cause or contribute to any new violation of any standard in the area;
- interfere with provisions in the applicable SIP for maintenance or attainment of air quality standards;
- increase the frequency or severity of any existing violation of any standard; or
- delay timely attainment of any standard, any interim emission reduction, or other milestones included in the SIP for air quality.

The EPA has developed specific procedures for conformity determinations for federal actions, which include preparing an assessment of emissions associated with the action based on the latest and most accurate emissions estimating techniques.

Activities in the Planning Area that generate air pollutants include motorized and non-motorized recreational use; vehicle travel; fires (including planned and unplanned ignitions); fire suppression with heavy equipment; construction and maintenance of facilities and roads; mining activities; and remedial earthwork and revegetation.

3.2.4 Regional Haze Rule

The national visibility goal, established in section 169(A) of the CAA Amendments of 1977, requires the “prevention of any future, and the remedying of any existing, impairment of visibility in mandatory Federal Class I areas which impairment results from manmade air pollution.” In 1999, under the 1990 CAA, the EPA promulgated the Regional Haze Rule to protect visibility in 156 mandatory Federal Class I areas. Federal Class I areas are defined in the CAA as national parks over 6,000 acres and wilderness areas and memorial parks over 5,000 acres, established as of 1977 (USEPA 2001).

There are a number of Wilderness Areas (WAs) in the Planning Area under the jurisdiction of the BLM and other government agencies. Five of these WAs are designated as Mandatory Federal Class I Areas. These five WAs are: the Agua Tibia WA, managed by the United States Department of Agriculture Forest Service (USDA FS); the Cucamonga WA, managed by the USDA FS; the San Gabriel WA, managed by the USDA FS; the San Jacinto WA, managed by the USDA FS; and the San Gorgonio WA, with both the USDA FS and the BLM managing portions of this WA.

Because these five WAs are under federal jurisdiction, they are subject to the Regional Haze Rule (40 CFR Part 51 Regional Haze Regulations; Final Rule, Federal Register / Vol. 64, No. 126 / Thursday, July 1, 1999 / Rules and Regulations). The final rule calls for states to establish goals aimed at improving visibility in the mandatory Federal Class I areas and also to develop long-term plans for reducing pollutant emissions that contribute to visibility degradation. The Regional Haze Rule requires states to establish goals for each affected Class I area to 1) improve visibility on the haziest days; and 2) ensure that no degradation occurs on the clearest days over the period of each implementation plan. The California Air Resources Board released the California Regional Haze Plan in January 2009.

There is one visibility monitoring site within the Planning Area, in the San Gorgonio Wilderness Area operated by the program known as the Interagency Monitoring of Protected Visual Environments (IMPROVE). From 1988 through 1998, the period reviewed in the latest EPA analysis, there was a significant trend indicating improved visibility for the most-impaired days and there was no significant trend in visibility on the least-impaired days (USEPA 2001). This indicates that current trends are in accordance with goals 1 and 2 above.

Sulfate particles were responsible for 13 to 25 percent of the light extinction at the San Gorgonio WA site, averaging 23 percent on an annual basis over a five-year period. The contributions from nitrates (ammonium nitrate, nitric acid, and NO_x) ranged between 25 and 65 percent, with the highest percentages in winter, averaging 39 percent on an annual basis over a five-year period. From all of the IMPROVE monitors nationwide, the San Gorgonio WA site has the highest annual nitrate concentrations and the highest fractional contributions to light extinction from nitrates. Natural sources of NO_x include soils, wildfires, and lightning. Manmade sources of NO_x include motor vehicle exhaust, prescribed burning, and other fossil fuel combustion processes. Oxidized nitrate gases combine with ammonia (emitted from motor vehicles, land fertilizers, animals, and other sources) to form particulate matter (USEPA 2001).

3.2.5 References

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3.3 Soil Resources

Sixty-eight different soil series and sixteen landforms are found on BLM-administered lands in the South Coast Resource Management Plan (SCRMP) Planning Area (USDA 1973). These soils series and landforms are further divided into 251 different mapping units. The mapping units are each defined by slope phases and surface textures.

Usually two or more mapping units per soil series or sometimes two series are mapped together as a single mapping unit. Map 3-3 shows the BLM-managed lands in relation to environmentally sensitive management areas. Maps 3-4 through 3-6 show the soil types within each of the BLM management areas.

The South Coast Resource Planning Area includes four major management areas that are described in three soil surveys. The four management areas and the soil surveys that cover those areas are the shown on Maps 3-4 through 3-6.

- Los Angeles County Management Area (USDA 2008)
- Riverside–San Bernardino County Management Area (Knecht 1971; USDA 2008)
- Beauty Mountain Management Area (Bowman 1973; Knecht 1971; USDA 2008)
- San Diego County Management Area (Bowman 1973; USDA 2008).

Each of the management areas include scattered groupings of disjunct BLM parcels that have similar soil characteristics that can be generalized to guide management decisions for the benefit of the resource and its users. The Natural Resource Conservation Service (NRCS) soil map polygons are labeled with mapping unit symbols that have a high level of resolution supported by data that describes soil series, slope, surface texture, moisture, and temperature regime. Rather than attempting to provide this level of detail over the entire Planning Area, the purpose of the soil description presented here is to generalize what soil characteristics are the most sensitive or require special treatment and the location of those soils.

3.3.1 Sensitive Soil Characteristics

Sensitive soils in the SCRMP are those that are associated with sensitive species or habitats and soils that have engineering limitations with respect to building roads, trails, bridges, and culverts or energy development such as wind farms. The remaining soils, while not necessarily sensitive, all fall into one major category: soils with enough fertile organic material in the surface horizon to support dense stands of scrub or chaparral habitat.

Maps 3-4 through 3-6 generalize the NRCS soils survey data to relate the major characteristics of soils within the SCRMP to their management sensitivity (1) Endemic Flora-related Soils (2) Fertile Scrub Soils and (3) Soils with Engineering Limitations. Table 3-2 summarizes the acres of soils with these characteristics for each of the Management Areas.

Table 3-2
Soil Management Characteristics for South Coast Management Areas;
Summary of Acres of Soil Types by Management Area

Type of Soils		Taxonomic Order	San Diego County MA	Beauty Mountain MA	Riverside–San Bernardino County MA	Los Angeles County MA	Totals
Soils With Engineering Limitations		Entisols	8,582	821	5,863	1,358	16,624
		Inceptisols	590		2,261	1,580	4,430
		Water-worked, Bare, or Rock Land	12,713	8,731	6,775	503	28,722
		Total	21,885	9,552	14,899	3,441	49,777
Fertile Scrub Soils		Mollisols	22,157	23,781	11,699	182	57,819
		Total	22,157	23,781	11,699	182	57,819
Endemic Flora Related Soils	Non-Gabbro Derived	Alfisols	1,470	354	2,748	1,041	5,613
		Vertisols			131		131
		Total	1,470	354		1,041	5,744
	Gabbro Derived	Alfisols	18,929		553	455	19,937
		Vertisols			54		54
		Total	18,929		607	455	19,991

3.3.1.1 Endemic Flora-Related Soils

Endemic flora-related soils generalize all of the soils within the SCRMP that have an argillic horizon: a subsurface layer with higher clay content than the surface horizon or epipedon. Water transports clay from the surface as it infiltrates subsurface horizons to form an argillic horizon. All of the soils that have an argillic horizon in the SCRMP fall within the “alfisol” soil order. Alfisols are soils with an argillic horizon that are high in pH basic cations like calcium and magnesium (base saturation of 35% or greater). They are derived from high base nutrient or “mafic” parent materials, such as basalt or gabbro, which are ultra-mafic.

Soils that are derived from gabbro in the SCRMP have clays that are high in base minerals but also have a mineral imbalance with too much magnesium compared to calcium. Thus, many exotic or invasive plants are out-competed by endemic species that are uniquely adapted to these soils. Some of these endemic species are restricted to these ultra-mafic gabbro soils and for this reason are rare. Several of these gabbro endemics within the SCRMP are also threatened or endangered.

The Endemic Flora-related Soils in Maps 3-4 to 3-6 represent a continuum of clay soils that range between mafic and ultra-mafic, and provide a broad-scale planning tool for identifying regions that may support clay endemic or gabbro clay endemic flora. Furthermore, they represent habitats that have a generally higher proportion of California native flora and particularly California native grasses. Without competition from non-native grasses, patches of bare soil or soils with “cryptogamic crusts”, such as mosses and lichens, remain and provide a canopy structure with open areas that are conducive to movement and foraging for reptiles, small mammals, and birds. When these areas remain undisturbed, they may support a greater density and/or diversity of native wildlife than areas dominated by Mediterranean grasses.

The query of the NRCS “SSURGO” database for gabbro-derived soils returned the Boomer, Las Posas, and San Miguel soil series in the alfisol soil order and the Auld series in the vertisol order. Vertisols are soils that are very high in clay and have a high shrink-swell capacity. At least one month out of the year they will dry enough to leave deep cracks in the soil. This shrinking and swelling also causes problems for underground utilities and construction. They are not grouped with soils that have engineering limitations only because their acreage in the Planning Area is relatively small and endemic plants are the primary concern on these soils because the ones in the Planning Area are also gabbro-derived.

Non-gabbro-derived soils accounted for the remaining alfisols including: Agua Dulce, Arlington, Bosanko, Bull Trail, Cajalco, Fallbrook, Greenfield, Holland, Huerhuero, Madera, Monserate, Ojai, Olivenhain, Placentia, Porterville, Ramona, Wyman, Yokohl and Ysidora. These series also have a base saturation greater than 35 percent but without the mineral imbalance that gabbro-derived soils have. There are a number of “clay endemic” flora associated with these soils, and some are found on both gabbro and non-gabbro clay soils. Most soil series have inclusions of other soils within them; therefore gabbro-derived soils and sensitive species may well be found in any of these soil series.

Gabbro-derived soils may also have other non-gabbro or even non-clay soils within them. Clay soils in southern California on mesas and alluvial plains are frequently associated with vernal pools and wetlands, because these soils often have a water-limiting layer that ponds water at the surface. Most of the gabbro soils within the SCRMP however, are on slopes. Any of the other general soil classifications represented by the map in Maps 3-4 through 3-6 may have inclusions of soils that have special management considerations.

3.3.1.2 Soils with Engineering Limitations

The majority of the SCRMP Planning Area falls in a high-erosion-hazard class identified on Maps 3-4 through 3-6 as soils with engineering limitations. Most of the erosion hazard arises, because these soils are naturally barren or sandy with little cohesion and are susceptible to human disturbances associated with development and recreation.

Sensitive soils that do not have series names are identified in the maps as water-worked, bare, or rock landforms. They are grouped with entisol and inceptisol soil orders on the maps in Maps 3-4 through 3-6, because they all have engineering limitations and are frequently located in or near water, streams, canyons and arroyos. The “entic” prefix in entisols means that they are perpetually juvenile and lack soil development characteristics, while inceptisols have “incipient” soil development characteristics. The water-worked soils include the alluvial fans, terrace escarpments, streams, and arroyos frequently supporting riparian habitats with sensitive endemic flora.

There are several engineering limitations associated with the entisols and inceptisols, and with the subset of water-worked inceptisols and entisols that are often classified at the soil order level instead of soil series level. They appear on soil survey maps as badlands, rock land, or bare soil mapping units. These entisols and inceptisols present barriers to traffic and road construction, because they are often deeply dissected by water flow or other natural erosional features that require bridges and culverts. They tend to be prone to erosion, because they are sparsely covered with vegetation and often have sandy textures that crumble easily such as decomposed granite. These soil types are especially prone to erosion, when bisected by roads in areas that are frequently flooded or on steep slopes. They have a higher potential to produce landslides or debris torrents after a fire when they occur on steep, concave slopes and are shallow over bedrock.

Water-worked soils, entisols and inceptisols may also meet the criteria for “hydric soils” or wetlands and are subject to jurisdiction of the U.S. Army Corps of Engineers (USACE) or California Department of Fish and Wildlife (CDFG) especially when they occur in or near channels. These criteria must be determined on a case-by-case basis with a wetland delineation preceding any surface-disturbing activity.

3.3.1.3 Fertile Scrub Soils

These soils are in the order mollisols. They are soils that in general have a dark surface horizon, 50-percent or greater base saturation, and 0.6 percent or more organic material in the top 10 inches of the soil. This dark surface horizon is an indicator of organic

carbon and it holds more nutrients than soils that are low in organic matter. These soils can produce dense stands of chaparral and scrub vegetation. While the mollisols are not sensitive soils, they may be more prone to fire when fuels build to unsafe levels as the habitat becomes senescent.

3.3.2 Los Angeles County Management Area

The Los Angeles County Management Area (Map 3-6) includes parcels clustered in the Santa Monica Mountains in four areas from north to south:

- The crest of the Santa Monica Mountains several miles east of the “Grapevine” grade on Interstate 5 with engineering limitations classified as rough broken land and gullied land.
- The Lake Castaic Area; soils with engineering limitations including inceptisols in the Millshom series that are shallow to bedrock and soils in the Castaic series that are deeper with carbonates in the profile and organic material in the surface horizon but still poorly developed and classified as inceptisols.
- Above Arroyo Simi; soils with engineering limitations with entisols in the Gaviota series that are shallow to bedrock coupled with inceptisols in the Castaic series.
- Several clusters of parcels on either side of State Route 14 that are strongly influenced by alluvial action and include soils with engineering limitations: terrace escarpments, sandy alluvial land, entisols that are shallow over bedrock including the Amargosa and Gaviota series, inceptisols in the Vista series and some gabbro clay alfisols in the Las Posas series that may support gabbro endemic flora. The terrace escarpments and sandy alluvial land are associated with unique and rare habitats in Los Angeles County that may support endemic flora and fauna.

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3.3.3 Riverside–San Bernardino County Management Area

3.3.3.1 Locations of Endemic Flora-related Soils

Non-Gabbro Soils

Areas that have predominantly clay soils within the Riverside–San Bernardino County Management Area (Map 3-5) are mostly non-gabbro but often they do have inclusions of gabbro-derived soils within the mapping unit. The San Jacinto / Perris basin and areas west to the Santa Ana Mountains are characterized by mesas and hills with broad flat valleys. From east to west the areas with non-gabbro clay soils are as follows:

- 1) Small areas of non-gabbro soils interspersed with inceptisols occur in the BLM-managed units in the Potrero Area ACEC south of Interstate 10 (I-10).
- 2) The foothills of the San Bernardino Mountains east of Valley Vista north of Bautista Creek and also on the north of the San Jacinto River have non-gabbro clay soil surrounded by a mapping unit called rough broken land.
- 3) The Lakeview Mountains near Juniper Flats have non-gabbro clay soils.
- 4) Tocalota Hills east of Skinner Reservoir have non-gabbro clay soils adjacent to Rockland. Just north of Skinner Reservoir and Bachelor Mountain there is a small area of non-gabbro soil south of Rawson Road.

Several areas in between Interstates 15 and 215 that are mostly mapped as non-gabbro soils also have some areas of gabbro soils and are near some of the critical habitat areas for Munz's onion, *Allium munzii*, a state threatened, federally endangered plant that grows in both gabbro and non-gabbro clay soils. The BLM areas that have mostly non-gabbro soils with some inclusions of gabbro soils are located:

- 1) In the hills north of the Santa Rosa Plateau Reserve and south of Bundy Canyon and Sedco Hills.
- 2) Around Railroad Canyon Reservoir.
- 3) North of Dawson Canyon around Monument Peak and Black Rocks at the head of Olsen Canyon (south of Lake Matthews).

Gabbro Soils

The predominantly gabbro-derived soils are mostly in the southern part of the management area of the Riverside–San Bernardino County Management Area and are mixed with clay soils that may not be gabbro but are still ultra-mafic. BLM areas that have these soils from south to north are:

- 1) Big Oak Mountain, north of Vail Lake on the north side of SR 79-South and in the Agua Tibia WSA on the south side of SR 79-south. These soils are mafic or trending toward gabbro, which is ultra-mafic. This is an area that harbors both the state and federally endangered Nevin's barberry (*Berberis nevinii*) and the state endangered federally threatened Vail Lake ceanothus (*Ceanothus ophiochilus*). Critical habitat for Nevin's barberry is on BLM-managed land at Big Oak Mountain, and the BLM-managed land in the Agua Tibia WSA is adjacent to critical habitat for Vail Lake ceanothus. The Vail Lake area is also a historical location of the state endangered and federally threatened thread-leaf brodiaea (*Brodiaea filifolia*), which is found in a variety of heavy clay soils usually around vernal pools or riparian areas. The habitats in this region have been impacted by fires in 2000, 2004, and 2006.
- 2) The BLM-managed lands in Temecula Canyon along the Santa Margarita River are mostly gabbro-derived soils.
- 3) The hills north of the Santa Rosa Plateau Reserve and south of Bundy Canyon and Sedco Hills have some gabbro soils, but are mostly non-gabbro.
- 4) There are gabbro and non-gabbro soils further north in the Steele Peak area south of the Gavilan Plateau.

3.3.3.2 Locations of Soils with Engineering Limitations

Water-Worked, Bare, or Rock Landforms

Water-worked, bare, or rock landforms are predominant in the aptly named "Badlands" of Riverside County. These are severely eroded alluvial deposits from ancient Pliocene flooding. They do not have a soil series name; they are simply named badlands. The San Timoteo Badlands lay along State Route 60 between Moreno Valley and Beaumont, and are prone to landslides and debris torrents especially after fires. "Rough broken lands," "gullied land," and "badlands" occur in the foothills of the San Jacinto Mountains along the San Jacinto River and Bautista Creek east of Hemet and the community of Valley Vista. In San Bernardino County the area classified as a water-worked, bare, or rock landform is a quarry in the streambed of the Santa Ana ACEC.

Young or Poorly Developed Soils

Typically, the entisols are sandy with layers of well sorted alluvium like the Soboba series at the Santa Ana River Wash ACEC in San Bernardino County, which is classified in the soil great group of "Xerofluvents." They are "fluvents" because they are of fluvial origin and xeric because they receive most of their rain in the winter. Other poorly developed soils are named at the "suborder" level rather than a soil series like the psamments of the Santa Ana River Wash. The prefix "psamm" means sandy; riverwash soils are sandy structureless soils.

Inceptisols occur in the Gavilan Hills area, along I-5 and north to Lake Matthews. They may occur near terrace escarpments and alluvial plains, but are somewhat better developed than the terrace escarpments and alluvial plains that are intermittently flooded.

Terrace escarpments are a declining habitat in Riverside County due to urban development and are frequently cut off from the sources of water that formed them. Most of the BLM habitats are at higher elevations and may be the last of few remnants in the county.

3.3.3.3 Locations of Fertile Scrub Soils

There are pockets of these soils in the mollisol soil order throughout the Management Area. The largest contiguous acreage is southeast of the Potrero ACEC. Though these soils are not necessarily sensitive, they may have habitat for a variety of sensitive flora and fauna. They are somewhat more fertile than most of the rock land soils of the mountainous areas and may support dense stands of chaparral and scrub. They may be prone to wildfire hazard as these habitats become senescent.

3.3.4 Beauty Mountain Management Area

Beauty Mountain is a large contiguous management area that lies on the border of southern Riverside County and northern San Diego County (Map 3-4). It is covered by two soil surveys: *Soil Survey of Western Riverside Area, California* (Knecht 1971) and the *Soil Survey San Diego Area, California* (Bowman 1973). It includes the Million Dollar Springs ACEC and WSA.

The ACEC is almost entirely mollisols in the Sheephead series weathered from micaceous schist and gneiss or Tollhouse series derived from granodiorite. The Tollhouse series does have some engineering limitations, because it is shallow, less than 16 inches to bedrock. Both series are low in nutrients and/or poorly developed compared to typical mollisols. Yet, as mollisols they are still higher in nutrients than most soils of the mountainous areas and can support dense stands of chaparral and scrub with a high potential for wildfire. Land to the north and partly within the ACEC is critical habitat for the federally endangered Quino checkerspot butterfly (*Euphydryas editha quino*), which does not respond well to fire because their populations do not migrate.

Within the ACEC and the mollisols there are pockets of alfisols, clay soils in the Bull Trail series. They are remnants of alluvial plains and terraces, and have a high likelihood of supporting sensitive flora and fauna.

The western boundary of the management area and soils west of the ACEC have engineering limitations and are named as acid-igneous rock land or riverwash instead of assigned with series names. Intergraded with these are soils that are perpetually juvenile or “entic” and they are classified as entisols in the Cieneba series. In addition to engineering limitations the riverwash areas are riparian and support sensitive habitats and sensitive species.

3.3.5 San Diego County Management Area

3.3.5.1 Locations of Endemic Flora Related Soils

The San Diego County Management Area (Map 3-4) includes some large management subunits including the San Diego Border Mountains with the most western being the Otay Mountain Wilderness Area; scattered parcels around the community of Dulzura; a large contiguous acreage at Hauser Mountain Wilderness Study Area (WSA); and scattered groupings of parcels north and south of the community of Potrero, to the east of the borderland mountains. Each of these areas has a wide variety of soil types, as might be expected in a zone which spans the transition from low desert to coastal mountains. This variety of types is the result of diversity in geology, relief, climate, living organisms, and age of the soils. Most of Otay Mountain and east to Hauser Mountain were affected by the extensive wildfires of 2003 and 2007. Hauser Mountain was not affected and still supports dense stands of chaparral (CAL FIRE 2008, SanGIS 2007).

Gabbro and Non-Gabbro Clay Soils

Gabbro soils are predominant on Otay Mountain in South San Diego County. The NRCS maps of this area show this as a complex of two soil series composed of 50 percent San Miguel, a gabbro clay soil, and 40 percent Exchequer, and other minor components. Exchequer is a shallow soil, less than 10 inches deep over mafic metavolcanic rock that has no argillic clay horizon. Critical habitat for the Mexican flannelbush, *Fremontodendron mexicanum*, is on the northeast of the Otay Mountain Wilderness and near the Cedar Canyon Area of Critical Environmental Concern (ACEC), but the plant occurs outside of these locations on several other places on the mountain.

Interspersed between Otay Mountain and Hauser Mountain are some significant management units of deep soils in the Las Posas series formed from deeply weathered gabbro. They include the Kuchamaa ACEC and some areas near Cottonwood Creek. Many of the rare gabbro endemic plants are found on Las Posas soils throughout San Diego County. In north San Diego County there is another BLM management unit with Las Posas clay soils south of the San Luis Rey River and northeast of Escondido.

There are very few non-gabbro clay soils in The San Diego County Management Area. They are mostly of the Huerhuero soil series formed from sandy marine sediments and the Fallbrook soil series formed from acid-igneous parent material. Where they occur, they are mostly associated with the Fertile Scrub Soils.

3.3.5.2 Locations of Soils with Engineering Limitations

The waterworked, bare, or rock landforms are nearly all associated with exposed intrusive batholiths. That is to say, they are composed from volcanic rock that crystallized from beneath the surface and was then exposed. They appear as open rock lands in the mountain summit areas, rock outcrops, and along stream courses. Those on Otay Mountain are metamorphic, meaning that they have been deformed and compressed due to geologic forces. On Otay Mountain most of the geology has a basic or

ultra-basic mineralogy like gabbro. Gabbro rock is the material used for the “black-granite” kitchen counters. True granite, on the other hand, is acid-igneous, not basic.

Critical habitat for the state and federally endangered willowy monardella, *Monardella viminea*, occurs along stream banks of the gabbro soil areas within the Otay Mountain Wilderness. It also occurs to the northeast of the wilderness boundary outside of BLM land.

The rock landforms east of Otay Mountain are acid-igneous or true granite and are low in basic minerals. Soils forming from them are typically low in nutrients, sandy and support low densities of plant cover, thus they have less organic material in the surface horizons and tend to remain perpetually juvenile in their development or “entic.” The soils supporting vegetation surrounding them are typically entisols that are shallow, less than 20 inches to granitic bedrock. In other parts of the county, these soils are used to produce avocados. Although the management units between the Otay Mountain and Hauser Mountain areas are a mix of both basic and acid-igneous geology that result from the metamorphic processes in this area, the dominant soils are entisols from the Cienaba series that formed from granite.

The association of entic soils and acid-igneous rock lands also occur on the BLM units to the north and southeast of State Route 67 and the Barona Indian reservation on the crest of the mountains that separate the watersheds of the San Vicente Reservoir to the west and El Capitan Reservoir to the east. Some disjunct parcels of entic soils and acid igneous rock land occur still farther north, on the southern border of the La Jolla Indian reservation and the San Luis Rey River, the same area that also has some Las Posas gabbro soils.

3.3.5.3 Locations of Fertile Scrub Soils

The mollisols around the Otay mountain area are shallow to bedrock and could be considered part of the continuum of rock land and entisols. They may support more biomass but still have engineering limitations because of their shallow depth, less than twelve inches, to bedrock.

The Hauser Mountain area is a large area of contiguous parcels that are almost all mollisols, mostly in the Tollhouse and La Posta soil series. Mollisols can support dense stands of chaparral and scrub vegetation because of their nutrient value. Tollhouse soils may have some engineering limitations because they are only about 16 inches deep over granodiorite. The Hauser Mountain area supports dense stands of chaparral that may be senescent and pose a wildfire hazard (CAL FIRE 2008, SanGIS 2007).

The community of Potrero lies east of the Peninsular Range in the desert. There are several large blocks of BLM units at the base of the mountains surrounding Potrero. The soils are mostly mollisols in the Tollhouse and La Posta series. In addition, there are Calpine and Mottsville series soils both of which occur in alluvial fan areas and were formed from granitic alluvium. These soils follow the stream channels and lie within a matrix of Tollhouse and La Posta soils.

3.4 Water Resources

3.4.1 Surface Water

Surface waters in the Planning Area can be divided into watersheds or portions of the landscape that collect runoff from the surface, concentrate it into channels, and conduct the resulting flow to a definable outlet. The Planning Area occurs within the San Diego (Region 9), the Colorado River (Region 7), the Los Angeles (Region 4), the Santa Ana (Region 8), the Lahontan (Region 6V), and the Central Valley (Region 5F) watershed basins. Within these watershed basins, smaller watersheds and hydrologic areas are defined.

3.4.1.1 Los Angeles County Management Area

Castaic Lake is partially located on Parcels 011-261, 012-311, 016-031 and 017-071 for which BLM administers surface rights and on several parcels for which BLM administers subsurface rights. These parcels are small in comparison to the size of the lake. The lake, which is a State Water Project reservoir, includes 29 miles of shoreline and a 425-foot-tall dam (State of California 2008). The dam for the reservoir was completed in 1973, and the reservoir has a storage capacity of 325,000 acre-feet (State of California 2007). While the reservoir is operated by the California Department of Water Resources, Castaic Lake is also a State Recreation Area, which is operated by the Los Angeles County Department of Parks and Recreation.

3.4.1.2 Riverside–San Bernardino County Management Area

The Santa Ana River runs through Parcels 107-101 and 108-081 for which BLM administers surface rights and three parcels for which BLM administers subsurface rights.

A large portion of the Railroad Canyon Reservoir is located on two parcels of BLM-administered lands: Parcel 176-261 for which BLM administers surface rights and another parcel which is only administered for subsurface rights. The reservoir is operated by the Elsinore Valley Municipal Water District. The 94-foot-tall dam for the reservoir was completed in 1928, and the reservoir has a storage capacity of 11,586 acre-feet (State of California 2007).

The Santa Margarita River is a free-flowing perennial stream and runs through two parcels of land (218-331 and 218-261) for which BLM administers surface rights. Temecula Creek runs through three parcels of land for which BLM administers subsurface rights. In general, the Santa Margarita watershed experiences problems with surface water quality resulting from agricultural and urban runoff, livestock / domestic animals, septic systems, and the use of non-potable recycled water (Project Clean Water 2008).

3.4.1.3 Beauty Mountain Management Area

Tule Creek runs through one parcel of land (222-221) for which BLM administers surface rights and five parcels of land for which BLM administers subsurface rights. Elder Creek runs through four parcels of land for which BLM administers subsurface rights. Chihuahua Creek runs through five parcels of land (222-221, 232-101, 232-011, 233-011, and 233-121) for which BLM administers surface rights and four parcels of land for which BLM administers subsurface rights. Tule Creek, Elder Creek, and Chihuahua creek are within the Santa Margarita watershed. In general, the Santa Margarita watershed experiences problems with surface water quality resulting from agricultural and urban runoff, livestock/domestic animals, septic systems, and the use of non potable recycled water (Project Clean Water 2008).

3.4.1.4 San Diego County Management Area

The San Diego River runs through one parcel of land for which BLM administers subsurface rights. In general, the river experiences problems with surface water quality resulting from urban and agricultural runoff, mining operations, and sewage spills within the watershed (Project Clean Water 2008).

The Otay River runs through one parcel of land (299-181) for which the BLM administers surface rights and two parcels of land for which the BLM administers subsurface rights. Dulzura Creek runs through one parcel of land (290-251) for which the BLM administers surface rights. The Otay River and Dulzura Creek flow within the Otay River watershed, which experiences problems with surface water quality resulting from urban runoff, agricultural runoff, resource extraction, septic systems, and boating activities (Project Clean Water 2008).

Cottonwood Creek is in the Tijuana River watershed and runs through Parcels 300-131 and 292-251 for which BLM administers surface rights and one parcel of land for which BLM administers subsurface rights. Cottonwood Creek / Rio Alamar runs through Parcels 299-011 and 299-361. The Tijuana River experiences a wide variety of water quality problems largely resulting from urban runoff, sewage spills, industrial discharges, agriculture, orchards, livestock / domestic animals, and septic systems (Project Clean Water 2008).

The San Luis Rey River runs through one parcel of land (247-011) for which BLM administers surface rights. In general, the river experiences problems with surface water quality resulting from agricultural and urban runoff, livestock, sand mining, and septic systems (Project Clean Water 2008).

The Santa Margarita River runs through one parcel of land for which BLM administers subsurface rights. Temecula Creek runs through one parcel of land (232-211) for which BLM administers surface rights and six parcels of land for which BLM administers subsurface rights. In general, the Santa Margarita watershed experiences problems with surface water quality resulting from agricultural and urban runoff, livestock / domestic animals, septic systems, and the use of non-potable recycled water (Project Clean Water 2008).

The San Dieguito River runs through one parcel of land for which BLM administers subsurface rights. In general, the river experiences problems with surface water quality resulting from urban and agricultural runoff and domestic animals (Project Clean Water 2008).

Escondido Creek runs through one parcel of land for which BLM administers subsurface rights. San Marcos Creek runs through two parcels of land for which BLM administers subsurface rights. Lake Wolhford extends through one parcel of land (255-051) for which BLM administers surface rights. Escondido Creek, San Marcos Creek, and Lake Wolhford are within the Carlsbad watershed. The Carlsbad watershed experiences problems with surface water quality resulting from urban and agricultural runoff, sewage spills, and livestock / domestic animals (Project Clean Water 2008).

The BLM has recently acquired lands which have bird guzzlers. Production of various springs throughout the Management Area is currently unknown.

3.4.2 Groundwater

Groundwater within the Planning Area occurs primarily within alluvial deposits between fault block mountain ranges. BLM has no direct authority over the groundwater. Rather, the groundwater resource is managed by the California State Water Resources Control Board (SWRCB) and California Department of Water Resources (DWR). BLM works in cooperation with SWRCB and DWR.

The state agencies that implement groundwater-related monitoring programs are the State Water Resources Control Board (SWRCB) and Regional Water Quality Control Boards (RWQCBs), Department of Water Resources (DWR), Department of Health Services (DHS), Department of Toxic Substances Control (DTSC), and Department of Pesticide Regulation (DPR). These agencies are represented on an Interagency Task Force (ITF), which was created by the Groundwater Quality Act of 2001, under Assembly Bill 599. The purpose of the ITF is to integrate existing monitoring programs and design new program elements as necessary.

Federal agencies that implement groundwater-related monitoring programs include the EPA, Bureau of Reclamation, and the United States Geological Survey (USGS). The DWR requires that water from newly constructed wells be sampled and the water quality assessed.

The laws and regulations applicable to the public supply wells establish numerical water quality criteria for contaminants, called Maximum Contaminant Levels (MCLs), to protect public health.

3.4.2.1 Los Angeles County Management Area

The Los Angeles County Management Area falls within portions of the South Coast, South Lahontan, and Tulare Lake Hydrologic Regions.

Map 3-9 shows the groundwater basins in the Los Angeles County Management Area. The groundwater basins that include BLM-administered lands in the Los Angeles County Management Area are the San Fernando Valley Basin (#4-12); the Antelope Valley Basin (#6-44); the Acton Valley Basin (#4-5); the Santa Clara River Valley Basin; Santa Clara River Valley East Subbasin (#4-4.07); and the Hungry Valley Basin (#4-18), all of which are located on land where BLM administers subsurface rights. Additionally, three parcels for which BLM administers subsurface rights are located within the boundary of the Conejo–Tierra Rejada Volcanic aquifer (formerly classified as Basin #4-21). In addition, the Antelope Valley Basin, the Acton Valley Basin, and the Santa Clara River Valley East Subbasin are also located on land where BLM administers surface rights (see Map 3-9).

The storage capacity of the San Fernando Valley Basin is estimated to be 3,670,000 acre-feet, with an estimated 3,049,000 acre-feet of groundwater in storage.

The Antelope Valley Basin has an estimated storage capacity ranging from 68,000,000 to 70,000,000 acre-feet. Groundwater pumping has caused ground subsidence in the Antelope Valley, which has permanently reduced the storage capacity of the basin by approximately 50,000 acre-feet. Impairments to the groundwater include high levels of boron and nitrates (DWR 2003). The Acton Valley Basin has a storage capacity of approximately 40,000 acre-feet, with estimated groundwater in storage ranging from a low of 14,900 acre-feet in 1964-1965 to 34,400 acre-feet in 1983-1984 (DWR 2003).

The Santa Clara River Valley East Subbasin has a storage capacity of approximately 1,890,000 acre-feet, with an estimated 1,811,000 acre-feet of groundwater in storage as of spring 2000 (DWR 2003).

The Hungry Valley Basin has a storage capacity of approximately 10,937 acre-feet, with an estimated 10,400 acre-feet of groundwater in storage (DWR 2003).

The Conejo–Tierra Rejada Volcanic aquifer is considered to be a groundwater source area. Although groundwater flows can occur in volcanic source areas, they often have a very limited storage potential (DWR 2003).

3.4.2.2 Riverside–San Bernardino County Management Area

The Riverside–San Bernardino County Management Area falls within portions of the South Coast, Colorado River, and South Lahontan Hydrologic Regions.

Map 3-8 shows the groundwater basins in the Riverside–San Bernardino County Management Area. The groundwater basins that include BLM-administered lands in the Riverside–San Bernardino County Management Area are the Upper Santa Ana Valley Basin (#8-2); the San Jacinto Basin (#8-5); the Temecula Valley Basin (#9-5); the Coachella Valley Basin, San Gorgonio Pass Subbasin (#7-21.04); the Cahuilla Valley Basin (#9-6); the Terwilliger Valley Basin (#7-26); the Vandeventer Flat Basin (#7-63); and the Elsinore Basin (#8-4), all of which are located on land where BLM administers subsurface rights (see Map 3.4-2). The Upper Santa Ana Valley Basin, the San Jacinto

Basin, the Temecula Valley Basin, and the Cahuilla Valley Basin are also located on land where BLM administers surface rights (see Map 3-8).

The Upper Santa Ana Valley Basin within the Riverside–San Bernardino County Management Area is broken down into smaller subbasins, the following of which include BLM-administered lands: San Timoteo (#8-2.08); Bunker Hill (#8-2.06); Chino (#8-2.01); Yucaipa (#8-2.07); Riverside Arlington (#8-2.03); Temescal (#8-2.09); and Rialto–Colton (#8-2.04). The Chino Subbasin is estimated to have a storage capacity of 18,300,000 acre-feet; water in storage was estimated to be 8,600,000 acre-feet in 1982 and 5,325,000 acre-feet in the fall of 2000. Within the Chino Subbasin, impairments include high concentrations of nitrate — nitrogen and dissolved solids (DWR 2003). The Riverside-Arlington Subbasin is estimated to have a storage capacity of 243,000 acre-feet with the amount of stored water unknown. Estimates of the storage capacity of the Rialto-Colton Subbasin vary and range up to 2,517,000 acre-feet, with an estimated 1,521,000 acre-feet of groundwater in storage as of 1984. The storage capacity of the Yucaipa Subbasin has been estimated at varying figures between 783,000 and 1,230,000 acre-feet, with an estimated 626,000 acre-feet of groundwater in storage as of 1960 and about 585,700 acre-feet in storage as of 1986. The San Timoteo Subbasin has a storage capacity of approximately 2,010,000 acre-feet, with an estimated 1,570,000 acre-feet of groundwater in storage as of 1960. In the San Timoteo Subbasin, impairments include high nitrate and salinity levels at some sample locations. The estimated total storage capacity and the amount of stored water in the Temescal Subbasin are unknown (DWR 2003). The Bunker Hill Subbasin has a storage capacity of approximately 5,976,000 acre-feet, with an estimated 5,890,300 acre-feet of groundwater in storage as of 1998. Impairments within the Bunker Hill Subbasin include the Newmark Superfund site and several contamination plumes outside of the Superfund site (DWR 2003; USEPA 2007).

The San Jacinto Basin has a storage capacity of approximately 3,070,000 acre-feet, with an estimated 2,700,000 acre-feet of groundwater in storage as of 1975 (DWR 2003).

The Coachella Valley Basin, San Gorgonio Pass Subbasin has a storage capacity of approximately 2,200,000 acre-feet, with an estimated 1,400,000 acre-feet of groundwater in storage (DWR 2003).

Estimates of the storage capacity of the Elsinore Basin vary and range up to 1,840,000 acre-feet. The Elsinore Basin was estimated to have 1,000,000 acre-feet of groundwater in storage in 1964 and 1975, and was estimated to have 1,155,000 acre-feet of groundwater in storage in 1999 (DWR 2003).

The estimated total storage capacity and the amount of stored water in the Vandeventer Flat Basin are unknown (DWR 2003).

The Temecula Valley Basin, the Cahuilla Valley Basin, and the Terwilliger Valley Basin are partially located within the Beauty Mountain Management Area, and are described in Section 3.4.2.3 below.

3.4.2.3 Beauty Mountain Management Area

The Beauty Mountain Management Area falls within portions of the South Coast and the Colorado River Hydrologic Regions.

Map 3-7 shows the groundwater basins in the Beauty Mountain Management Area. The groundwater basins that include BLM-administered lands in the Beauty Mountain Management Area are the Temecula Valley Basin (#9-5), the Terwilliger Valley Basin (#7-26), and the Cahuilla Valley Basin (#9-6), all of which are located on land where BLM administers subsurface rights (see Map 3-7). The Temecula Valley Basin and the Terwilliger Valley Basin are also located on land where BLM administers surface rights (see Map 3-7). As seen in Map 3-7, the majority of the area covered by these groundwater basins is outside of the Beauty Mountain Management Area.

Groundwater in the Temecula Valley Basin is largely suitable for domestic use and irrigation, with the exception of localized areas of inferior or marginal ratings due to high nitrate, fluoride, chloride, sulfate, magnesium, or total dissolved solids content. The estimated total storage capacity of the Temecula Valley Basin is 253,000 acre-feet; the amount of stored water is unknown (DWR 2003).

The estimated total storage capacity of the Cahuilla Valley Basin is estimated to be 75,000 acre-feet. The amount of stored water is unknown. Sulfates and nitrates are high for domestic use, with nitrate concentrations as high as 128 milligrams per liter (mg/L) (DWR 2003). The estimated total storage capacity and the amount of stored water in the Terwilliger Valley Basin are unknown (DWR 2003).

3.4.2.4 San Diego County Management Area

The San Diego County Management Area falls within portions of the South Coast and the Colorado River Hydrologic Regions.

The County of San Diego's Department of Environmental Health Land Use Program regulates the design, construction, maintenance, and destruction of water wells throughout San Diego County to protect San Diego County's groundwater resources.

Map 3-7 shows the groundwater basins in the San Diego County Management Area. As seen in Map 3-7, the majority of the area covered by groundwater basins is on non-BLM-administered lands. The groundwater basins that include BLM-administered lands in the San Diego County Management Area are the San Luis Rey Valley Basin (#9-7); the San Diego River Valley Basin (#9-15); the San Pasqual Valley Basin (#9-10); the Cottonwood Valley Basin (#9-27); the Campo Valley Basin (#9-28); and the Potrero Valley Basin (#9-29). All of these basins, with the exception of the Cottonwood Valley Basin, are located on land where BLM administers subsurface rights (see Map 3-7). In addition, with the exception of the San Pasqual Valley Basin, these basins are also located on land where BLM administers surface rights.

Well sample data within the San Luis Rey Valley Basin include samples where contaminants exceed Maximum Contaminate Levels (MCLs) for inorganics, radiological con-

taminants, nitrates, pesticides, and volatile and semi-volatile organic compounds (VOCs and SVOCs) (DWR 2003). The estimated total storage capacity of the San Luis Rey Valley Basin is 240,000 acre-feet with the amount of stored water unknown. Groundwater levels within the San Luis Rey Valley Basin had declined in the 1950s and 1960s due to overpumping, but levels have risen since the importation of water to near pre-development levels (DWR 2003).

Well sample data within the San Diego River Valley Basin include an exceedance of the MCLs for secondary inorganics (DWR 2003). Estimates of total storage capacity of the San Diego River Valley Basin vary and have been approximated at 24,000 and 97,000 acre-feet (DWR 2003). The amount of stored water is unknown.

Elevated nitrate concentration within the San Pasqual Valley Basin is widespread. The estimated total storage capacity of the San Pasqual Valley Basin is 73,000 acre-feet. The amount of stored water is unknown (DWR 2003).

The estimated total storage capacity of the Campo Valley Basin is 63,450 acre-feet, and the amount of stored water is estimated at 7,614 in 1983 (DWR 2003).

The estimated total storage capacity and the amount of stored water in the Cottonwood Valley and Potrero Valley Basins are unknown (DWR 2003).

Additionally, the Campo-Cottonwood Sole Source Aquifer is located in the southeastern portion of the San Diego County Management Area (shown in Map 3-7). A sole source aquifer (SSA) supplies at least 50 percent of the drinking water consumed by the overlying areas. An aquifer designated as a SSA receives additional protection such that federally funded projects with the potential to contaminate a SSA are subject to review by the EPA (USEPA 2008a, 2008b).

3.4.3 Watershed Basins and Hydrologic Units

3.4.3.1 Los Angeles County Management Area

The Los Angeles County Management Area consists almost entirely the Los Angeles (Region 4) watershed basin, as seen in Map 3-11. Along the northeastern boundary of the Los Angeles County Management Area are small areas of the Lahontan (Region 6V) and Central Valley (Region 5F) watershed basins. The Orange County portion of the Los Angeles County Management Area includes the Santa Ana River (Region 8) and the San Diego (Region 9) watershed basins. Smaller hydrologic units are defined within these watershed basins, as seen in Map 3-11.

As seen in Map 3-11, BLM-administered lands are located in watersheds which include a number of rivers, lakes, and reservoirs.

3.4.3.2 Riverside–San Bernardino County Management Area

The majority of the Riverside–San Bernardino County Management Area is located within the Santa Ana River (Region 8) watershed basin. A portion of the southern

Riverside–San Bernardino County Management Area is located within the San Diego (Region 9) watershed basin. Eastern and northeastern areas of the Riverside–San Bernardino County Management Area are located within the Colorado River (Region 7) watershed basin. Northeastern areas of the Riverside–San Bernardino County Management Area are located within the Lahontan (Region 6V) watershed basin. The boundaries of the watersheds are formed by mountain chains within the Transverse Ranges and Peninsular Range Mountains. Smaller hydrologic units are defined within these watershed basins, as seen in Map 3-11.

As seen in Map 3-11, BLM-administered lands are located in watersheds which include a number of rivers, lakes, reservoirs, and bays. BLM-administered lands are located within the Santa Margarita River hydrologic units. The Santa Margarita River has been classified as eligible for Wild and Scenic River designation.

3.4.3.3 Beauty Mountain Management Area

The Beauty Mountain Management Area is located within the San Diego (Region 9) and the Colorado River (Region 7) watershed basins (see Map 3-10). In the Beauty Mountain Management Area the boundary between the two watersheds is formed by the Santa Rosa Mountains within the larger Peninsular Range. Smaller hydrologic units are defined within these watershed basins (see Map 3-10).

As seen in Map 3-10, BLM-administered lands are located within the San Luis Rey River and the Santa Margarita River watersheds. The Santa Margarita River has been classified as eligible for Wild and Scenic River designation.

3.4.3.4 San Diego County Management Area

The San Diego County Management Area is located primarily within the San Diego (Region 9) watershed basin, and to a lesser extent, some eastern areas of the San Diego County Management Area are located within the Colorado River (Region 7) watershed basin as seen in Map 3-10. The boundary between the two watersheds is within the Peninsular Range Mountains. Smaller hydrologic units are defined within these watershed basins (Map 3-10).

As seen in Map 3-10, BLM-administered lands are located in watersheds which include a number of rivers, reservoirs, lakes, and lagoons. They are BLM-administered lands located within the Santa Margarita River hydrologic unit. The Santa Margarita River has been classified as eligible for Wild and Scenic River designation.

3.4.4 Water Use

Water use on BLM-administered lands in the Planning Area consists of wildlife, border patrol, military use, and wildland fire control. Natural springs, some developed springs, and wells supply this water.

3.4.5 Regulatory Setting

Clean Water Act. The objective of the Federal Water Pollution Control Act (CWA; PL 92-500, as amended; 33 U.S.C. §§ 1251 et seq.) is to restore and maintain the chemical, physical, and biological integrity of the nation's waters (Section 101a). Under Sections 401 and 404, the CWA regulates point- and non-point-source (NPS) pollution and, along with Executive Order 11990 (Protection of Wetlands) impacts to wetlands.

The CWA has three major approaches to water pollution control:

- 1) Construction grants for reducing municipal discharges;
- 2) National Pollutant Discharge Elimination System (NPDES) permits for control of point-source (storm water and waste water) discharges; and
- 3) Water quality management planning for NPS control from diffuse natural origins such as sediment.

In 1972 Congress adopted a “zero-discharge” goal and a focus on “preventable causes of pollution” to emphasize the source of contamination rather than controls at the outfall or water body itself. Water quality “standards” include a legal designation of the desired use for a given body of water and the water quality criteria appropriate for that use. The “criteria” are specific levels of water quality which are expected to make a water body suitable for its desired use. “Effluent limitations” are restrictions on quantities, rates, and concentrations in wastewater discharges measured at the discharger’s outfall pipe.

Administration of Section 401 of the act is delegated to the State Water Resources Control Board (SWRCB) in California and, locally, to the RWQCBs. The RWQCBs are responsible for setting water quality standards and criteria for water bodies in their respective regional plans, and for issuing and enforcing NPDES permits. Current BLM activities in the Planning Area or management areas are such that a NPDES permit is not required. NPDES permits are typically required for storm water discharge to waters of the United States from construction projects in compliance with the permit that encompass five or more acres of soil disturbance and for storm water discharges from small construction activity that disturb land equal to or greater than one acre and less than five acres.

The 401 Water Quality Certification application is available on the internet (SWRCB 2004).

Section 13241 of the California Water Code provides that each RWQCB shall establish water quality objectives for the waters of the State (i.e., ground and surface waters) which, in the Regional Board’s judgment are necessary for the reasonable protection of beneficial uses and prevention of nuisance. Section 303 of the CWA requires the State to adopt water quality objectives for surface waters. The local RWQCBs within the Planning Area have established surface and ground water quality objectives and water quality standards for contaminants in their Basin Plans (California RWQCB — San Diego Region 1994; California RWQCB — Colorado River Basin 2006; California RWQCB — Los Angeles Region 1994; California RWQCB — Santa Ana River Basin

2008; California RWQCB — Lahontan Region 2005; California RWQCB — Central Valley Region 2004).

The Wild and Scenic River Guidelines in the June 1994 South Coast Resource Management Plan and Record of Decision specify that water quality will be maintained or improved to meet federal water quality criteria or federally approved state water quality standards. In addition, river management plans shall prescribe a process for monitoring water quality on a continuing basis.

The DWR is the primary state agency mandated to address water quantity (water supply) information (DWR 2005).

3.4.6 Federal Reserved Water Rights

Today, federal reserved water rights can be asserted on most lands managed by the federal government. Reserved rights are, for the most part, immune from state water laws and therefore, are not subject to diversion and beneficial use requirements and cannot be lost by non-use. The federal government, however, is required to submit all reserved water rights claims to the state's adjudication process, limited by the 'primary purpose' and 'minimal needs' requirements. In addition, federal reserved water rights are nontransferable. By law, these rights can only exist on lands owned by the federal government. If a land transfer occurs, any existing federal reserved water right becomes invalid (DOI BLM 2008).

3.4.6.1 Wilderness

Wilderness designations can be considered the most restrictive of the federal land management designations. Reserved water rights are set aside pursuant to the Wilderness Act of 1964 (16 U.S.C. Section 1131). Development within Wilderness is restricted, and these restrictions extend to the development of water supplies. The Wilderness Act reserves the amount of water within the Wilderness Area necessary to preserve and protect the specific values responsible for designation of the area and to provide for public enjoyment of these values. Only the minimum amount of water necessary to fulfill the primary purpose of the reservation may be asserted as a reserved right (DOI BLM 2008).

3.4.6.2 Wild and Scenic Rivers

Wild and Scenic River designations are derived from the Wild and Scenic Rivers Act of 1968 (16 USC Section 1271). This legislation states that "certain selected rivers of the nation which, with their immediate environments, possess outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural, or similar values, shall be preserved in free-flowing condition, and that they and their immediate environments shall be protected for the benefit and enjoyment of present and future generations". Designation of a stream or river segment as "wild and scenic" prevents construction of flow modifying structures and other facilities on the selected stretch. The area of restricted development can vary, but generally includes at least the area within one-quarter mile of the ordinary high water mark on either side of the river. The act also

reserved to the United States the amount of unappropriated water flowing through the public lands necessary to preserve and protect in free-flowing condition the specific values which were responsible for designation of the watercourse. The act, however, does not automatically reserve the entire unappropriated flow of the river (DOI BLM 2008).

3.4.7 References

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3.5 Vegetation

3.5.1 Vegetation

The basis for managing vegetation, riparian-wetland, and invasive or noxious weeds for BLM lands can be found in the following federal laws, regulations, and policies:

- Taylor Grazing Act of 1934.
- Public Rangelands Improvement Act of 1978.
- Clean Water Act of 1977.
- EO 11990 Protection of Wetlands.
- Federal Noxious Weed Act of 1974.
- EO 13112 Invasive Species Control.
- BLM Manual Section 1740 Renewable Resource Improvements and Treatments.
- BLM Manual 9011 Chemical Pest Control.
- 1737-9 Process for Assessing Proper Functioning Condition: Riparian Area Management.
- 1737-15 A User Guide to Assess Proper Functioning Condition and Support for Lotic Areas (This Technical reference supplements TR-1737-9, Process for Assessing Proper Functioning Condition: Riparian Area Management).
- Vegetation Treatment Using Herbicides on BLM Lands in Seventeen Western States Final Programmatic Environmental Impact Statement (FPEIS) (DOI BLM 2007).
- California Vegetation Management Final Environmental Impact Statement (FEIS) (DOI BLM 1988a).
- Endangered Species Act of 1973 as amended.
- Natural Resources Conservation Service (NRCS) Ecological Site Guides.
- California State Director and Pacific Southwest Regional Forester Traditional Gathering Policy.

In addition, the following non-federal agreements and laws apply to the Planning Area:

- Cooperative Fire Protection Operating Plan with California Department of Forestry and Fire Protection (CAL FIRE) (USDA 2001).
- California Native Plant Protection Act of 1977.
- California Endangered Species Act.
- 1988 Food and Agricultural Code of California (Division 23, California Desert Native Plants Acts).

3.5.2 Plant Communities

The BLM lands within the South Coast Planning Area cover an array of plant communities, including coastal sage scrub, chaparral, grasslands, wetlands, riparian habitats, oak woodlands and forests (e.g., southern interior cypress forests) (Maps 3-12 through 3-14). Twenty-seven natural plant communities or vegetation types have been identified on BLM lands. The presence and approximate acres on BLM of these plant communities, which are grouped into broad categories, is shown in Table 3-3.

The most threatened vegetation types within the planning area are coastal sage scrub, riparian habitats, and oak woodlands. They are considered rare in southern California and are rapidly disappearing because of agriculture; urbanization and frequent fire return intervals that lead to type conversion by invasive non-native plant species. These particular habitat types are especially important because of their association with several special status wildlife species.

**Table 3-3
Natural Plant Communities of the South Coast Planning Area**

Natural Community	Rare	LA-O	B-MT	R-SD	S-DG
Coastal Sage Scrubs					
Diegan sage scrub	Yes		X	X	X
Riversidean alluvial fan sage scrub	Yes			X	X
Riversidean sage scrub	Yes	X		X	
Venturan coastal sage scrub	Yes	X			
Total Acres		2,060	2,090	11,550	11,010
Chaparrals					
Chamise chaparral		X	X	X	X
Coastal sage-chaparral scrub		X			X
Northern mixed chaparral		X			
Redshank chaparral			X		X
Scrub oak chaparral		X			
Semi-desert chaparral			X		
Southern mixed chaparral			X	X	X
Upper Sonoran manzanita chaparral			X		
Total Acres		2,020	31,370	17,120	45,880
Grasslands					
Non-native grasslands			X	X	X
Total Acres			60	600	440
Wetlands					
Freshwater seep	Yes				X
Coastal and valley freshwater marsh	Yes				X
Other wetlands		X		X	X
Total Acres		30	0	70	10

**Table 3-3
Natural Plant Communities of the South Coast Planning Area**

Natural Community	Rare	LA-O	B-MT	R-SD	S-DG
Riparian Habitats					
Mule Fat Scrub			X	X	
Southern coast live oak riparian forest	Yes	X	X	X	X
Southern cottonwood-willow riparian forest	Yes	X	X		X
Southern sycamore-alder riparian woodland	Yes	X		X	X
Southern willow scrub	Yes	X		X	X
Total Acres		30	200	230	300
Oak Woodlands					
Alvord oak woodland		X			
Coast live oak woodland			X	X	X
Dense Engelmann oak woodland	Yes				X
Open Engelmann oak woodland	Yes				X
Total Acres		0	200	430	1,060
Forests					
Coulter pine forest			X		
Southern Interior cypress forest	Yes				X
Total Acres		0	40	0	5,300

The majority of the plant communities in the lower elevations of cismontane Southern California are shrub-dominated communities, including coastal sage scrub and chaparral. Over 93% of the plant communities on BLM lands within the planning area are dominated by shrub species. These communities have evolved in a Mediterranean-type climate, which is characterized by hot, dry summers and mild winters. Overall precipitation is low and most shrubs are adapted to prolonged drought conditions and fire.

Coastal sage scrub is a drought-adapted community found at elevations generally below 1,000 feet. Within this community, shrubs on south facing slopes tend to be short, have soft, flexible leaves, and are drought deciduous (lose leaves during summer drought conditions). Dominant plant species on south facing slopes include California sagebrush (*Artemisia californica*), coast brittle-bush (*Encelia californica*), and sages (*Salvia* spp.). Shrubs on north facing slopes are more tree-like and include toyon (*Heteromeles arbutifolia*), laurel sumac (*Malosma laurina*), and lemonade berry (*Rhus integrifolia*). Coastal sage scrub occurs on approximately 27,000 acres of BLM public lands within the planning area. This includes approximately 11,550 acres of coastal sage scrub in Riverside–San Bernardino County Management Area, 11,010 acres in San Diego County Management Area, 2,060 acres in Los Angeles County Management Area, and 2,090 acres in the Beauty Mountain Management Area. Within the general category of coastal sage scrub, four types as described by Holland (1986) have been identified on BLM lands: Diegan sage scrub, Riversidean sage scrub, Venturan sage scrub, and Riversidean alluvial fan sage scrub. Coastal sage scrub is considered rare in

Southern California, with most of the community having been replaced by agriculture or urbanization. In many areas, coastal sage scrub has been replaced by non-native grasslands as a result of over-grazing and frequent fires. This community is associated with several rare wildlife species, most notably the federally threatened coastal California gnatcatcher (*Polioptila californica californica*).

Chaparral is found at higher elevations than coastal sage scrub (approximately 1,000 to 5,000 feet). Chaparral shrubs tend to be tall, evergreen, with small, sclerophyllous (hard) leaves. This community is fire-adapted, requiring periodic fires for proper health and vigor. Dominant plants include chamise (*Adenostoma fasciculatum*), California lilacs (*Ceanothus* spp.), and California scrub oak (*Quercus berberidifolia*). Chaparrals comprise the single largest plant community within the planning area (approximately 96,000 acres or about 73% of the total area). Within the broad category of chaparral, eight types as described by Holland (1986) have been identified on BLM lands: Chamise chaparral, Coastal sage-chaparral scrub, Northern mixed chaparral, Redshank chaparral, Scrub oak chaparral, Semi-desert chaparral, Southern mixed chaparral, and Upper sonoran manzanita chaparral.

Riparian areas comprise a small, but important, component of the plant communities within the planning area, comprising approximately 1% of the habitats. They exist as narrow corridors of growth associated with drainages, with widths ranging from 30 to 300 feet. Dominant tree species include coast live oak (*Quercus agrifolia*), California sycamore (*Platanus racemosa*), Fremont cottonwood (*Populus fremontii*) and willows (*Salix* spp.). Approximately 760 acres of riparian habitats occur on BLM lands in the planning area. Five types of riparian habitats have been identified as occurring on BLM lands: Mule Fat Scrub, Southern coast live oak riparian forest, Southern cottonwood-willow riparian forest, Southern sycamore-alder riparian woodland, and Southern willow scrub. The Santa Margarita River / Temecula Gorge (parcels 218-231, 218-261, 218-331, and 219-291), in particular, contains outstanding representative examples of riparian plant communities considered rare by Holland (1986), including Southern Coast Live Oak Riparian Forests.

Oak woodlands also make up a small percentage of the planning area (approximately 1,700 acres or 1%). They occur at moist sites with deep soils, such as canyon bottoms and north facing slopes, and exist as islands of habitat within coastal sage scrub and chaparral. They are dominated by several species of oaks: coast live oak (*Quercus agrifolia*), gold cup live oak (*Q. chrysolepis*), Engelmann oak (*Q. engelmannii*), interior live oak (*Q. wislizenii*) and, scrub oak (*Quercus berberidifolia*). The San Diego County Management Area contains about 2/3 of the existing oak woodlands/ riparian habitats on BLM lands. Threats to oaks include: compaction of soils within the dripline of trees, causing loss of moisture and destruction of mycorrhizal fungi essential to its survival; drought, as oaks are rainfall dependent; fire, leading to non-native grass invasions; and a variety of diseases and insect pests that are specific to oaks. A recent threat to coast live oaks is the gold-spotted oak borer (*Agrilus coxalis*). This beetle is known to attack coast live oaks, and is playing a major role in the on-going oak mortality on public, state, private, and Native American lands in southern California.

Southern interior cypress forest is a fairly dense, fire-maintained, low forest dominated by either *Cupressus nevadensis*, *Callitropsis forbesii*, or *Cupressus stephensonii*. Many stands are even-aged due to fire density, and spacing within the stands varies in relation to site factors and fire history. In the San Diego County Management Area, southern interior cypress forest is found on Otay Mountain and Tecate Peak on BLM lands and forms a unique plant community. Approximately 5,300 acres of southern interior cypress forests occur on Otay Mountain. Tecate cypress (*Callitropsis* [*Cupressus*] *forbesii*) is the dominant species in these southern interior cypress forests and occurs within a matrix of Diegan coastal sage scrub and chaparral. In addition to Tecate cypress, a number of other special status plants and wildlife species occur within the cypress forest. Most notable of these is a suite of endemic plants including Otay manzanita (*Arctostaphylos otayensis*), Otay mountain ceanothus (*Ceanothus otayensis*), Mexican flannelbush (*Fremontodendron mexicanum*), and the Thorne's hairstreak butterfly, which uses Tecate cypress as its larval host plant.

3.6 Wildlife

3.6.1 General Wildlife Habitat

The Planning Area is bordered by the north and east by the Transverse and Peninsular mountain ranges, respectively. This area of Southern California is referred to as cismontane California, meaning that it occurs on the coastal side of these mountain ranges. This region has a Mediterranean type climate, which is characterized by hot, dry summers, and mild winters. Chaparral is the most widespread plant community, encompassing over 70% of the Planning Area. Coastal sage scrub, riparian areas, and oak woodlands are the most threatened wildlife habitats within the planning area, and are described in detail in Section 3.5, Vegetation.

3.6.2 Wildlife Habitat Improvements

Historically, Quail Unlimited has maintained a limited number of artificial water sources (wildlife waters) for wildlife, mainly in the “Border Mountain Area” of the San Diego County Management Area. These wildlife waters generally consist of an underground concrete tank with a concrete apron at the opening (20 feet long) to funnel rainwater. Many of these wildlife waters were constructed in the 1940s and 1950s, and there is often no clear record of their locations. Quail Unlimited continually maps the locations of unknown wildlife waters and provides the locations to BLM and the CDFG.

If the installation of wildlife waters is necessary for future habitat management, care would be given to the placement of artificial water sources so that predators are not attracted to areas that act as refugia for seed populations of game birds, and water sources are not placed in areas where water hasn't been found before, so as to not attract Argentine ants.

3.6.3 Priority Wildlife Species

The priority wildlife identified by the BLM for management includes raptors, non-game migratory birds, bats, and game animals. The following provides a brief description of the basic needs of each of these wildlife categories.

Raptors. Raptors require a variety of foraging and nesting / roosting habitat. Most raptor species in the Planning Area require large open, primarily grassland areas in which to hunt for small mammals. Most raptors nest in tall trees, though some raptor species in the Planning Area nest on cliffs or on the ground in grasslands.

Non-game migratory birds. Non-game migratory birds include neotropical migrants, which are an important component of the ecosystem. They have a wide variety of habitat needs for food, water, cover, and nesting; and are a good environmental indicator of overall ecosystem health.

Bats. Bats have specialized roosting and breeding habitat requirements, often establishing colonies in caves / mines, rock outcrops, bridges, tree cavities, abandoned build-

ings, or other enclosed protected places. These species are nocturnal and will exit the roosting location in the evenings to forage for food within the vicinity of the colony.

Game animals. BLM is required to manage for the habitat of game animals that occur on their administered lands. Habitat features include sufficient food / forage, water, and cover / nesting locations. The primary game species within the South Coast Planning Area are mule deer, California quail, and doves. The majority of opportunities for game species management occur in the border area of the San Diego County Management Area. Closed-canopy chaparral can limit the structure and diversity of the understory, and may impact the quality of forage that is available for game species.

Mule Deer. Populations of mule deer in the South Coast Planning Area are generally low. Otay Mountain and Hauser Mountain are the only areas within the San Diego County Management Area with a land base that is sufficiently consolidated to provide opportunities for habitat management. The Soboba area within the Riverside / San Bernardino County Management Area and the Beauty Mountain area both contain enough consolidated land for efficient habitat management. Beauty Mountain supports a low to moderate deer population. Deer populations at Soboba are believed to be sparse.

Existing management factors within the South Coast Planning Area affecting deer populations are: (a) poor dispersion of early seral forage areas; (b) generally poor juxtaposition of forage areas to cover areas for escape and hiding; (c) poor public access; (d) type conversion of vegetation communities due to frequent fire return intervals; and (e) competition with livestock in some areas.

California quail. As with mule deer, quail populations tend to reach their population potential in areas with early seral vegetation associations. Populations of quail are limited in the San Diego County Management Area by the poor distribution of water and, especially, the large acreage of mature and over-mature chaparral. Populations of quail are limited in the Beauty Mountain Management Area and Riverside / San Bernardino County management areas by the poor distribution of water and, especially, the large acreage of mature and over-mature chaparral.

Due to the small size of the scattered parcels and the surrounding urbanization, the BLM lands in the Los Angeles County Management Area may support some game species, such as quail, but are not conducive to managing for game species.

3.7 Special Status Species

Southern cismontane California is considered one of the world’s biodiversity hotspots with high levels of plant and animal endemism. The area is also one of the country’s most densely urbanized regions. This combination has resulted in a large number of plant and animal species becoming increasingly rare. There are 62 special status species (36 plant and 26 animal species) that are known to occur or are suspected to occur on BLM lands within the South Coast Planning Area (Table 3-4). A Special Status Species is defined here as a species that is listed by the federal government as endangered, threatened, or as a candidate species, by the State of California as endangered, threatened, or rare, or by the BLM as a Sensitive Species. Table 3-4 provides an assessment regarding occurrence (known, suspected, United States Fish and Wildlife Service [USFWS] designated critical habitat) on BLM-administered lands in each of the four management areas.

**Table 3-4
Special Status Species**

Scientific Name	Common Name	Status ¹	Occurrence ²			
			LA-O	B-MT	R-SB	S-SD
Plant Species						
<i>Allium munzii</i>	Munz's onion	FE, ST			S	
<i>Ambrosia pumila</i>	San Diego ambrosia	FE			K	
<i>Arctostaphylos otayensis</i>	Otay manzanita	BLMSS		S		K
<i>Astragalus deanei</i>	Deane's milkvetch	BLMSS				K
<i>Astragalus douglasii</i> var. <i>perstrictus</i>	Jacumba milkvetch	BLMSS				K
<i>Astragalus oocarpus</i>	San Diego milkvetch	BLMSS				K
<i>Berberis nevinii</i>	Nevin's Barberry	FE, SE	S		CH	S
<i>Brodiaea filifolia</i>	Thread-leaf brodiaea	FT, SE			CH	S
<i>Brodiaea orcutt</i>	Orcutt's brodiaea	BLMSS				K
<i>Calochortus dunnii</i>	Dunn's mariposa-lily	SR				K
<i>Castilleja gleasonii</i>	Mt. Gleason paintbrush	SR	S			
<i>Ceanothus cyaneus</i>	Lakeside-lilac	BLMSS				K
<i>Cupressus forbesii</i>	Tecate cypress	BLMSS				K
<i>Deinandra floribunda</i>	Tecate tarplant	BLMSS				K
<i>Deinandra mohavensis</i>	Mojave tarplant	SE		K	S	
<i>Delphinium hesperium</i> ssp. <i>Cuyamaca</i>	<i>Cuyamaca larkspur</i>	SR				S
<i>Dodecahema leptoceras</i>	Slender horned spineflower	FE, SE	S		K	

**Table 3-4
Special Status Species**

Scientific Name	Common Name	Status ¹	Occurrence ²			
			LA-O	B-MT	R-SB	S-SD
<i>Dudleya cymosa</i> ssp. <i>Marcescens</i>	Santa Monica Mountains dudleya	FT, SR	S			
<i>Dudleya multicaulis</i>	Many-stemmed dudleya	BLMSS				K
<i>Dudleya variegata</i>	Variegated dudleya	BLMSS				K
<i>Eriastrum densifolium</i> ssp. <i>Sanctorum</i>	Santa Ana River Woolly-Star	FE, SE			K	
<i>Fremontodendron mexicanum</i>	Mexican flannelbush	FE, SR				CH
<i>Galium californicum</i> ssp. <i>Primum</i>	California bedstraw	BLMSS			S	
<i>Hazardia orcuttii</i>	Orcutt's Hazardia	BLMSS				S
<i>Lepechinia gander</i>	Gander's pitcher sage	BLMSS				K
<i>Linanthus orcuttii</i>	Orcutt's linanthus	BLMSS				S
<i>Limnanthes gracilis</i> ssp. <i>Parishii</i>	Parish's meadowfoam	SE		S		S
<i>Muilla clevelandii</i>	San Diego goldenstar	BLMSS				S
<i>Navarretia fossalis</i>	Spreading Navarretia	FT	S		K	S
<i>Nolina interrata</i>	Dehesa nolina (beargrass)	SE				K
<i>Packera ganderi</i>	Gander's ragwort (butterweed)	SR				S
<i>Ribes canthariforme</i>	Moreno currant	BLMSS				S
<i>Rosa minutifolia</i>	Small-leaved rose	SE				S
<i>Sidalcea hickmanii</i> ssp. <i>Parishii</i>	Parish's checkerbloom	FC, SR	S			
<i>Tetracoccus dioicus</i>	Parry's tetracoccus	BLMSS				K
Wildlife Species						
<i>Accipiter gentilis</i>	Northern goshawk	BLMSS				
<i>Agelaius tricolor</i>	Tricolored blackbird	BLMSS				
<i>Athene cunicularia</i>	Burrowing owl	BLMSS				
<i>Bufo californicus</i>	Arroyo toad	FE	S		S	S
<i>Callophrys gryneus thornei</i>	Thorne's hairstreak butterfly	BLMSS				K

**Table 3-4
Special Status Species**

Scientific Name	Common Name	Status ¹	Occurrence ²			
			LA-O	B-MT	R-SB	S-SD
<i>Clemmys marmorata pallid</i>	Southwestern pond turtle	BLMSS				
<i>Dipodomys merriami parvus</i>	San Bernardino kangaroo rat	FE			CH	
<i>Dipodomys stephensi</i>	Stephens' kangaroo rat	FE, ST		S	K	S
<i>Empidonax traillii extimus</i>	Southwestern willow flycatcher	FE	S		S	CH
<i>Euderma maculatum</i>	Spotted bat	BLMSS				
<i>Eumops perotis californicus</i>	Western mastiff bat	BLMSS				
<i>Euphydryas editha quino</i>	Quino checkerspot butterfly	FE		CH	CH	CH
<i>Gasterosteus aculeatus williamsoni</i>	Unarmored threespine stickleback	FE	CH			
<i>Gymnogyps californianus</i>	California condor	FE	S			
<i>Macrotus californicus</i>	California leaf-nosed bat	BLMSS				
<i>Myotis ciliolabrum</i>	Small-footed myotis	BLMSS				
<i>Myotis evotis</i>	Long-eared myotis	BLMSS				
<i>Myotis thysanodes</i>	Fringed myotis	BLMSS				
<i>Myotis yumanensis</i>	Yuma myotis	BLMSS				
<i>Phrynosoma coronatum blainvillii</i>	Coast horned lizard	BLMSS	S	K	K	K
<i>Plecotus townsendii</i>	Townsend's big-eared bat	BLMSS				
<i>Polioptila californica californica</i>	Coastal California gnatcatcher	FT	CH	CH	CH	CH
<i>Scaphiopus hammondi</i>	Western spadefoot toad	BLMSS				
<i>Thamnophis hammondi</i>	Two-striped garter snake	BLMSS				
<i>Vireo bellii pusillus</i>	Least Bell's vireo	FE, SE	S		S	S
<i>Vireo vicinior</i>	Gray vireo	BLMSS				

¹ Status: FE = Federally Endangered, FT = Federally Threatened, FC = Federal Candidate, SE = State Endangered, ST = State Threatened, SR = State Rare, BLMSS = BLM Sensitive Species.

² Occurrence: LA-O = Los Angeles County Management Area, B-MT = Beauty Mountain Management Area, R-SB = Riverside / San Bernardino County Management Area, S-DG = San Diego County Management Area, K = Known, S = Suspected, CH = Critical Habitat.

Species accounts are presented below for the listed species identified in this section. Pertinent aspects of the status, distribution, life history, and habitat requirements of these species have been extracted from a variety of sources, including the proposed and final rules to list these species; the proposed and final rules to designate critical habitat, recovery plans, scientific journal articles, Multiple Species Conservation Program plans, and other relevant documents. Records of occurrence for the Planning Area are based on BLM file documents and field notes, published literature sources, technical reports, and the California Department of Fish and Game's California Natural Diversity Database (CNDDDB).

3.7.1 Federally Listed Species and Critical Habitat

There are 24 federally listed species (15 plants and 9 animals) within the South Coast planning area that are known or suspected to occur on BLM lands. Critical habitat has been designated on BLM-administered lands for seven species: coastal California gnat-catcher, southwestern willow flycatcher, San Bernardino kangaroo rat, Quino checkerspot butterfly, Mexican flannelbush, Nevin's barberry, and thread-leaved brodiaea. Eight of the 15 threatened/endangered plant species in the planning area are known or expected to occur just on Otay Mountain in San Diego County: San Diego thorn-mint (*Acanthomintha ilicifolia*), San Diego ambrosia (*Ambrosia pumila*), Del Mar manzanita (*Arctostaphylos glandulosa* var. *crassifolia*), Encinitas baccharis (*Baccharis vanessae*), Otay tarplant (*Deinandra conjugens*), Mexican flannelbush (*Fremontodendron mexicanum*), Jennifer's monardella (*Monardella stoneana*).

A series of preserves have been established for the Stephen's kangaroo rat in western Riverside County through the Stephens' Kangaroo Rat Habitat Conservation Plan. The total acreage for all critical habitat and SKR core reserves amounts to 46,056 acres or approximately 35% of the BLM land in the planning area.

Munz's Onion (*Allium munzii*) (FE, ST). Munz's onion is a perennial herb that is endemic to southwestern Riverside County. This species is restricted to mesic, heavy clay soils at elevations between approximately 1,000 and 3,500 feet in grassy openings in coastal sage scrub, chaparral, juniper woodland, valley and foothill grasslands. Munz's onion has not been verified on BLM lands, although there are CNDDDB records within 3 miles of BLM land in the southwestern portion of the Riverside–San Bernardino County Management Area.

San Diego Ambrosia (*Ambrosia pumila*) (FE). *Ambrosia pumila* is an herbaceous perennial plant that occurs on upper terraces of drainages, in open grasslands, openings in coastal sage scrub, and in disturbed sites such as fire fuel breaks and edges of dirt roadways. In Riverside County, San Diego ambrosia is associated with open, gently sloped grasslands and is generally associated with alkaline soils. San Diego ambrosia generally occurs at low elevations (generally less than 1,600 feet in the Riverside County and less than 600 feet in San Diego County). Within the Riverside-San Bernardino County MA, there is a known occurrence (CNDDDB record) on BLM parcel 176-041 (.5 mi. SE of Steele Peak). San Diego ambrosia may occur on Otay Mt. but needs to be confirmed.

Nevin's Barberry (*Berberis nevinii*) (FE, SE). *Berberis nevinii* is a perennial shrub, which typically occurs at elevations from approximately 900 to 2,000 ft. *Berberis nevinii* has a limited natural distribution; it typically occurs in small stands with less than 20 individuals (and often with only one or two plants) in scattered locations in Los Angeles, San Bernardino, and Riverside Counties. *Berberis nevinii* occurs in association with the following plant communities: chaparral, coastal sage scrub, oak woodland, and/or riparian scrub or woodland. Critical Habitat has been designated for BLM parcel number 205-341, consisting of approximately 5 acres located on Big Oak Mountain in southern Riverside County. Two *Berberis nevinii* individuals of different sizes (ages) are known to occur. One individual is an old plant that is covered in lichens, and the other individual is considerably smaller and at some distance to the northeast of the older plant.

Thread-Leaf Brodiaea (*Brodiaea filifolia*) (FT, SE). Localities occupied by this species are frequently intermixed with, or near, vernal pool complexes. This species is not expected on BLM land in the management area because of the likely absence of vernal pools on BLM land.

Slender-Horned Spineflower (*Dodecahema leptoceras*) (FE, SE). The slender-horned spineflower is endemic to southwestern cismontane California. The ideal habitat appears to be a terrace or bench that receives overbank deposits every 50 to 100 years. Slender-horn spineflower occurs on the BLM parcels in the Santa Ana Wash ACEC (BLM parcels 107-021, 107-101, 107-121). According to the 1994 RMP, land near Valle Vista and the San Jacinto River (BLM parcel 180-111) were to be managed for the protection of the slender-horned spineflower.

Santa Ana River Woolly Star (*Eriastrum densifolium* ssp. *sanctorum*) (FE, SE). The species is found only within open washes and early-successional alluvial fan scrub. It grows on open slopes above main watercourses on fluvial deposits. Frequent flooding and scouring creates open shrublands that support this species. Flood-mediated habitat rejuvenation may be required to ensure its survival, as sheet-flood flows may only occur in this habitat every one hundred to two hundred years. Occurrence on BLM is in the Santa Ana River Wash ACEC, in San Bernardino County, on BLM parcels: 107-101, 107-021, 107-121, and 108-081.

Mexican Flannelbush (*Fremontodendron mexicanum*) (FE). This species has an extremely limited distribution within the United States. Mexican flannelbush is only found growing naturally in southern San Diego County on Otay Mountain and in northwestern Baja California, Mexico. It is found in Cedar and Little Cedar and canyons, growing on alluvial terraces, benches, and associated slopes within 500 feet (152 meters) of streams, creeks, and ephemeral drainages where water flows primarily after peak seasonal rains. Habitat loss and fragmentation from grazing, along with alteration of fire regimes has historically been a threat to this species. Presently, grazing is not occurring within the range of Mexican flannelbush and, during surveys conducted following the Otay Fire of 2003, it was discovered that the flannelbush is thriving. Although Mexican flannelbush is a facultative resprouter and adapted to natural fire cycles, changes in fire frequency or timing may be detrimental to this species' existence, along with subsequent non-native grass invasion that would compete with the flannelbush for

resources. Approximately 228 acres of critical habitat have been designated in Cedar and Little Cedar canyons.

Spreading Navarretia (*Navarretia fossalis*) (FT). This annual herb is primarily found in vernal pool, alkali grasslands, alkali playas and alkali sinks in portions of Los Angeles, Riverside, Orange and San Diego Counties at elevations between sea level and 4,250 feet. This species has not been verified on BLM lands, but CNDDDB records occur within three miles of BLM parcels in the Riverside / San Bernardino and San Diego MAs.

San Bernardino Kangaroo Rat (*Dipodomys merriami parvus*). This species is restricted to Southwestern San Bernardino County and Western Riverside County. It occurs in soils consisting predominantly of sand or loam in alluvial fan sage scrub, coastal sage scrub, and chamise chaparral, with a moderately open canopy. Its habitat is mostly in river channels, alluvial fans, and flood plains that are subject to periodic flooding. Critical Habitat is designated on BLM land in the Santa Ana Wash (Parcels 107-101, 107-121, 108-081), and on portions of BLM parcels along the San Jacinto River, and totals approximately 3,300 acres. Critical habitat for the San Bernardino Kangaroo Rat is shown in Maps 3-15 through 3-17.

Stephens' Kangaroo Rat (*Dipodomys stephensi*) (FE, ST). The Stephens' kangaroo rat (SKR) is restricted to Riverside County and adjacent northern-central San Diego County, and is found almost exclusively in open grasslands or sparse shrublands. In May of 1996, the USFWS, BLM, CDFG, and the Riverside County Habitat Conservation Agency (RCHCA) signed an implementing agreement for the *Stephens' Kangaroo Rat Habitat Conservation Plan*, which established seven SKR core reserves in western Riverside County. The following BLM parcels, totaling approximately 4,500 acres, are included in these reserves: Lake Mathews / Estelle Mountain Reserve (158-001, 159-001, 159-321, 159-322, 159-323, 175-061, 175-081, 175-101); Steele Peak Core Reserve (160-281, 160-321, 176-041, 176-201); Potrero / Badlands (144-041, 144-101, 144-021); Motte / Rimrock Core Reserve (160-141, 160-241), and Southwest Riverside County / Multi-Species Core Reserve (191-241, 191-242, 205-082). The locations of the reserve sites and BLM parcels are shown in Map 3-16. Within the Beauty Mountain Management Area, CNDDDB records for this species occur within three miles of BLM parcels on the northern portion of the management area.

Southwestern Willow Flycatcher (*Empidonax traillii extimus*) (FE). This species is currently known to occur in very few areas within the planning area. It prefers mature willow thickets in riparian woodland for nesting. Habitat loss and brown-headed cowbird parasitism are the main causes for this species decline. The following drainages represent the known range in the South Coast planning area: Sweetwater River, San Luis Rey River, and the Santa Margarita River at Camp Pendleton in San Diego County; Prado Basin and the Santa Ana River in Riverside County; and the Santa Clara River in Los Angeles County. There is no known occupied habitat for this species on BLM. However, based on the riparian habitat rated as having high potential for supporting least Bell's vireo on BLM land (extensive, well-developed and mature riparian areas with willows as a major component), approximately 1.5 miles of potential habitat exists for the Southwestern Willow Flycatcher on BLM public land outside of the known occupied habitat. This habitat occurs on five separate parcels including a short segment in the

upper reaches of the Santa Margarita River drainage (parcel 217-261), a one-mile segment along Tim's Canyon (parcel 255-231), over two miles at Hauser Mountain (293-331), a short segment on Rainbow Creek and almost a mile at Fern Creek.

Quino Checkerspot Butterfly (*Euphydryas editha quino*) (FE). Within the Riverside-San Bernardino County MA, the current distribution for this species occurs in the southern and southeastern portions of the MA. BLM parcel 207-121, north of the Cahuilla Indian reservation, supports known populations of the Quino checkerspot butterfly (QCB). This area is described as Existing Noncontiguous Habitat Block C in the Western Riverside MSHCP. Maintenance of habitat quality in this parcel and connections to other areas supporting populations of QCB is important for this species.

Within the Beauty Mountain Management Area, critical habitat is currently designated in the northern part of the management area and includes portions of three BLM parcels, comprising approximately 350 acres (Map 3-16).

In San Diego County, QCB is found from Otay Mt. east to Jacumba within the Southwest San Diego Quino Recovery Unit (U.S. Fish and Wildlife Service 2003). Occurrence complexes (i.e., spatially clustered sets of confirmed Quino observation or collection records) include BLM lands and are located on Otay Mt., in Dulzura, Barrett Junction, Marron Valley, Tecate and Jacumba. Frequent fire return intervals throughout San Diego County have had a major adverse impact on habitat for QCB. Following the Otay Fire of 2003 and the Harris Fire of 2007, there has been a rapid conversion of native coastal sage scrub and chaparral to nonnative invasive grasses, making the preservation, enhancement and protection of the existing occurrence complexes critically important.

In December of 2008, the USFWS proposed a revision of critical habitat for QCB. This proposal to revise critical habitat focuses on areas known to contain "core" occurrence complexes (i.e., an occurrence complex that contains a large population that remains stable over the long-term while smaller, outlying populations disappear and reappear based on changing local environmental conditions). Core occurrence complexes provide the source of QCB to re-colonize surrounding areas. The Dulzura, Marron Valley occurrence complexes, which contain BLM lands, are considered to be core occurrence complexes under the 2008 proposed revision.

Unarmored Threespine Stickleback (*Gasterosteus aculeatus williamsoni*) (FE). This endangered fish species does not occur on BLM public lands. Its range within the Santa Clara River is, however, adjacent to several small BLM public land parcels and BLM split estate lands with moderate to high potential for aggregate material. This puts the species in a position of potentially being impacted from secondary impacts related to sand and gravel extraction, such as increased sediment loads.

California Condor (*Gymnogyps californianus*) (FE, SE). This species is both federally and State-listed as endangered. The USFWS continues to oversee a reintroduction program for this species. Based on studies of released Andean condors by the USFWS, probable condor habitat was designated as either core use areas, main range limits, or areas of expected extension of condor range. Core use areas were defined as the area

where condors concentrate their activities such as feeding, roosting, and the majority of their flight activity. The main range limits constitute the area where the Andean condors spent ninety percent of their time. The expected extension of condor range is based on areas known to have previously been used by wild California condors and still appear to retain suitable habitat constituents for condors. Based on the USF&WS analysis of probable condor habitat, a total of 780 acres of BLM public lands occur within the core use area, with an additional 4826 acres within the area identified as the limit of the condors' main range.

Coastal California Gnatcatcher (*Polioptila californica californica*) (FT). This species is endemic to cismontane southern California and northwestern Baja California, Mexico. The gnatcatcher typically occurs in or near coastal sage scrub. Revised final critical habitat (2007) was designated in Los Angeles, Orange, San Bernardino, Riverside, and San Diego Counties, with approximately 27,500 acres in Riverside and San Bernardino Counties. Approximately 6,850 acres (contained within 34 parcels) of critical habitat occur on BLM lands within the management area (Map 3-16).

Least Bell's Vireo (*Vireo bellii pusillus*) (FE, SE). The least Bell's vireo is Federally and State endangered. Vireos are obligate riparian breeders, typically inhabiting structurally diverse woodlands along watercourses that feature dense cover within 3 to 6 feet of the ground and a dense, stratified canopy, with willow dominating the canopy layer. Within the South Coast planning area, habitat is restricted to riverine and floodplain habitats with appropriate riparian vegetation. Within the Riverside / San Bernardino County MA, suitable habitat for this species occurs within the Santa Margarita River drainage and within areas around Steele Peak. Within the San Diego MA, suitable habitat occurs in the Santa Margarita River drainage, including segments of Fern Creek and Rainbow Creek, another segment is in Tim's Canyon near Santa Ysabel Creek and another is near Hauser Mountain. Potentially suitable habitat for this species does occur within the Beauty Mountain management area. Although this species occurs within the Los Angeles County MA, it is not known to occur on or near any of the scattered BLM public land parcels in this management area.

3.7.2 State Listed Species

There are 18 State listed species (16 plants and 2 animals) within the South Coast planning area (Table 3-4). Several of these species also have federal status. State-listed species with federal status are described above in Section 3.7.1.

3.7.3 BLM Sensitive Species

BLM Sensitive Species are species that are not already designated as federal or State listed species. BLM Sensitive Species designation is used for species that occur on Bureau administered lands for which BLM has the capability to significantly affect the conservation status of the species through management and, for plant species assigned 1B status by the California Native Plant Society. The BLM policy is to ensure that actions authorized, funded, or carried out by the BLM do not contribute to the need for these species to become listed as threatened or endangered. There are 36 BLM Sensitive

tive Species (18 plants and 18 animals) known or suspected on BLM lands in the South Coast planning area (Table 3-4). Below are key species occurring in the San Diego planning area.

Tecate Cypress (*Callitropsis [Cupressus] forbesii*). Tecate cypress occurs only in scattered stands on several mountains in southern California: Otay and Guatay Mountains, and Tecate and Sierra Peaks. Approximately 84% of the U.S. distribution of Tecate cypress occurs on Otay Mountain in San Diego. Although Tecate cypress is dependent on fire for its reproduction, it takes 30-40 years for the cypress to become reproductively mature and produce enough cones with viable seed to repopulate burned areas following fire. Due to frequent fires over the past few decades, there has been a significant reduction in population size and distribution of the cypress. Reproductively mature cypress has been reduced from about 6,000 acres in 2003 to around 90 acres in 2008. Currently, there are substantial populations of immature cypress and, if allowed to mature, will reestablish a significant population capable of surviving future fires. However, if a single fire were to burn the entire population on Otay Mountain before maturity, the stands could be severely reduced or extirpated.

Thorne's Hairstreak Butterfly (*Callophrys gryneus thornei*). The only known populations of Thorne's hairstreak occur on BLM lands on Otay Mountain, within the San Diego County Management Area. Thorne's hairstreak uses Tecate cypress as the sole host for its larval form. Adult Thorne's hairstreak nectar on a variety of flowering plants that are found in the vicinity of Tecate cypress; these include: California buckwheat (*Eriogonum fasciculatum*), deerweed (*Lotus scoparius*), manzanita (*Arctostaphylos otayensis*), and Ramona lilac (*Ceanothus tomentosus*). Comprehensive research is currently being conducted to learn more about the biology of Thorne's hairstreak and its use of varying age classes of Tecate cypress. The same threats exist for Thorne's as for the Tecate cypress. Reduction or extirpation of Tecate Cypress due to frequent fire return intervals would be devastating for Thorne's hairstreak which is dependent on the cypress for its existence.

Coast Horned Lizard (*Phrynosoma coronatum blainvillei*). *P. c. blainvillei* seems to have disappeared from about 45% of its former range in southern California, in particular on the coastal plain where it was once common (Hayes and Guyer, 1981) and in riparian and coastal sage scrub habitats on the old alluvial fans of the southern California coastal plain (Bryant, 1911, Van Denburgh, 1922). In California, *Phrynosoma c. blainvillei* ranges from the Transverse Ranges south to the Mexican border west of the deserts, although the taxon occurs on scattered sites along the extreme western desert slope of the Peninsular Ranges (Jennings, 1988). The coast horned lizard is found in a wide variety of vegetation types including coastal sage scrub, annual grassland, chaparral, oak woodland, riparian woodland and coniferous forest (Klauber, 1939; Stebbins, 1954). Commercial collecting and habitat loss due to agriculture and urbanization are the main reasons cited for the decline of these taxa. Most surviving populations inhabit upland sites with limited optimal habitat. However, the most insidious threat to *P. c. blainvillei* is the continued elimination of its food base by exotic ants. Argentine ants colonize around disturbed soils associated with building foundations, roads and landfills, and expand into adjacent areas, eliminating native ant colonies (Ward, 1987). Under

these conditions *P. c. blainvillei* populations have become increasingly fragmented, and have undergone the added stress of a number of other factors, including fire, grazing, off-road vehicles, domestic cats, and development (Jennings and Hayes, 1994).

3.7.4 Regional Habitat Conservation Planning

The BLM participates in several regional conservation efforts within the South Coast Planning Area. These efforts include Habitat Conservation Plans (HCP) to meet the requirements and objectives of the federal Endangered Species Act and the California Natural Communities Conservation Program (NCCP) as well as international conservation initiatives. HCPs include the Stephens' Kangaroo Rat Habitat Conservation Plan, the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP), the San Diego County Multiple Species Conservation Program (MSCP), and the San Diego Multiple Habitat Conservation Plan (MHCP). Maps of the HCPs are included in Maps 3-18 and 3-19.

Stephens' Kangaroo Rat Habitat Conservation Plan. The Stephens' Kangaroo Rat HCP is a single species conservation plan. This plan was signed in 1996 and includes seven SKR core reserves throughout western Riverside County. BLM is responsible for managing three of these reserves in partnership with local jurisdictions, USFWS, and CDFG.

Western Riverside County Multi-Species Habitat Conservation Plan. The Western Riverside County MSHCP addresses 14 federally listed animals, 11 federally listed plants, and 121 unlisted plants and animals for a total of 146 species. A main objective of the Western Riverside MSHCP is to create a reserve system of 500,000 acres to provide habitat for these 146 species of plants and animals. Approximately 347,000 acres are already conserved on existing public and quasi-publicly owned lands, including approximately 27,000 acres of BLM land. BLM lands played an important role in the development of core conservation areas and the linkages between these core areas (Map 3-18). Approximately 153,000 additional acres are needed to complete the reserve design, which will come mainly from the acquisition of private lands. These properties will provide for and maintain biological diversity through a system of connected reserves throughout the western portion of Riverside County.

San Diego Multiple Species Conservation Program. The San Diego MSCP is divided into three subarea plans: County of San Diego Subarea Plan; North County Subarea Plan; and East San Diego County Subarea Plan. An integral part of habitat conservation planning revolves around the creation of a regional interconnected habitat conservation system, consisting of federal, county, and city lands. Existing public lands, including BLM lands, formed the initial backbone upon which these HCPs were built. To aid in this integral approach, the BLM has agreed to manage its lands to be consistent with these habitat conservation plans. This agreement includes making the maintenance and management of biological diversity a principal goal on BLM lands within HCP conservation area boundaries (Map 3-19).

The San Diego MSCP is a comprehensive, long-term habitat conservation plan which addresses the needs of multiple species and the preservation of natural vegetation

communities in San Diego County. The MSCP addresses the potential impacts of urban growth, natural habitat loss and species endangerment and creates a plan to mitigate for the potential loss of covered species and their habitat due to the direct impacts of future development of both public and private lands within the MSCP area.

The County of San Diego Subarea Plan covers 85 species within three conservation areas: Lake Hodges Segment, South County Segment, and the Metro-Lakeside-Jamul Segment. Approximately 25,000 acres of BLM lands are located within the County of San Diego Subarea Plan. The South County segment of the subarea plan identified BLM lands, including the Otay Mountain Wilderness, as the Otay/Kuchamaa Cooperative Management Area.

The North County Subarea Plan has not yet been approved. This plan is being created as a practical, science-based conservation approach to protect and contribute to the recovery of sensitive species within the Planning Area, while providing for continued economic growth and prosperity for land owners, agricultural operators, businesses, and residents. The subarea plan intends to cover 58 species many of which were covered in the existing MSCP Plan but also some additional species, the most notable being the Stephens' kangaroo rat which lives in grasslands and the San Diego fairy shrimp which inhabits vernal pools. The impetus for the plan is rooted in two unique aspects of San Diego County-high biological diversity and rapid urban growth. San Diego County has more rare, threatened, and endangered species than any comparable land area in the continental United States. On a national and global scale, the region has been identified as a major "hot spot" for biodiversity and species endangerment in scientific journals. San Diego County is also one of the most rapidly growing regions of the country. The total study area for the Plan encompasses 311,890 acres in and around the unincorporated communities of Bonsall, De Luz, Fallbrook, Harmony Grove, Rancho Santa Fe, Lilac, Pala, Pauma Valley, Rainbow, Ramona, Rincon Springs, Twin Oaks Valley, and Valley Center. This study area has been further distilled into a Planning Area which excludes tribal lands, Forest Service lands, and most water district lands. Of the 280,459-acre Planning Area where the conservation measures will apply, approximately 17% is urbanized and 28% is in agriculture (excluding grazing lands). The remaining 55% of the Planning Area consists of natural lands.

The East County Subarea Plan is also being drafted at this time and has not been approved. The plan covers 1,551,600 acres and is bounded on the west by Ramona and the State Park areas of Descanso and Palomar Mountain; the north by Riverside County; the east predominantly by Imperial County; and the south by Mexico. Indian reservations are excluded from the study area. The East County Subarea Plan will cover the backcountry communities of Central Mountain, Cuyamaca, Descanso, Pine Valley, Desert / Borrego Springs, Julian, Mountain Empire, Boulevard, Jacumba, Lake Morena / Campo, Potrero, Tecate, portions of Dulzura, and Palomar / North Mountain. The purpose is to protect key sensitive plant and animal populations and habitats within the County. The overall effect of the MSCP plans is the creation of a large connected preserve that addresses the regional habitat needs for a number of species. The East County Subarea Plan currently proposes to cover up to 254 species.

Non-Governmental and International Conservation Planning. In addition to the regional conservation plans in the RMP area, two other conservation strategies have been developed: Las Californias Binational Conservation Initiative and the South Coast Missing Linkages Project.

The Las Californias Binational Conservation Initiative is a shared vision for landscape-scale conservation strategies, sustainable land use planning, and workable long-term management programs along the U.S.-Mexico border. The goal of the initiative is to conserve the integrity and biological diversity of the Las Californias region across the coast-mountain-desert gradient and urban-wildland gradient and, in turn, to support sustainable communities. Over the last three years, tangible results of this vision have already been achieved in the conservation of over 1,300 acres in the coastal Otay Mountain/Cottonwood Creek corridor (the Pamali and McAlmond Canyon properties) and over 800 acres in the inland La Posta Linkage (lands on Hauser Mountain and lands adjacent to La Posta in Campo). An additional 2,500 acres of land in the Las Californias study area are under option for purchase. This vision has also bolstered the efforts of other conservation partners, such as the San Diego National Wildlife Refuge and the East County MSCP, and has increased the awareness of landowners and elected officials in the border region of the conservation significance of this area.

South Coast Wildlands, one of several NGOs in the region, is working to maintain and restore connections between wildlands in the South Coast Ecoregion through an effort called the *South Coast Missing Linkages Project*. This project addresses fragmentation at a landscape scale. The approach is to identify and prioritize linkages that conserve essential biological and ecological processes (Map 3-19). This project gathers the most current biological data for each linkage design to ensure the viability of the full complement of species native to the region. The methods involve partnering, gathering existing data, identifying impediments to and opportunities for connectivity, and stimulating a collaborative effort for each important linkage. South Coast Wildlands hopes that the South Coast Missing Linkages effort will serve as a catalyst for directing funds and attention toward the protection of ecological connectivity for the South Coast Ecoregion and beyond.

3.8 Wildland Fire and Fuels

Cooperative Fire Protection Agreements are developed between CAL FIRE and BLM which provides the framework for Annual Operating Plans established with each CAL FIRE Unit in the planning area. The Annual Operating Plans ensure that fires in a particular habitat and the response to fires in that habitat are consistent across BLM, USFS, and CAL FIRE-protected lands. The Palm Springs–South Coast/EI Centro Fire Management Zone has Annual Operating Plans with CAL FIRE, Los Angeles County Fire Department, and the U.S. Forest Service. The plans cover the Palm Springs–South Coast and EI Centro areas that receive fire suppression and fire investigation services from CAL FIRE. CAL FIRE has a statutory responsibility to suppress all fires on lands they protect and have a financial interest in keeping the fires as small and inexpensive as possible. BLM has the responsibility to provide a qualified Agency Representative (AREP), fire prevention, law enforcement, and resource management on these lands. BLM works to minimize impacts to resources from suppression activities and reduce rehabilitation costs from fire-related damage. Wilderness, Wilderness Study Areas (WSAs), and Areas of Critical Environmental Concern (ACECs) are identified by BLM as special management units requiring additional consideration to protect the resources on these lands. The planning area is dominated by areas of chaparral and coastal sage scrub. Most of these vegetation communities have developed characteristics to survive wildfires; additionally, a few have adapted in ways that take advantage of fire's attributes and must be managed accordingly. For vegetative communities, the problems associated with wildland fires are caused by too short of a fire return interval or too frequent fires.

The current Fire Management Plan (FMP) for the California Desert District (CDD) was developed in 2004. The FMP was designed around a “fire management zone” (FMZ) concept based on distinct vegetation communities and the strategies for fire suppression within each of those fuel types. The intent was that Land Use Plan decisions for resource protection would be the driving factor to identify objectives and constraints for fire suppression activities.

The FMP categorized the planning area as Fire Management Units CA669-1, CA669-2, CA669-5, CA669-6, and CA669-7 which are in California Department of Forestry and Fire Protection (CAL FIRE), Los Angeles County Fire and Direct Protection Areas (DPA). This means that CAL FIRE is the primary fire protection agency for BLM-administered lands in the planning area. Their fire policy objective is to suppress all vegetation fires at 10 acres or less upon initial attack, based on “assets at risk analysis” which favors protection of life and property in the wildland-urban interface (WUI). CAL FIRE and BLM operate under the Cooperative Fire Protection agreement which states that CAL FIRE is to consider BLM's resource protection standards to select the least cost/least damaging suppression strategy. On all vegetation fires within the planning area, BLM is required to send an Agency Representative (AREP) to work directly with the CAL FIRE incident commander to ensure BLM strategies are integrated into planning. In addition to the AREP, Resource Advisor's (READ) may be requested.

The planning area is situated in an area with fuel types (chaparral and coastal sage scrub communities) that are highly susceptible to burning (Map 3-20 Fire Severity throughout the Planning Area). Combined with a scattered grass component and increasing dry climatic conditions, this fuel type is characterized by extreme fire behavior potential throughout most of the year. The potential for large fire occurrence is a constant threat for private communities in the area.

Besides natural ignition sources that result in wildfires, undocumented immigrants have been directly linked to campfires during their illegal movement from Mexico into the United States. County Supervisor Dianne Jacob reported to the San Diego Union Tribune in October of 2006 that in the first nine months of 2006, 322 wildfires were sparked by campfires of undocumented immigrants.

In order to prevent undocumented immigrants from illegally crossing into the United States, the construction of a border fence along the United States / Mexico border is under way. The border fence will include 4.4 miles of tactical infrastructure and 5.2 miles of supporting patrol roads. The border fence is expected to reduce the number of undocumented immigrants crossing and potentially reduce the number of unwanted ignitions due to campfire in the vicinity. Past fire history has shown that vegetation fires that become well-established in the heavier chaparral fuel types under strong wind conditions usually make significant runs. A trend in fire starts due to increased urbanization along the travel corridors and in recreation areas is a major concern to fire agencies.

For natural fire starts, the mountain ranges in San Diego County are most often hit with lightning during the summer months when monsoonal flows move up from Mexico. Map 3-21 shows the fire history within the planning area.

The BLM and CAL FIRE, in cooperation with local agencies and non-governmental organizations, have recently developed fuels treatment plans in wildland-urban interface areas. Both agencies and these groups work together with fire safe councils under community wildfire protection plans (CWPP's) to collaborate with private landowners for a protection strategy from wildfires.

3.9 Cultural Resources

The management of cultural resources on BLM land must be in compliance with several federal laws, including:

- Antiquities Act of 1906;
- NHPA of 1966, as amended;
- NEPA of 1969;
- EO 11593 “Protection and Enhancement of the Cultural Environment”;
- Federal Land Policy and Management Act of 1976;
- American Indian Religious Freedom Act of 1978;
- Religious Freedom Restoration Act of 1993;
- Archaeological Resource Protection Act of 1979;
- Native American Graves Protection and Repatriation Act of 1990;
- EO 13007, “Indian Sacred Sites”; and
- EO 13287, “Preserve America.”

BLM also manages cultural resources in accordance with the National Programmatic Agreement (1997) Among the Bureau of Land Management, the Advisory Council on Historic Preservation and the National Conference of State Historic Preservation Officers Regarding the Manner in Which the BLM will Meet Its Responsibilities under the National Historic Preservation Act. In addition, the BLM manages its cultural resources according to BLM Manuals 8100 through 8170, and in accordance with the Revised State Protocol Agreement (2007) between the California State Director of the BLM and the California and Nevada SHPOs, as amended.

Cultural resources are defined as locations of human activity, occupation, or use identifiable through field inventory (survey), historical documentation, or oral evidence. The term includes archaeological, historic, or architectural sites, structures, or places with important public and scientific uses, and may include definite locations (sites or places) of traditional cultural or religious importance to specified social and/or cultural groups. Cultural resources are concrete, material places and things. Historic properties are those cultural resources which are eligible for listing in the National Register of Historic Places.

A traditional cultural property is a property that derives significance from traditional values associated with it by a social and/or cultural group such as an Indian tribe or local community. A traditional cultural property may qualify for the National Register if it meets the criteria and criteria exceptions at 36 CFR 60.4.

Traditional values are associated with a social and/or cultural group’s traditional systems of religious belief, cultural practice, or social interaction, and may not be closely

identified with definite locations. Traditional values are taken into account through public participation during planning and environmental analysis or through tribal consultation, as applicable. Traditional values may imbue a place with historic significance.

The South Coast Planning Area, along with its diverse geography and habitat types, also presents a complex range of cultural resources and cultural groups, including several Native American populations. As the pace of development in the region accelerates BLM-managed lands become increasingly valuable as a reserve of cultural resources.

Approximately 23,000 acres, or 2%, of BLM public land within the planning area have been inventoried for cultural resources. Approximately 70,000 acres, or 4%, of BLM split estate land has been inventoried. As a result of these inventories 744 archaeological sites have been recorded: 193 on public land and 551 on split estate.

One traditional cultural place (TCP) has been identified and listed in the National Register of Historic Places. Kuchamaa (Tecate Peak) is recognized as a place of cultural and religious significance to the Kumeyaay people. Kumeyaay oral tradition speaks of Kuchamaa as a place for the acquisition of spiritual knowledge, power, and cleansing.

ECORP (Bholat and Chandler 2008) conducted Class III, intensive pedestrian, cultural resources inventory along routes of travel throughout the South Coast area in support of the planning effort. As a result of this project an additional 3030 acres of BLM public land was surveyed; 100 additional cultural resources were identified. Class I overviews were prepared for the South Coast Planning Area (Mason 2008) and Otay/Kuchamaa area (Gallegos et al. 2002). The following background information has been summarized from these reports and from Moratto (1984) unless otherwise specified.

3.9.1 Prehistoric Context

The major chronological synthesis for the southern California region generally cited in the literature is that of Wallace (1955). Wallace's synthesis of California prehistory posits four temporal horizons. The concept of "horizon" was used to synthesize large geographical areas that appeared to share similar cultural characteristics at similar times in prehistory. The horizons were based on the presence or absence of temporally diagnostic items such as projectile points or mortars and pestles. The horizon concept has been replaced with "periods" since large numbers of radiocarbon dates are now available to provide chronological control for the artifacts and settlement patterns that are characteristic of each period. Wallace's terminology provides a broad general structure for discussing temporal periods; locally specific chronologies have also been developed but will not be discussed here.

3.9.1.1 Horizon I: Early Man Period/Early Holocene (10,000 to 7,500 B.P.)

The first inhabitants of California are believed to have been big game hunters and gatherers exploiting extinct species of Pleistocene megafauna (e.g., mammoth and other Rancholabrean fauna). Local "fluted point" assemblages comprised of large spear

points or knives are stylistically and technologically similar to Paleo-Indian cultural traditions dated elsewhere in North America (Moratto 1984). Approximately 10,000 years before present (B.P.) at the beginning of the Holocene, increasingly warm temperatures and human predation caused the extinction of the megafauna and a shift in subsistence strategies towards a greater reliance on smaller game and plant gathering. Wallace termed the Early Holocene period Horizon I: Early Man, and defined the complex as including scrapers, scraper planes, flaked stone crescents, and large blades and points. Wallace noted that milling equipment, used to process plant foods, was absent from this complex.

Recent research indicates that Early Holocene subsistence strategies were more complex than originally believed. Milling equipment has been found in sites dated to this time period and coastal groups exploited marine food resources as well as land-based resources.

3.9.1.2 Horizon II: Milling Stone Period/Middle Holocene (7,500 to 3,000 B.P.)

Manos and milling stones (metates) are common in sites of this period and Wallace defined the Milling Stone Period based upon their presence. The assemblage also includes hammerstones, large core-cobble chopping tools, large flake tools including scraper-planes and scrapers, worked bone, beads, cogged stones, discoidals, doughnut stones, and stone balls. Projectile points (usually large leaf-shaped, corner notched, and stemmed points) are not plentiful, but faunal evidence indicates that hunting continued to play a role in subsistence.

Variability within the Milling Stone Period can be seen in the contrast between coastal and inland sites. Sites near bays and estuaries contain abundant shellfish remains. Inland sites dating to this period contain numerous manos and metates but lack the marine subsistence remains seen elsewhere.

The increase in the number of sites identified and dated to this period argues for a regional increase in population and opens the debate as to whether the increase is due to an influx of people from other places, or whether cultures developed in place. However, population density appears to be relatively low compared to later periods, and the settlement system may have consisted of small bands moving in a seasonal round from the coast to inland areas and back again.

3.9.1.3 Horizon III: Intermediate Period/Late Holocene (3,000 to 1,500 B.P.)

Projectile points occur with more frequency in Intermediate Period sites, but it is the use of mortars and pestles which distinguishes this period from the preceding period. Mortars and pestles are associated with the processing of acorns. Use of the acorn, a storable, high-calorie food source, probably allowed greater sedentism, especially in inland areas. Coastal cultures also continued their trajectory towards increasingly complex and diversified subsistence strategies.

Large projectile points, including Elko points, indicate that hunting was probably accomplished with the *atlatl* or spear thrower. The settlement pattern may have been semi-sedentary with winter residential bases near a permanent water source and use of temporary camps for resource collection during the rest of the year.

3.9.1.4 Horizon IV: Late Prehistoric Period/Late Holocene (1,500 B.P. to Spanish Contact [A.D. 1769])

The beginning of the Late Prehistoric Period is marked by the introduction of the bow and arrow, which made hunting more efficient. Ceramics are also commonly found in sites dating to this period. Acorns continued to be an important food resource for inland groups, supplemented with seeds from sage and grasses, goosefoot, and California buckwheat which were ground into meal. Protein was supplied through the meat of deer, rabbits, and other animals, hunted with bow and arrow or trapped using snares, nets, and deadfalls. The more intensive use of resources and settlement in permanent villages near water sources may have been a response to a warmer drier period known as the Medieval Climatic Anomaly (1,300 to 700 B.P.).

Trade among local groups and inland and coastal groups was important as a means of obtaining resources from outside the local group's territory. Items traded over long distances included obsidian from the Obsidian Butte source in Imperial County and from the Coso source in Inyo County, steatite bowls and ornaments from Catalina Island, shell beads and ornaments from the Santa Barbara Channel area, rabbit skins and deer hides from the interior, and dried fish and shellfish from the coast. Acorns, seeds, and other food resources were probably exchanged locally.

The complex hunter-gatherer cultures encountered by the Spaniards in southern California developed during the Late Prehistoric Period. People lived in villages of up to 250 people located near permanent water and a variety of food sources. Each village was typically located at the center of an area from which resources for the group were gathered. Small groups left the village for short periods of time to hunt, fish, and gather plant foods. While away from the village, they established temporary camps and created locations where food and other materials were processed.

3.9.2 Ethnographic Context

The people whose traditional territory occurred, at least in part, within the Planning Area include the Chumash, Tatavium, Gabrieleño, Serrano, Luiseño, Cahuilla, and Kumeyaay. Short descriptions of their individual ethnographic context are outlined below.

3.9.2.1 Ethno-Linguistic Overview

At the time of Spanish contact, the South Coast study area was occupied by three ethno-linguistic groups: the Chumash in the northwest; the Takic speakers along the coast from Topanga Canyon to Agua Hedionda Lagoon and in the drainage areas of the Los Angeles, San Gabriel, Santa Ana, Santa Margarita, and San Luis Rey Rivers; and the Yuman speaking Ipai-Tipai or Kumeyaay to the south.

Until recently, Chumash was thought to be a Hokan language. It is now classified as a separate isolated language family unrelated to Hokan and other California language families. It appears that the Chumash language developed in place in Santa Barbara and Ventura Counties and expanded into San Luis Obispo County and the northern Channel Islands about 2,000 years ago (Golla 2007).

Takic languages are a group of related languages within the Uto-Aztecan language family. Uto-Aztecan languages were found throughout western North America and in Mesoamerica at the time of Spanish contact. The Takic languages are divided into a northern group consisting of Gabrielino, Serrano, Kitanemuk, and Tatavium, and a southern or Cupan group consisting of Luiseño-Juaneño, Cupeño, and Cahuilla. In southern California the Takic languages form a wedge between Hokan languages to the south and Chumash languages to the northwest. This geographic pattern and more recent linguistic and mitochondrial DNA analyses suggest that Takic speakers migrated into California from the Great Basin (Eshleman and Smith 2007). The Takic languages are thought to have developed in the area around Tehachapi Pass, followed by an expansion into the San Gabriel/San Bernardino Mountains and the Los Angeles Basin about 2,000 years ago.

Ipai-Tipai is one of eight Yuman languages which are part of the Hokan linguistic phylum. The other Yuman languages are found along the lower Colorado River, in western Arizona, and in Baja California. During the Early Holocene Hokan speakers may have occupied the majority of California. At the time of Spanish contact Hokan speakers were found in isolated remnant clusters among speakers of other language groups.

3.9.2.2 Chumash Language Area

The territory of the Inland Chumash included a small portion of northwestern Los Angeles County which falls within the South Coast Planning area. The Chumash were one of the most socially and economically complex hunting and gathering groups in North America. Semi-permanent villages with populations of 200 to 600 individuals were located along the coast and on the northern Channel Islands. The principal economic pursuits were marine fishing and trading. Trading was facilitated by the use of shell bead "money," made almost exclusively on the northern Channel Islands.

Inland villages were smaller than coastal sites and were generally located along rivers and tributaries. Two Inland Chumash villages listed in mission records were located near the northwest Los Angeles County study area. The village of *Sujuijos* was located between Piru Creek and Hungry Valley, possibly in Bear Gulch (in Ventura County) where water could be obtained from springs. The village of *Kashtiq* was located on the north shore of Castaic Lake in Kern County. At an elevation of 3,500 feet, it was the highest known Chumash village.

A model of Chumash settlement and subsistence has been developed by Horne (1981) based on investigations at a village site located on the upper Sisquoc River. The village was situated within a two-hour walk of several plant communities including riparian woodland, sagebrush scrub, chamise chaparral, mixed chaparral, valley grassland, and

valley-foothill woodland. Plant communities at greater distances from the village included pinyon-juniper woodland, montane coniferous forest, and potrero grasslands (mountain grasslands).

During the winter the entire population lived in the base village and subsisted primarily on stored foods including acorns, pinyon nuts, and grass seeds. Food resources collected in the spring included sage seeds, buckwheat seeds, and sugar bush fruits from the mixed chaparral and valley-foothill woodland. Yucca stalks were obtained from the chamise chaparral and mixed chaparral.

In summer most of the populations moved to mountain villages while the elderly, infirm, and children remained in the base village. Mountain villages were near the potrero grasslands where concentrations of storable grass seeds were available beginning in July. Seeds from various herbs were also available in the potrero grasslands. Manzanita berries, sage seeds, and the stonefruit of the prunus complex were available in the mixed chaparral near the mountain village beginning in June. People who remained in the base village collected manzanita berries and fruits from elderberry, the prunus complex, and laurel from the mixed chaparral within a two hour walk. Seeds from herbs and grasses were available in most of the nearby plant communities. In early fall people left the mountain village and returned to the base village bringing with them seeds to store for the winter. Collecting parties established temporary camps away from the base village to harvest acorns and pinyon nuts, which were important storable resources. Acorns were harvested from oak trees in the valley-foothill woodland, and montane coniferous forest. Oak groves of coast live oak are found in the low elevation valley-foothill woodland near the base village while the preferred acorns from black oak occur in restricted areas in the higher elevation montane coniferous forest. Pinyon nuts were collected in the pinyon-juniper woodland from late September through October.

3.9.2.3 Takic Language Area

The South Coast Planning area includes lands in Los Angeles County, southwestern San Bernardino County, western Riverside County, and northwestern San Diego County which were occupied by Takic-speaking groups at the time of Spanish contact. These Takic-speakers included the Tatavium, Gabrieleño, Serrano, Luiseño, and Cahuilla.

Tatavium

The Tatavium occupied the upper Santa Clara River drainage. Their territory bordered the Chumash on the west, Kitanemuk to the northeast and Gabrieleño to the south. Archaeologically the Tatavium resemble their Takic neighbors. Little is known about Tatavium social and political organization: few Tatavium survived beyond the Mission Period.

The Tatavium located their villages near permanent water sources at lower elevations, with resource-gathering camps at higher elevations. Plant foods, in order of importance, included yucca stalks and hearts, acorns, sage seeds, and juniper and holly leaf cherry berries (King and Blackburn 1978). Much of Tatavium territory consisted of south facing

slopes between 1500 and 3500 feet, an environment which favors yucca. Yucca stalks were collected in the spring, and the hearts were roasted in earth ovens. Acorns were available in the fall in oak groves in canyons.

Archaeological investigations at Vasquez Rocks County Park identified sites that appear to make up several loci of a Late Prehistoric Tatavium village (King, Smith, and King 1974). The village, at an elevation of about 2,500 feet, was adjacent to a permanent water source consisting of a marshy area along Agua Dulce Creek. Other sites around Vasquez Rocks were identified as temporary camps and resource processing locations used by the people from Vasquez Rocks village.

Some of the temporary camps are associated with rockshelters; non-residential sites include earth ovens, flake scatters, and rock lined pits. Flake scatters have cores, flakes, and retouched flake tools; they also include one jasper quarry site. Rock lined pits without ash or charcoal are not earth ovens and may have been used as seed storage facilities.

Gabrieleño, Serrano, Luiseño, and Cahuilla

The remaining Takic speakers in the Planning area shared similar environments and subsistence patterns. The area supported several plant communities which included plants with edible seeds, nuts, fruits, stalks, greens, bulbs, and tubers.

Coastal sage scrub is found below 3,000 feet on dry gravelly slopes. Important food plants included sage and California buckwheat seeds. Sagebrush, cactus, and some native grasses are also found in this community. California native grassland occurred in Moreno Valley, Perris Valley, San Jacinto Valley, Paloma Valley, French Valley, and Valley Center: grass seeds were available from March to July. Lily bulbs could be collected in April and May.

Chaparral grows on north-facing slopes in sandy shallow soils at medium elevations. On south-facing slopes it may be mixed with coastal sage scrub. At higher elevations it is mixed with southern mixed evergreen forest. The dominant chaparral plants are evergreen woody shrubs including chamise and scrub oak. Plant foods from the chaparral community include yucca stalks, manzanita seeds, sugar bush fruit, holly-leaf cherry berries, sunflower seeds, and toyon berries.

The riparian woodland community cuts through the chaparral along drainages and includes coast live oak, sycamore, cottonwood, box elder, willow, roses, grapes, sunflowers, lilies, and rushes. The most important food from this plant community was acorns from the coast live oak, available in October and November. Acorns had the added benefit of being storable, allowing large populations to remain in a permanent village through the winter subsisting on acorns when other foods were not available.

The southern mixed evergreen forest is found at elevations from 1,500 feet to 5,000 feet. It includes interior live oak, canyon live oak, big cone spruce, and big leaf maple trees. The southern oak woodland is found on mountain slopes and consists of black oak interior live oak, canyon live oak, and Engleman oak. The southern mixed coniferous forest is found at the highest elevations of the Agua Tibia–Palomar ridge and

includes coulter pine, white fir, incense cedar, big-cone spruce, ponderosa pine, sugar pine, and black oak.

The most important animals used as food were deer, rabbits, and small rodents including ground squirrel, woodrat, kangaroo rat, and mouse. Pronghorn antelope were probably available in native grasslands and low elevation woodlands. Deer moved to higher elevations in the fall where they fed on black oak acorns, oak leaves, twigs, and greens. Deer hunting most likely occurred in conjunction with the fall harvest of black oak acorns. Migratory waterfowl may have been seasonally available at Lake Elsinore and the marsh in San Jacinto Valley, but the only bird used as a major food source throughout the area appears to have been the quail. Rabbits were probably the major source of protein.

Gabrieleño. The Los Angeles Basin and the Santa Ana River drainage west of Cajon Wash were occupied by the Takic-speaking Gabrieleño or Tongva. The term “Gabrieleño” came from the group’s association with Mission San Gabriel Arcangel, established in 1771. The Gabrieleño are believed to have been one of the most populous and wealthy Native American tribes in southern California prior to European contact, second only to the Chumash (Bean and Smith 1978a; McCawley 1996; Moratto 1984).

The Gabrieleño occupied villages with populations ranging from 50 to 200 inhabitants. Residential structures within the villages were domed, circular, and made from thatched tule or other available wood. Gabrieleño society was organized by kinship groups, with each group composed of several related families who together owned hunting and gathering territories. Settlement patterns varied according to the availability of floral and faunal resources (Bean and Smith 1978a; McCawley 1996).

Vegetal staples consisted of acorns, chia, seeds, piñon nuts, sage, cacti, roots, and bulbs. Animals hunted included deer, antelope, coyote, rabbits, squirrels, rodents, birds, and snakes. The Gabrieleño also fished and collected shellfish along the coast (Bean and Smith 1978a; McCawley 1996).

Serrano. The Serrano occupied an area in and around the San Bernardino Mountains between approximately 1,500 and 11,000 feet above mean sea level. Their territory extended west along the north side of the San Gabriel Mountains to Soledad Pass (Earle, McKeehan, and Mason 1995), east as far as Twentynine Palms (Bean and Smith 1978b), and south through Redlands and Yucaipa to Lakeview (Cultural Systems Research 2005). The Serrano were mainly hunters and gatherers who also occasionally fished. Game animals included mountain sheep, deer, antelope, rabbits, small rodents, and various birds, particularly quail. Vegetable staples consisted of acorns, pinyon nuts, bulbs and tubers, shoots and roots, berries, mesquite, barrel cacti, and juniper seeds (Bean and Smith 1978b).

Settlement locations were determined by water availability, and most Serranos lived in small villages near water sources. The Serrano were loosely organized along patrilineal lines and associated themselves with either the *Tukum* (wildcat) or the *Wahilyam* (coyote) moiety.

Cahuilla. The Cahuilla occupied the Coachella Valley, Santa Rosa Mountains, San Jacinto Mountains and San Gorgonio Pass. The diversity of the territory (desert, canyons, foothills, and mountains) provided the Cahuilla with a variety of foods. It has been estimated that the Cahuilla exploited more than 500 native and non-native plants (Bean and Saubel 1972). Acorns, mesquite, screw beans, piñon nuts, and various types of cacti were used. A variety of seeds, wild fruits and berries, tubers, roots, and greens were also a part of the Cahuilla diet. Rabbits and small animals were also hunted to supplement the diet. During high stands of ancient Lake Cahuilla, fish, migratory birds, and marshland vegetation were also taken for sustenance and utilitarian purposes (Bean 1978).

Villages were typically situated near water sources, in the canyons near springs, or on alluvial fans at man-made walk-in wells such as those in the Coachella Valley.

There were two Cahuilla moieties, the wildcats and the coyotes. All members of a clan were the same moiety and moiety exogamy was required. Moiety membership was also patrilineal so that all male members of a clan were of the same moiety. Exogamous lineage and moiety rules promoted inter-group cooperation.

The most important ceremonies were boys' and girls' initiation ceremonies and mourning ceremonies for all who had died during the year. The corporate identity of the Cahuilla clan was reaffirmed through these ceremonies. Ceremonies were usually held during fall and winter when stored foods were available for exchange with other groups.

Luiseno. The Luiseno lived in sedentary and autonomous village groups, each with specific subsistence territories encompassing hunting, collecting, and fishing areas. Villages were typically located in valley bottoms, along streams, or along coastal strands near mountain ranges where water was available and village defense was possible. Inland populations had access to fishing and gathering sites on the coast, which they used during the winter months (Bean and Shipek 1978).

Luiseno subsistence was based on the gathering of acorns, seeds, greens, bulbs, roots, berries, and other vegetal foods. This was supplemented by hunting mammals such as deer, antelope, rabbit, woodrat, ground squirrels, and mice, as well as birds including quail, doves, and ducks. Bands along the coast also exploited marine resources, such as sea mammals, fish, crustaceans, and mollusks. Inland, trout and other fish were taken from mountain streams (Bean and Shipek 1978).

Hunting was done both individually and by organized groups. Small game was hunted with the use of curved throwing sticks, nets, slings, or traps. Bows and arrows were used for hunting larger game. Dugout canoes, basketry fish traps, and shell hooks were used for near-shore ocean fishing. Coiled and twined baskets were made for food gathering, preparation, storing, and serving. Other items used for food processing included large shallow trays for winnowing chaff from grain, ceramic and basketry storage containers, manos and metates for grinding seeds, and ceramic jars for cooking (Bean and Shipek 1978).

Villages had hereditary chiefs who controlled religious, economic, and territorial activities (Bean and Shipek 1978; Boscana 1933). An advisory council of ritual specialists and shamans was consulted for environmental and other knowledge. Large villages located along the coast or in inland valleys may have had more complex social and political structures than settlements controlling smaller territories (Bean and Shipek 1978; Strong 1929).

3.9.2.4 Yuman Language Area

San Diego County south of a line from Agua Hedionda Lagoon to Lake Henshaw was occupied by the Yuman-speaking Kumeyaay at the time of Spanish contact. Inland San Diego rises gradually from the coast to the interior mountains which run north-south in the eastern part of the county. The Cuyamaca Mountains, Laguna Mountains, and Volcan Mountains supported groves of black oak and pine forest. The mountains are drained by rivers and creeks that cut through hills and ridges currently covered by chaparral, but in the past supported grassland and oak woodlands.

Kumeyaay

The Kumeyaay are the Yuman-speaking native people of central and southern San Diego County and the northern Baja Peninsula in Mexico. Spanish missionaries and settlers used the collective term Diegueño for these people, which referred to people living near the presidio and mission of San Diego de Alcalá. Today, these people refer to themselves as Kumeyaay or as Tipai and Ipai, which are northern and southern subgroups of the Kumeyaay (Luomala 1978).

The Kumeyaay were geographically and linguistically divided into western and eastern Kumeyaay. The western and eastern Kumeyaay spoke two different dialects (Christenson 1990:64). The western Kumeyaay lived along the coast and in the valleys along the drainages west of the mountains. The eastern Kumeyaay lived in the canyons and desert east of the mountains. The western Kumeyaay spent the winter in villages in the lowland valleys and then broke into smaller cimul groups that moved gradually eastward toward the mountains, following ripening plants and occupying temporary residential sites along the way.

The Kumeyaay were loosely organized into exogamous patrilineal groups termed sibs, clans, gens, and tribelets by ethnographers. People lived in villages during the winter and subsisted on stored resources. No permanent houses were built. Brush shelters were built but were not re-used the next year. Ceremonies, including rites of passage and ceremonies to insure an abundance of food, were held in the winter villages.

The primary source of Kumeyaay subsistence was vegetal food. Seasonal travel followed the ripening of plants from the lowlands to higher elevations of the mountain slopes. Acorns, grass and sage seeds, chia seeds, cactus fruits, wild plums, pinyon nuts, and agave stalks were the principal plant foods. Women sometimes transplanted wild onion and tobacco plants to convenient locations, and sowed wild tobacco seeds. Deer, rabbits, small rodents, and birds provided meat.

3.9.2.5 Ethnohistoric Period

Poor living conditions at the missions and introduced European diseases led to a rapid decline of Native American populations. The loss of traditional lands began with the establishment of the missions and *asistencias*. After achieving independence from Spain in 1823, the Mexican government granted land to Mexican citizens and the military. The native population's land base further declined after the United States gained control of California and Anglo-American settlers began to populate the area. In the late 1800's the U.S. government began to establish reservations for the remaining tribal populations, placing the tribes on parcels of land much smaller than their traditional territories.

By the late 18th century, Gabrieleño population had significantly dwindled due to introduced diseases and dietary deficiencies. Gabrieleño communities near the missions disintegrated as individuals succumbed to Spanish control, fled the region, or died. Later, many of the Gabrieleño fell into indentured servitude to Anglo-Americans. By the early 1900s, few Gabrieleño people survived and much of their culture had been lost (Bean and Smith 1978a; McCawley 1996).

Contact between Serrano and Euro-Americans was minimal prior to the early 1800s. In 1819, the San Bernardino Rancho *Asistencia* was established near present-day Redlands and was used to help to convert and relocate many Serrano to Mission San Gabriel. However, small groups of Serrano remained in the area northeast of the San Gorgonio Pass and were able to preserve some of their native culture.

The Cahuilla were able to maintain their political, economic, and religious autonomy, largely due to their distance from the missions and early communities. Today, the Cahuilla reside on eight separate reservations in southern California, located from Banning in the north to Warner Springs in the south, and from San Jacinto in the west to Thermal in the east (Bean 1978).

After the San Luis Rey Mission was established in 1798 on the lower San Luis Rey River, most Luiseño were converted and taken to the mission. Poor living conditions at the missions and introduced European diseases led to a rapid decline of the Luiseño population. Following closure of the missions by the Mexican government, Luiseño dispersed throughout southern California. Although many of their cultural traditions had been suppressed during the Mission Period, the Luiseño were successful at retaining their language and certain rituals and ceremonies.

Beginning in 1775, the semi-nomadic life of the Kumeyaay began to change as a result of contact with European-Americans, particularly from the influence of the Spanish missions. Through successive Spanish, Mexican, and Anglo-American control, the Kumeyaay were forced to adopt a sedentary lifestyle and accept Christianity.

3.9.3 Historic Period

The first Spanish exploration of southern California began when Alarcón sailed up the Colorado River, probably to the confluence of the Gila or the Yuma area in August of

1540. Along the coast, exploration began in 1542 when Cabrillo sailed north and discovered San Diego Bay, which he called San Miguel. In 1769 the Portolá Expedition explored the California coast from San Diego to the Monterrey Bay Area.

Following Portolá's expedition the Spanish began to establish missions and presidios (forts), and towns in what they termed Alta California. The Franciscans established the Mission San Diego de Alcalá in 1769; Mission San Gabriel de archangel (1771); Mission San Juan de Capistrano (1776); and Mission San Luis Rey (1798). The Missions were established in order to convert native populations. These groups frequently became known by names associated with the missions: the Diegueño (Kumeyaay), Gabrieleño (Tongva), and Luiseño. Eventually 21 missions were established in Alta California.

Some missions later established *asistencias*, or mission outposts, in inland areas. An *asistencia* of the San Gabriel Mission, known as the San Bernardino Rancho Asistencia, was founded in 1819 near the boundary of Gabrieleño, Cahuilla and Serrano territories near present-day Redlands. An *asistencia* of the San Luis Rey Mission, known as San Antonio de Pala, was founded in Luiseño territory further up the San Luis Rey River near Mount Palomar in 1816.

Mexico won its independence from Spain in 1821 and the Mexican government closed the missions. Former mission lands were granted to soldiers and other Mexican citizens for use as cattle ranches or "ranchos". The rancho owners generally lived on their ranchos or in small towns such as San Diego, San Juan Capistrano, and Los Angeles.

The American period began with the Treaty of Guadalupe Hidalgo between Mexico and the United States in 1848. Alta California became part of the United States. The Gold Rush of 1849 led to a rapid population increase and California became a state in 1850.

Most Mexican land grants were confirmed to the grantees by U.S. courts, but usually with more restricted boundaries. Periods of drought and flood in the 1860's led rancho owners to decrease the size of their cattle. New taxes and high interest rates on borrowed money resulted in foreclosure for many Mexican-Americans and a loss of their lands to Anglo-Americans.

Southern California remained rural with most of the land used for cattle ranching until the 1880s. Completion of two transcontinental railroads, and the competition between them, made fares from the east coast inexpensive and brought thousands of new residents to southern California. The competition between the Atchison, Topeka, And Santa Fe and the Southern Pacific resulted in a rate war in 1887 that brought large numbers of immigrants to southern California. This, in turn, resulted in a real estate boom. Most of the towns in southern California were founded along the rail routes during this boom.

During the land boom, owners of the Mexican land grants subdivided their land and offered parcels for sale to people who wanted to become citrus ranchers or farmers. Public land outside the land grants was obtained from the federal government through cash purchases at \$1.25 per acre or through homesteading. The Homestead Act of 1862 allowed persons wanting to obtain title to public land to file a homestead claim at the local branch of the General Land Office. If the claimant built a house and lived on

the land for five years (reduced to three years after 1912), the federal government issued a patent or federal deed for the land to the homesteader. The Stock Raising Homestead Act (SHRA) of 1916 allowed a settler to claim 640 acres of land for stock raising.

Most cities in the planning area started as small rural towns supported by agriculture. In Los Angeles county large cattle ranches and small dry farms for wheat and barley were acquired through homesteading. Cattle and sheep were also raised in San Bernardino, western Riverside and San Diego Counties. Citrus groves and vineyards formed the agricultural base in San Bernardino and western Riverside, while San Diego County became known for its apiaries.

The prosperity of rural agricultural enterprises was directly correlated to the availability of water. Water was obtained from wells and from run-off impounded by reservoirs. Irrigation and water districts were formed to bring water to the citrus ranches and farms by constructing canals and irrigation ditches. Dams and aqueducts were constructed to feed the needs of communities as well as agriculture.

The other major use for public land was mining. The mining acts of 1866 and 1872 allowed exploration for mineral deposits on public lands and provided a means for miners to acquire ownership of mines on public lands.

Gold was first discovered in what later became California in 1842 in Placerita Canyon, east of where the town of Newhall would later be founded in Los Angeles County. The discovery caused a gold rush and over 2,000 miners, mostly from Sonora, Mexico, placer-mined Placerita Canyon from 1842 to 1848. In 1868 a small gold rush brought 300 miners to the Soledad Canyon area. The next gold discovery was in the Acton area in the southern foothills of the Sierra Pelona.

Gold mining districts and mines which occur on BLM public lands include the Pinacate Mining District (formed in 1878), The Red Rover Mine near Acton (1892), and the Mine Canyon area south of Engineer Springs (1908).

Other ores and minerals mined in the South Coast plan area include tin, tungsten, molybdenite, clay, granite, blue tourmaline, garnet, aquamarine, and beryl crystal. Oil was discovered in 1876 in Pico Canyon and large oil fields were developed in the Los Angeles portion of the plan area.

3.9.4 Existing Conditions

3.9.4.1 Documented Prehistoric sites

The majority of archaeological sites recorded within the planning area represent the prehistoric period. Most of these sites appear to date to the Late Prehistoric Period, although lithic quarries found in San Diego County have been associated with earlier Periods. Late Prehistoric sites are identified by the presence of ceramics, small projectile points, and bedrock mortars.

Most prehistoric sites in the planning area are small subsistence activity areas: places where food or other resources were collected or processed. These sites include lithic quarries and reduction loci, milling features, bedrock mortars, and hearths or agave roasting pits. Few rock art sites have been recorded on BLM-managed lands.

More complex occupation sites are indicated by the presence of an array of features and artifacts which may include midden soils, hearths, lithics, ceramics, milling features, bedrock mortars and rock shelters or other dwelling features. Few large occupation sites are known to occur on BLM land within the planning area.

3.9.4.2 Documented Historic Sites

The South Coast Planning area contains historic sites associated with settlement, agriculture, mining, and the development of water resources. In San Bernardino County the majority of recorded archaeological sites date to the historic period and are associated with water diversion: irrigation ditches, pumping stations, canals, and construction camp debris dating to the 1930's. Riverside and San Diego Counties contain sites associated with historic period mining. Other common historical sites include trash dumps, many dating from the late 1800's to early 1900's, roads and wagon routes, telegraph and telephone lines, ranching features such as stock tanks and windmills, and the remains of home sites.

3.9.4.3 Management Issues and Concerns

Cultural resources are concrete, material places and things and as such are subject to a variety of physical impacts. Impact analysis typically focuses on potential adverse impacts; however some management actions may have beneficial impacts on cultural resources and Native American values. An impact, or effect, is defined as any change in the characteristics that contribute to the use or uses determined for a cultural resource, or to the qualities that qualify a cultural property for listing on the National Register of Historic Places.

Beneficial impacts are those which serve to protect cultural resources from degradation or destruction. Chapter 2 (Section 2.3.9) describes management objectives and actions which have been designed to provide for protection and preservation of cultural resources while allowing for appropriate uses of the resources. Actions which prevent erosion or limit the degree of surface disturbance may also have beneficial impacts on cultural resources.

Adverse impacts are actions that result in the degradation or destruction of cultural resources. Adverse impacts result from actions which damage or destroy a resource or its components, alter the relationship between the resource and its surroundings, or disrupt the scientific, public or traditional values associated with the resource.

Surface-disturbing actions have the potential to adversely impact cultural resources through displacement and breakage of artifacts and disruption of features or spatial patterning within the site. Actions which disturb more than just the surface of a site may compromise the vertical integrity and stratigraphy of an archaeological site. Human

actions such as development, illegal collecting, and unregulated off-highway vehicle usage may impact cultural resources; natural forces such as erosion also have the potential to adversely impact the resources. Erosion acts on archaeological sites in much the same way as vehicle traffic: artifacts may be displaced, features damaged or destroyed, and subsurface components exposed. Erosion may also result in deposition and burial of archaeological sites.

The greatest challenge to managing cultural resources within the South Coast Planning area is the distribution of BLM parcels over a large geographic area. The parcels also tend to be small in size and surrounded by private lands making access difficult. Condition assessment and monitoring of archaeological sites occurs infrequently.

The factors threatening archaeological sites within the planning area include unregulated OHV use and natural factors such as erosion and fire. The proliferation of vehicle routes on BLM-managed lands increases the potential for vehicles to drive through sites. Vehicle traffic can cause breakage and displacement of artifacts, damage to features, and exposure of subsurface components. Access to otherwise remote areas increases the potential for illegal collection of artifacts or incidental impacts to cultural resources from camping and other recreational activities. Vehicle routes also disturb or destroy vegetation and may lead to erosion.

Livestock grazing could result in the degradation of cultural resources through trampling of surface artifacts and features. Range and wildlife improvement projects (e.g., livestock tanks and wildlife waters) could concentrate livestock and wildlife in areas, thereby increasing the potential for trampling.

Fire is a recurring event and prehistoric sites have likely been exposed to fire on numerous occasions. The threat potential of fire to prehistoric sites is related to the intensity of the fire. High intensity fires can affect the research potential of prehistoric sites (i.e.: obsidian hydration dating) and damage surface artifacts and features. However, fire is a greater threat to historic sites which may be constructed of flammable materials. Fire may also cause discoloration or rock spalling at rock art sites. Fire suppression activities, including the use of bulldozers to construct fire lines, may also affect archaeological sites. Cultural resources staff and fire / fuels staff are currently working together to develop sensitivity maps, identify properties to be protected, and develop procedures for minimizing the effects to cultural resources from fire suppression.

3.9.4.4 Traditional Native American Values

Kuchamaa (Tecate Peak) and Little Tecate Peak near the U. S.- Mexico border in San Diego County are of paramount importance to the Kumeyaay people because of the religious values that these mountains hold. These mountains have been of significant importance from prehistoric times to the present. Kumeyaay oral tradition speaks of Kuchamaa as a place for the acquisition of spiritual knowledge, power, and cleansing. The spiritual and religious importance of these mountains has endured.

In recent years Native American groups have also expressed a concern for access to plant materials for use in traditional activities such as basket weaving. It is the policy of California BLM to collaborate with native traditional practitioners and support traditional gathering of culturally utilized plants.

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3.10 Paleontological Resources

Paleontological resources are the fossilized evidence of past life found in the geologic record. Despite the tremendous volume of sedimentary rock deposits preserved worldwide and the enormous number of organisms that have lived through time, preservation of plant or animal remains as fossils is an extremely rare occurrence. Because of the infrequency of fossil preservation, vertebrate fossils are considered to be nonrenewable resources. Because of their rarity and because of the scientific information they can provide, fossils are highly significant records of ancient life. They can provide information about the interrelationships of living organisms, their ancestry, development, and change through time, and their former distribution. Fossils can also serve as important guides to the ages of the rocks and sediments in which they are contained and may prove useful in determining the temporal relationships of rock deposits from one area to another and the timing of geologic events. Time scales established by fossils provide chronologic frameworks for geologic studies of all kinds.

Fossils include all vertebrate remains (body and trace fossils) and plant and invertebrate fossils determined to be scientifically unique. Paleontological resources (fossils) include the bones, teeth, body remains, traces, or imprints of plants and animals preserved in the earth since a past geologic time. Most fossils occur in sedimentary rock formations.

BLM has classified the Planning Area using the probable fossil yield classification (PFYC). This planning tool classifies geologic formations according to the probability of yielding paleontological resources that could be of concern to land management. The following classification is based largely on how likely a geologic unit is to contain vertebrate and significant invertebrate fossils. While PFYC is based on probabilities and not certainties or known locations, there will be exceptions to each classification based on the criterion used as the basis. Where the presence or absence of vertebrate and significant invertebrate fossils is not known in a geologic unit conducive to the presence of fossils, existing protocols allow for inventory, assessments, and mitigation of potential paleontological resource impacts on a case-by-case basis.

All lands within the Planning Area are classified as follows, based on their potential to contain vertebrate fossils or noteworthy occurrences of invertebrate or plant fossils in geologic units (Ludington et al. 2007). These classifications are shown on existing map (Map 3-22).

- **Class 1 (low):** Igneous and metamorphic geologic units, or units that are not likely to contain recognizable fossil remains. Management concern is negligible for Class 1 resources, and mitigation requirements are rare.
- **Class 2 (moderate):** Sedimentary geologic units that are not likely to contain vertebrate fossils or significant non-vertebrate fossils. Management concern is low for Class 2 resources, and mitigation requirements are not likely.
- **Class 3 (moderate):** Fossiliferous sedimentary geologic units where fossil content varies in significance, abundance, and predictable occurrence; or units of unknown fossil potential. Management concern may extend across the entire range of man-

agement. Ground-disturbing activities require sufficient mitigation to determine whether significant resources occur in the area of the proposed action.

- **Class 4 (high):** Geologic units contain a high occurrence of significant fossils. Class 4 units are Class 5 units with lowered risk of human caused adverse impacts or lowered risk of natural degradation. Ground-disturbing activities require assessment to determine whether significant resources occur in the area of the proposed action. Mitigation may include full monitoring of significant localities.
- **Class 5 (high):** Highly fossiliferous geologic units that regularly produce vertebrate fossils or significant non-vertebrate fossils that are at risk of natural degradation or human-caused adverse impacts. Class 5 areas receive the highest level of management focus. Mitigation may be necessary before the proposed action. Mitigation of ground-disturbing actions is required and may be intense. Areas of special interest are designated and intensely managed.

Within the Planning Area there are rock units having high probability of paleontological resource occurrence; several rock units having moderate probability of paleontological occurrence; and most of the rock units having low probability of paleontological resource occurrence. The public land in the San Diego County Management Area is primarily underlain by Mesozoic granitic intrusive rocks. The Beauty Mountain Management Area primarily granitic and primarily consisting of pegmatite deposits. Areas underlain by these granitic rocks are unlikely to contain vertebrate or significant invertebrate fossils. Therefore, these two management areas are not discussed further in this section.

3.10.1 Los Angeles County Management Area

The potential for paleontological resources are little known on the lands managed by the BLM in Los Angeles and Orange Counties, including those on BLM split estate land. Geologic maps and a literature search by the Los Angeles County Museum of Natural History indicate that the overall potential for fossil-bearing stratigraphy is moderate. There are, however, some localities within this management area which may contain fossils from either the Miocene Mint Canyon Formation or the Miocene Ridge Route Formation.

3.10.2 Riverside–San Bernardino County Management Area

There are two regions in this management area which have the potential for possessing significant paleontological resources. The first region is located in an area known as the Badlands, just east of Moreno Valley in Riverside County. At this location are sedimentary deposits of Upper Miocene age, which reportedly hold vertebrate fossils such as the horse, camel, and rhinoceros (Brattstrom, personal communication). The second sensitive paleontological area is located one mile north of Soboba Hot Springs, also in Riverside County. The sedimentary deposit here, known as the Soboba formation, reportedly holds at least 80 different fossilized species of chaparral and woodland plant species. These fossils date from the lower Pliocene, circa 8 million years ago.

Both the above areas are of national importance. The sedimentary deposits of the Badlands hold type deposits of many environmentally sensitive small mammal fossils. The sedimentary deposits of the Soboba formation hold environmentally sensitive plant fossils. These deposits, therefore, are important in terms of reconstructing the paleo-environment.

3.11 Visual Resources

3.11.1 Visual Resource Management Overview

The Federal Land Policy and Management Act of 1976 (FLPMA) requires BLM to protect the quality of scenic values on public lands (43 U.S.C. 1701). To achieve that, BLM has developed and uses an analytical process that identifies, sets, and meets objectives for maintaining scenic values and visual quality — the Visual Resource Management (VRM) System. This standard protocol is used for the inventory and analysis of visual resource values. The VRM system functions in two ways: first, in the inventory of visual resources and second, in their management (BLM 1984a).

The results of the visual resource inventory, the Visual Resource Inventory Classes, provide the basis for considering visual values in the BLM's RMP process. It is the RMP development process that designates the Management Classes. These Management Classes describe the Visual Management objectives of a given area, ranging from preservation to major modification, as well as the different degrees of modification to the basic elements of the landscape (form, line, color, texture) that are allowed.

The BLM-established management objectives for each VRM class are shown in Table 3-5.

**Table 3-5
Visual Resource Management Objectives by Class**

Visual Resource Class	Visual Management Objective
Class I	To preserve the existing character of the landscape. The level of change to the characteristic landscape should be very low and must not attract attention.
Class II	To retain the existing character of the landscape. The level of change to the characteristic landscape should be low.
Class III	To partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate.
Class IV	To provide for management activities which require major modification of the existing character of the landscape. The level of change to the characteristic landscape can be high.

Source: BLM Handbook H-8410-1.

During the RMP process, the Inventory Class assignments and/or boundaries may be adjusted as necessary to reflect the resource allocation and management decisions made in the RMP. For example, by national policy, all Wilderness and Wilderness Study Areas (WSA) are managed as VRM Class I, even if the inventory process identifies

them as Class II. VRM Classifications may vary under different RMP alternatives, according to the underlying alternative resource management priorities and strategies.

3.11.2 Visual Resource Inventory Process

The inventory stage involves identifying the visual resources of a given land area and assigning them to inventory classes. The inventory process involves rating the visual appeal of a tract of land, measuring public concern for its scenic quality, and determining whether the tract of land is visible from travel routes or observation points. The process is described in detail in *BLM Handbook H-8410-1, Visual Resource Inventory* (BLM 1984b.)

Based on these three factors — scenic quality, sensitivity, and visibility / distance zones — BLM-administered lands are placed into one of four visual resource inventory classes (see Table 3-6). These inventory classes represent the relative value of the visual resources, Classes I and II being the most valued, Class III representing a moderate value, and Class IV being of least scenic value.

Table 3-6 Visual Resource Inventory Classification Matrix							
		Visual Sensitivity Levels					
		High			Medium		Low
Special Areas		I	I	I	I	I	I
Scenic Quality	A	II	II	II	II	II	II
	B	II	III	III*	III	IV	IV
				IV*			
	C	III	IV	IV	IV	IV	IV
		f/m	b	s/s	f/m	b	s/s
	Distance Zones						

Source: BLM Handbook H-8410-1

Key to Distance Zones: f/m = foreground / middleground; b = background; s/s = seldom seen

*If adjacent areas are Class III or lower, assign Class III; if higher, assign Class IV.

To complete the inventory process, the BLM identified Scenic Quality Rating Units (SQRU) within each of the four management areas of the South Coast Planning Area. Because of the geographic size of the planning area, the number of public land parcels, access, and the dispersed nature of the parcels, it was not feasible to include all the public lands in the SQRUs. The BLM decided to select representative SQRUs for each management area, and apply the ratings from the SQRUs to the entire management area. In all, ten SQRUs were identified for the planning area (see Appendix M for SQRU maps).

Using key observation points, the landscape of each SQRU was described in terms of texture, color, line, and form; in combination with the characteristic landform/water, vegetation, and structures. Sensitivity levels, which are a measure of the viewer's level of interest in the landscape and viewshed, were determined to be "High" for all SQRUs. This is based on the proximity of most public land parcels to homes and highways, and the value of these parcels as the remaining open space and scenic backdrops that are so prized by Southern California residents and visitors. The Distance Zone for the inventory was also determined to be "Foreground" for all SQRUs, again, due to the size and proximity of the parcels to homes and communities.

Combining and scoring all of the above, using the VRI Classification Matrix (Table 3-6), a Scenic Quality Classification of either A, B, or C was given to each SQRU. Combining the Scenic Quality Classification with the levels of sensitivity and distance zones results in a Visual Resource Inventory (VRI) Class (see Table 3-7). Rating forms used in the inventory are included in Appendix M.

The VRI Class is used in conjunction with resource allocations, management decisions, policies, and other factors to designate Visual Resource Management Classes. VRM Classes vary by alternative and are discussed in Chapters 2 and 4. Once VRM Classes are established through the RMP, they are used to analyze whether the potential visual impacts from proposed surface-disturbing activities or developments will meet the management objectives established for the area, or whether design adjustments will be required. The analysis can then be used as a guide for resolving visual impacts. Once every attempt is made to reduce visual impacts, BLM managers can decide whether to accept or deny project proposals. Managers also have the option of attaching additional mitigation stipulations to bring the proposal into compliance

3.11.3 Background: Issue Identification

BLM developed a Preparation Plan in May 2007 to identify anticipated issues, management concerns, planning criteria, and other planning process-related elements (BLM 2007). The following issues of particular relevance to visual resources were identified by the Preparation Plan:

Conflicts between Intensive Recreation Use and Habitat Conservation

Numerous habitat conservation plans (HCPs) have been developed to protect biodiversity and special status species while allowing continued economic growth.

Certain habitat preserve areas include BLM public lands for which the BLM has made commitments to adequately manage and protect. Forms of recreation such as off-highway vehicle (OHV) use may be incompatible with the conservation goals of the habitat preserves. OHV use and other surface-disturbing recreational activities also have the potential for creating visual impacts.

Habitat conservation planning efforts that include or directly affect South Coast Resource Management Plan (SCRMP) lands include:

- San Diego Multiple Species Conservation Program (MSCP). This plan has identified over 24,700 acres of BLM land as the Otay/Kuchamaa Cooperative Management Area and as a “core area” of the MSCP. BLM has agreed by Memorandums of Understanding (MOUs) to cooperate in the management of the MSCP to promote biological diversity. Towards this end, BLM has acquired over 6,000 acres of sensitive habitat for the MSCP.
- Stephens’ Kangaroo Rat Habitat Conservation Plan (SKR HCP). This plan has identified and established seven “core reserves” in Riverside County, three of which the BLM manages.
- Western Riverside County Multi Species Habitat Conservation Plan.
- Upper Santa Ana River Habitat Conservation Plan.

Visual Management Objectives that prescribe degrees of preservation and retention of the existing landscape character and allow low or very low levels of visual change and visual surface disturbance would be appropriate for these areas.

Conflicts between Intensive Minerals/Energy Production and Habitat Conservation, Visual Resource Management, and Rural Homeowners

Much of the BLM land that contains minerals and materials, or is available for utility right-of-way corridors, also has value for habitat conservation, open space, recreation, and scenic resources. Certain lands in the SCRMP planning area have been identified as HCP “core habitat areas” with the goal of maintaining the integrity of threatened, endangered, or otherwise sensitive species habitat. At the same time, public access to these areas for recreational purposes is important for continued public support of the conservation goals of the HCPs. Provisions for recreational access and activities need to be carefully managed in order to maintain habitat values, which typically correlate strongly with visual resource values.

3.11.4 Visual Resources of the South Coast Planning Area

This section provides an overview discussion of the visual resources within each of the SCRMP’s four Management Areas, and summarizes the VRM prescriptions of the 1994 RMP and the 1987 *Western Counties Wilderness Study Project Environmental Impact Statement* (EIS; BLM 1987). Current VRM designations (Alternative A – No Action) are shown on Map 2-1 through Map 2-3.

The proposed management classifications of these and other areas within the Planning Area vary by Alternative, and are described in Chapters 2 and 4. A Scenic Quality Field Inventory Form and a Visual Resource Classification matrix have been completed for each of these areas and are included in Appendix M. A summary of information from the inventory that has been completed as part of this RMP effort is shown in Table 3-7.

3.11.4.1 Los Angeles County Management Area

The Los Angeles County Management Area includes all but the northeastern desert portion of Los Angeles County, and contains approximately 5,500 acres of BLM public land. Much of the BLM public land has high-to-moderate potential for oil and gas. In Orange County, there is only one small parcel of BLM public land. The current land use decisions for this management area emphasize administrative adjustments through land disposal and transfer to other agencies.

The overall visual management directive of the 1994 SCRMP stipulates the following:

Management actions will conform to VRM Class III Objectives.

The current management directives per the 1994 SCRMP state the following for this specific Management Area:

A total of 3,711 acres of mostly small and isolated parcels are available for exchange. Of this total, five parcels with 686 acres near Castaic Lake are under Recreation and Public Purposes Act (R&PP) application by the State of California Department of Water Resources. Conveyance under the R&PP Act will be preferred over sale on these lands. Lands identified as suitable for disposal are closed to new grazing applications.

BLM parcels which have been identified for disposal and are within acquisition areas for sensitive species reserves or within open space park areas identified by a State or local government, such as the proposed Santa Clarita Woodlands Park in the Santa Susana Mountains and the Palos Verdes Peninsula, will be available and offered to that government entity prior to being offered to private parties.

A total of 1,216 acres, not available for disposal from federal ownership, are considered suitable for jurisdictional exchange with the U. S. Forest Service.

Until such time as vehicle route designation takes place, motorized vehicle use will be limited to existing routes of travel.

The visual inventory area, or SQRU, in this Management Area includes the Santa Clara River/ Soledad Canyon parcels and is shown on Map 4 in Appendix M. This representative SQRU contains 2,066 acres of public lands, which is 38% of the total public land acres for the Los Angeles County Management Area.

3.11.4.2 Riverside–San Bernardino County Management Area

The Riverside–San Bernardino County Management Area includes the western portions of these two counties. There are approximately 30,000 acres of BLM public land, most

of which comprises scattered parcels in Riverside County. A number of these parcels contain habitat for several sensitive species, most notably Stephens' kangaroo rat (*Dipodomys stephensi*). The largest parcel of BLM public land is near Soboba; it provides recreational use opportunities and is currently managed as a SRMA. The 1,000 acres in San Bernardino County are along the Santa Ana River Wash and contain populations of two federally endangered plant species, the slender-horned spineflower and the Santa Ana River woolly-star (*Eriastrum densifolium sanctorum*). The Santa Ana River Wash area also contains valuable sand and gravel resources, and some of the lands have potential for other mineral resources, including a few areas with low or moderate potential for oil and gas.

The overall visual management directive of the 1994 SCRMP stipulates the following:

Management actions will conform to VRM Class II Objectives within the Potrero and Santa Margarita Reserve ACECs. VRM Class III Objectives will apply in other areas, except that VRM Class I will apply under interim management of the eligible segments of the Santa Margarita River.

The current management directives per the 1994 SCRMP state the following for this specific Management Area:

Designate 2,966 acres as the Potrero Area of Critical Environmental Concern (ACEC) and Research Natural Area (RNA) for preservation of Stephens' kangaroo rat habitat. The ACEC is unavailable for mineral material sales. The ACEC is proposed for closure to mineral leasing and entry under the 1872 mining law (as amended). Grazing could be permitted only if it is found to be compatible with habitat management, as determined in the activity plan. The ACEC is a right-of-way avoidance area.

Designate three parcels totaling 750 acres in the upper Santa Ana River wash as the Santa Ana River ACEC and RNA for protection of Santa Ana River woolly-star and slender-horned spineflower. The ACEC is unavailable for mineral material sales, is closed to motorized vehicle use, and is unavailable for livestock grazing. The ACEC is a right-of-way avoidance area.

Designate 1,247 acres within the Santa Margarita Ecological Reserve (including 40 acres within San Diego County) as an ACEC and RNA for protection for sensitive species and natural values. The ACEC is unavailable for mineral material sales and livestock grazing. The ACEC is proposed for closure to mineral leasing and entry under the 1872 mining law (as amended). The ACEC is a right-of-way avoidance area and 360 acres of the ACEC are closed to motorized vehicle use.

Manage the segments of the Santa Margarita River which are eligible for inclusion in the National Wild and Scenic Rivers System (NWSRS) in accordance with the interim guidance for protection of wild and scenic values, and pursue determination of suitability for inclusion in the NWSRS.

Manage the Badlands area, located east of the city of Riverside, for multi-species values (including the Stephens' kangaroo rat and the California Gnatcatcher) and open space. The area is unavailable for livestock grazing, pending completion of

an activity plan. Grazing could be permitted if determined to be compatible with habitat management by the activity plan.

Manage parcels at Oak Mountain for sensitive plant and wildlife species values. The three parcels in the Oak Mountain vicinity (894 acres) are closed to motorized vehicle use and are unavailable for livestock grazing.

Manage land near Valle Vista and the San Jacinto River for the protection of slender-horned spineflower populations. Some 545 acres is closed to motorized vehicle use and is unavailable for livestock grazing.

Manage BLM public lands within the Soboba area as a special recreation management area (SRMA). The SRMA provides opportunities for equestrian use, hiking, backpacking, camping, picnicking, nature study, hunting and motorized vehicle use. Except for the recreational facilities to be provided, the SRMA shall be maintained as an unmodified natural environment.

Visual inventory areas (SQRUs) of the Riverside–San Bernardino County Management Area are shown on Maps 2 and 3 in Appendix M, and described as follows:

- Santa Margarita Ecological Reserve/Temecula Canyon SQRU (1,247 acres or 4% of the management area)
- Potrero /Soboba SQRU (11,077 acres or 37% of the management area)
- Santa Ana River Wash SQRU (750 acres or 3% of the management area)

3.11.4.3 Beauty Mountain Management Area

The Beauty Mountain Management Area includes some 34,000 acres of BLM public land in both Riverside and San Diego Counties. It is located north of State Highway 79, south of the Cahuilla Indian reservation, and west of Anza-Borrego Desert State Park. Most of the BLM public lands are in a few large parcels and form a nearly consolidated block of BLM-administered public land that includes the newly designated Beauty Mountain Wilderness, the Beauty Mountain WSA, Million Dollar Spring ACEC, Johnson Canyon ACEC, Iron Spring Mountain, and various canyons and springs. The lands have value for watershed and wildlife habitat, and also have potential to provide for recreational use.

The overall visual management directive of the 1994 SCRMP stipulates the following:

Management actions will conform to VRM Class II Objectives within ACECs and Class III Objectives in other areas.

The 1994 SCRMP did not assign VRM classes to WSAs; however, the 1987 Western Counties Wilderness Study Project EIS had previously assigned VRM Class II to the Beauty Mountain WSA. Therefore the VRM Class II assignment for this WSA carries over from the 1987 EIS and reflects its current VRM classification.

The current management directives per the 1994 SCRMP state the following for this specific Management Area:

Manage the BLM public lands within the management area as a wildlife habitat management area (HMA). To enhance wildlife habitat, conduct vegetation manipulation (prescribed burning) as needed to maintain diversity of vegetation age classes, with 20% of vegetation as early seral communities, as a means of enhancing wildlife habitat and increasing forage.

*Manage BLM public lands within the management area as a special recreation management area (SRMA). The SRMA provides opportunities for equestrian use, hiking, backpacking, camping, picnicking, nature study, hunting and motorized vehicle use. **Except for the recreational facilities to be provided, the area will be maintained as an unmodified natural environment.***

Designate 6,265 acres in the central portion of the management area as the Million Dollar Spring Area of Critical Environmental Concern (ACEC) and Outstanding Natural Area (ONA) for the protection of watershed and sensitive natural values. The ACEC is a right-of-way avoidance area and is not available for material sales. Approval of any and all future activities within the ACEC will require implementation of Best Management Practices (BMPs) and monitoring in accordance with the BLM California 208 Water Quality Management Plan in order to maintain water quality and watershed conditions.

Designate 1,800 acres currently leased to San Diego State University, Systems Ecology Research Group, as the Johnson Canyon ACEC and Research Natural Area (RNA) for the protection of unique vegetation resources. The ACEC is not available for mineral material sales or livestock grazing. The ACEC is a right-of-way avoidance area.

The Beauty Mountain visual inventory area is shown on Map 2 in Appendix M. The Beauty Mountain SQRU includes the entire management area of approximately 34,000 acres.

3.11.4.4 San Diego County Management Area

The San Diego County Management Area includes approximately 64,000 acres of BLM public land, most of which is in the mountainous terrain between Interstate Highway 8 and the U.S.- Mexico border. Lands within this management area contain several sensitive plant and animal species and habitats, and also provide opportunities for recreational use. As mentioned above, the San Diego MSCP has identified over 24,700 acres of BLM land in the San Diego County Management Area as a “core area” of the MSCP of the Otay/Kuchamaa Cooperative Management Area. In their cooperating role, BLM has acquired over 4,000 acres of sensitive habitat for the MSCP.

The overall visual management directive of the 1994 SCRMP stipulates the following:

Management actions will conform to VRM Class II Objectives within ACECs and Class III Objectives in other areas.

The 1994 SCRMP did not assign VRM classes to WSAs; however, the 1987 *Western Counties Wilderness Study Project EIS* had previously assigned VRM Class II to the Western Otay Mountain, Southern Otay Mountain, and Hauser Mountain WSAs. Therefore the VRM Class II assignments for these WSAs carry over from the 1987 EIS and reflect their current VRM classification. The portion of the Otay Mountain Wilderness that was not a WSA (east of Minnewawa and north of Otay Mountain Truck Trails) retains its VRM Class III assignment.

The current management directives per the 1994 SCRMP state the following for this specific Management Area:

*Administer lands within the "Border Mountains" area as a special recreation management area (SRMA). The area is characterized by a corridor of land from the Otay Mountain vicinity on the west to the Campo vicinity on the east. The SRMA provides opportunities for hiking, backpacking, equestrian use, camping, picnicking, nature study, hunting and motorized vehicle use, including OHVs on existing routes. **Except for the recreational facilities to be provided, the SRMA shall be maintained as an unmodified natural environment.***

Designate Cedar Canyon as an Area of Critical Environmental Concern (ACEC) and Research Natural Area (RNA) for preservation of populations of Mexican flannel bush. The ACEC is a right-of-way avoidance area, is not available for mineral material sales or livestock grazing, and is closed to motorized vehicle use.

Designate 803 acres of Tecate Peak and Little Tecate Peak as the Kuchamaa ACEC and Outstanding Natural Area (ONA) for the protection of Native American religious heritage. The ACEC is a right-of-way avoidance area, is not available for mineral material sales or livestock grazing, and motorized vehicle use within the ACEC is limited to the existing route. Explore the feasibility of relocating or removing the existing communication site facilities on Tecate Peak.

Manage the contiguous BLM public lands in the Hauser Mountain and McAlmond Canyon vicinities, including portions of the Potrero and Hauser Mountain grazing allotments, as a wildlife habitat management area (HMA).

Visual Inventory areas (SQRU) of the San Diego County Management Area are shown on Map 1 in Appendix M, and described as follows:

- Otay Mountain Wilderness/San Ysidro Mountains SQRU (23,334 acres or 36% of the management area)
- Tecate and Little Tecate Peaks SQRU (1,012 acres or 2% of the management area)
- Potrero/McAlmond Canyon SQRU (9,558 acres or 15% of the management area)
- Hauser Mountain SQRU (9,464 acres or 15% of the management area)
- Smith Canyon/La Posta/Campo SQRU (8,628 acres or 13% of the management area)

3.11.3.5 Visual Resource Inventory

**Table 3-7
Visual Resource Inventory Summary**

Management Area	Inventory Area	Scenic Quality Rating Unit	Scenic Quality A, B, C	Sensitivity H M L	Distance Zones F M B	Inventory* Class
San Diego County	Otay Mountain Wilderness / San Ysidro Mountains	SDB-1 23,334 acres	A	H	F	II
San Diego County	Tecate and Little Tecate Peaks (Kuchamaa ACEC)	SDB-2 1,012 acres	A	H	F	II
San Diego County	Potrero Peak / McAlmond Canyon	SDB-3 9,558 acres	A	H	F	II
San Diego County	Hauser Mountain	SDB-4 9,464 acres	B	H	F	II
San Diego County	Smith Canyon / La Posta / Campo	SDB-5 8,628 acres	B	H	F	II
Beauty Mountain	Beauty Mountain	BTMT 34,000 acres	A	H	F	II
Riverside–San Bernardino County	Santa Margarita Ecological Reserve / Temecula Canyon	RSB-1 1,247 acres	A	H	F	II
Riverside–San Bernardino County	Potrero / Soboba	RSB-2 11,077 acres	B	H	F	II
Riverside–San Bernardino County	Santa Ana Wash	RSB-3 750 acres	C	H	F	III
Los Angeles County	Santa Clara River / Soledad Canyon	SCS 2,066 acres	B	H	F	II

*Note: Management Class designations may vary from Inventory Class. Wilderness Areas and Wilderness Study Areas are managed by Class I objectives, by national BLM policy (BLM 2000), regardless of scenic value or Inventory Class, because the objective is to manage these areas to maintain their natural appearing landscape.

3.11.5 References

- U.S. Department of the Interior, Bureau of Land Management
- 1984a Manual 8400. Visual Resource Management.
 - 1984b Manual H-8410-1. Visual Resource Inventory.
 - 1987 Final EIS Preliminary Wilderness Recommendations for the Western Counties Wilderness Study Project, Southern California Metropolitan Project Area, Indio Resource Area. California Desert District, California.
 - 2000 Instruction Memorandum No. 2000-096. Use of Visual Resource Management Class I Designation in Wilderness Study Areas. March 21.
 - 2007 Preparation Plan for the Proposed South Coast Resource Management Plan Revision. California Desert District, Palm Springs–South Coast Field Office. May.

3.12 Special Designations and Lands with Wilderness Characteristics

Special designations in the South Coast Planning Area fall into two categories, designations that derive from Congressional legislation or executive orders, and designations that result through BLM, state or local government, and multi-agency planning. Designations that have occurred from Congressional legislation or executive orders are additions to the National Wilderness Preservation System and National Trails System, Wilderness Study Areas, Wild and Scenic Rivers, and National Monuments. Designations that occur through BLM, state, local, or regional planning includes Habitat Conservation Programs and Plans and Areas of Critical Environmental Concern.

3.12.1 Habitat Conservation Programs

3.12.1.1 Natural Communities Conservation Program

Southern California is among the richest areas of biodiversity in the United States. This biodiversity, coupled with declining habitat in one of the nation's largest and fastest growing urban areas, has resulted in more federal and state listings of threatened or endangered species than any other region of the country. The State of California addressed this issue through the passage of the Natural Communities Conservation Program (NCCP), a cooperative effort to protect habitats and species. The program, which began in 1991 under the State's Natural Community Conservation Planning Act, is broader in its orientation and objectives than the California and Federal Endangered Species Acts. The primary objective of the NCCP program is to conserve natural communities at the ecosystem scale while accommodating compatible land use. The program seeks to anticipate and prevent the controversies and gridlock caused by species' listings by focusing on the long-term stability of wildlife and plant communities and including key interests in the process.

The focus of the initial effort was the coastal sage scrub habitat of Southern California, home to the California gnatcatcher and approximately 100 other potentially threatened or endangered species. This much-fragmented habitat is scattered over more than 6,000 square miles and encompasses large parts of three counties — Orange, San Diego, and Riverside — and smaller portions of two others — Los Angeles and San Bernardino. Fifty-nine (59) local government jurisdictions, scores of landowners from across these counties, federal wildlife authorities, and the environmental community are actively participating in the program. The California Department of Fish and Game and the U.S. Fish and Wildlife Service provide the necessary support, direction, and guidance to NCCP participants.

Also in 1991, the California Biodiversity Council was formed, consisting of more than two dozen federal and state natural resources agencies (including the BLM), the University of California, county boards of supervisors, and resource conservation districts. This is an unprecedented agreement to cooperate, communicate, and foster regional efforts to promote biodiversity conservation across administrative boundaries.

To further these goals, the BLM in 1994 signed a Memorandum of Understanding with the City and County of San Diego, the San Diego Association of Governments, the California Department of Fish and Game, and the U.S. Fish and Wildlife Service, for Cooperation in Habitat Conservation and Planning in San Diego County. Under the policies of the MOU, the BLM agreed to a coordinated approach to incorporate BLM-managed lands within regional habitat conservation programs. To meet habitat conservation goals, BLM agreed to consider modifying its land use plans if these were found to be inconsistent with existing or proposed conservation objectives. In addition, BLM agreed to participate in acquiring lands to add to the proposed habitat preserve systems and to manage these lands to conform to the habitat conservation plans of the other signatory parties. A copy of the MOU is included in (Appendix-O).

3.12.1.2 Habitat Conservation Plans

To allow for continued urban growth, and meet the objectives of the NCCP, several counties and cities have developed large-scale multiple species habitat conservation plans (HCPs) that meet the Section 10 requirements of the Endangered Species Act (ESA) for “incidental take” permits. This process designates habitat preserves to promote recovery of listed species and avoid listing of new species. The local jurisdictions then receive conditional permits from the USFWS for new development.

Public lands managed by BLM and other Federal and state agencies are important as “core habitat areas” of the HCPs. Public lands in the South Coast planning area are identified as critical to the maintenance and success of the HCPs. The BLM has been a cooperator and partner in the development and management of several regional land use and habitat conservation plans (HCP) in Southern California. The existing South Coast RMP anticipated the development of several HCPs and the land use designations in the RMP reflected the conservation goals that were known at the time. Since 1994 these HCPs have been passed by the local jurisdictions and approved by the USFWS and the CDFG and are being implemented. Public lands in the South Coast planning area are identified as critical to the maintenance and success of the HCPs. A map of the HCPs in the planning area is included in Map 3-18 and 3-19.

The HCPs which include BLM-managed public lands are as follows:

San Diego Multiple Species Conservation Program. The Multiple Species Conservation Program (MSCP), covering over 80 species and intended to preserve over 170,000 acres of habitat, was signed in 1997. The MSCP identified over 24,700 acres of public land as the Otay/Kuchamaa Cooperative Management Area and as “core habitat” of the MSCP. Since 1994, the BLM has acquired over 4,000 acres of sensitive habitat in support of the MSCP. San Diego County has also developed two more versions of the MSCP which will cover the entire county. Management of these new Federal lands and MSCP designations are not addressed by the 1994 SCRMP.

Stephens’ Kangaroo Rat Habitat Conservation Plan. In May of 1996, the USFWS, BLM, CDFG, and the Riverside County Habitat Conservation Agency (RCHCA) signed an implementing agreement for the *Stephens’ Kangaroo Rat Habitat Conservation Plan* (SKR HCP) which provides for authorization under both the Federal and California

Endangered Species Acts to permit development of SKR habitat outside the core reserves, and to establish seven SKR core reserves throughout western Riverside County. BLM is responsible for managing three of these reserves in partnership with local jurisdictions, USFWS, and CDFG.

The core reserves in western Riverside County will require special management attention to effectively deal with intense urban-interface issues and to maintain the integrity of threatened and endangered species habitat within the reserves. The public has requested access to these reserves for recreational purposes. Public access is critical to ensuring continued community support for these reserves. At the same time, recreational activity will need to be managed to maintain threatened and endangered species habitat.

Western Riverside County Multi-Species Habitat Conservation Plan. Riverside County, as the lead agency, adopted a multiple-species habitat conservation plan for western Riverside County in collaboration with the local jurisdictions, State and Federal agencies, and public/private interest groups in 2004. The BLM is a partner and a key land manager, providing a portion of the proposed preserve system land base. Upon completion, this plan will incorporate the SKR reserves previously established. BLM will likely be responsible for managing additional core reserves in western Riverside County, and some adjustment in existing management responsibilities may occur in order to improve the effectiveness of BLM and other HCP managing agencies.

Upper Santa Ana River Habitat Conservation Plan. Since 1997, the BLM has participated with the San Bernardino Valley Water Conservation District (SBVWCD), local jurisdictions, mining companies, and the State and Federal wildlife agencies to develop a land use plan that addresses mining, water conservation, and sensitive species habitat conservation in the Santa Ana River Wash between the Cities of Redlands and Highland. Within this same area, BLM manages 750 acres of public lands as the Upper Santa Ana River Wash Area of Critical Environmental Concern (ACEC). The SBVWCD has proposed a land exchange with the BLM, within the ACEC, to facilitate this plan. Lands in the ACEC are not available for exchange under the current RMP.

3.12.2 Wilderness

Congress established the National Wilderness Preservation System (NWPS) on federal lands when it passed the 1964 Wilderness Act. Wilderness is generally managed to preserve the area in its natural state, to keep it undeveloped and untrammled by human actions, and to provide opportunities for solitude and primitive forms of recreation. The Act reserved to Congress the right to make future wilderness designations. The Planning Area contains three designated wilderness areas administered by the BLM. Travel in wilderness is limited to foot or equestrian conveyance. Motorized vehicles, bicycles, or any other form of mechanized equipment are prohibited in these areas to protect the solitude, primitive nature, and biological values of these special places.

3.12.2.1 Otay Mountain Wilderness

This 16,895-acre area was designated wilderness in 1999 by passage of the Otay Mountain Wilderness Act, Public Law No. 106-145. Otay Mountain is located in south-western San Diego County, California, 15 miles east of San Diego (Map 3-23). It is south of Highway 94 and adjacent to the international boundary with Mexico. The lands within the Otay Mountain Wilderness constitute the northern portion of the San Ysidro Mountains, one of the peninsular ranges whose southern half lies in Mexico. The area is deeply incised by numerous ephemeral streams. These streams have cut steep narrow canyons into the hillsides, and are the dominant topographic features of the area. Vegetative communities consist of Diegan coastal sage at lower elevations, with mixed chaparral and cypress forest higher up.

Recreational use is currently light, no more than 1,000 visitor use days. Activities are mainly hiking, hunting, vehicular sightseeing, and informal nature study. Otay Mountain has a long history of wildfires and wildfire suppression. The area experiences hot, dry summers, is covered in a thick blanket of burnable vegetation, and experiences fierce Santa Ana winds. Aggressive suppression of all wildfires is necessary to protect urban interface areas and critical communication sites outside the wilderness, natural values at risk, and human life and property. Campfires started by immigrants are also the primary cause of wildfires, and fatalities from fire have occurred on Otay Mountain.

3.12.2.2 Beauty Mountain Wilderness

The Beauty Mountain Wilderness was established on March 30, 2009 under the Omnibus Public Land Management Act of 2009, Public Law 111-11. The wilderness contains 15,628 acres of public land in Riverside County, just north of the San Diego County line (Map 3-23). The wilderness is comprised of a series of steep, rugged mountainsides dominated by Beauty Mountain and Iron Springs Mountain. These mountains rise above the more gentle relief of the plateau that forms the western half of the wilderness. Deep canyons have formed from drainage off the erosion-resistant ridges. Ecosystems are similar to those on Otay Mountain, the exception being the presence of Oak Riparian types in many of the drainages. In general, there is more water at springs and in drainages on Beauty Mountain than at Otay. Within the wilderness is a portion of the Million Dollar Spring ACEC, which was designated in the South Coast RMP in 1994. Recreation use is light and includes hiking, hunting, horseback riding, photography, and nature study. Grazing is authorized in the Beauty Mountain Allotment.

3.12.2.3 Agua Tibia Wilderness

The Omnibus Public Land Management Act of 2009 expanded the Agua Tibia Wilderness in the Cleveland National Forest with an addition of 538 acres of BLM-managed public lands. The BLM Agua Tibia Wilderness Study Area, along with four additional parcels of BLM lands, was added to the existing Agua Tibia Wilderness. Forest Service lands were also added to expand the wilderness. The entire Agua Tibia Wilderness will remain part of the Cleveland National Forest and will be managed jointly by the Forest Service and the BLM.

The BLM portion of the wilderness is located in Riverside County, east of the city of Temecula and west of the community of Aguanga. The wilderness covers the northern portion of the Palomar Mountain Range and includes deep canyons, seasonal streams, chaparral, and oak, pine, and fir forests. The Forest Service portion of the wilderness contains 25 miles of hiking trails.

3.12.3 Wilderness Study Areas

BLM manages Wilderness Study Areas (WSAs) within the Planning Area consistent with the Federal Land Policy and Management Act of 1976 and the BLM Interim Management Policy (IMP) and Guidelines for Lands Under Wilderness Review (Revised 1995). The Planning Area contains two WSAs, Hauser Mountain WSA and Beauty Mountain WSA with a total of approximately 8,905 acres. The WSAs were administratively identified under the authority of sec 603[a] or 201/202 of FLPMA in the December 1979 "Final Intensive Inventory — Public Land administered by BLM CA Outside of the CDCA." FLPMA mandates that WSAs should be managed so that there is no unnecessary or undue degradation and no impairment of their suitability for preservation as wilderness (Map 3-23).

Several WSAs that were part of the South Coast Planning Area when the South Coast RMP was completed in 1994 have since been designated as wilderness through legislation. These were the Western Otay Mountain and Southern Otay Mountain WSAs (Otay Mountain Wilderness Act, 1999), the Agua Tibia WSA, and a portion of the Beauty Mountain WSA (Omnibus Public Land Management Act of 2009).

3.12.3.1 Hauser Mountain WSA

The Hauser Mountain WSA contains 5,489 acres and is located approximately 45 miles southeast of the city of San Diego. At its nearest point, the southern border of the WSA lies less than 1 mile from the United States-Mexico International Border.

The unit is basically a single, broad, undulating ridge oriented north-south in an area of alternating low ridges and valleys. The area ranges in elevation from 2,400 feet in the southeast to 3,800 feet at the USGS Campo VABM horizontal control station. The mountain is blanketed with dense chaparral and southern oak woodland. Numerous rocky outcrops occur throughout the unit, but nowhere in the unit is there exceptional relief.

3.12.3.2 Beauty Mountain WSA

The 3,416-acre Beauty Mountain WSA is located in San Diego County approximately thirty miles east of the town of Temecula. The WSA is comprised of a series of steep, rugged mountainsides dominated by Beauty Mountain and Iron Springs Mountain. These mountains rise above the more gentle relief of the plateau that forms the western half of the WSA. Deep canyons have formed from drainage off the erosion-resistant ridges. Ecosystems are similar to those on Otay Mountain, the exception being the presence of Oak Riparian types in many of the drainages. In general, there is more water at springs and in drainages on Beauty Mountain than at Otay.

The original WSA included an additional 7,926 acres in Riverside County. The public lands of the Riverside County portion of the WSA were included in the Beauty Mountain Wilderness, designated as part of the Omnibus Public Land Management Act of 2009. The wilderness included lands not in the WSA, but a small portion of the WSA in Riverside County did not become part of the wilderness. Approximately 437 acres of the WSA were not released by Congress for multiple use management, and remain in WSA status. These lands are subject to BLM Interim Management Policy and Guidelines for Lands Under Wilderness Review until Congress releases them through future legislative action.

3.12.4 Lands with Wilderness Characteristics

Through the SCRMP revision, BLM will update its inventory of wilderness characteristics, particularly for lands outside of designated wilderness and WSAs (including acquired lands) that have wilderness characteristics, consistent with Section 201 of FLPMA. To be identified as lands with wilderness characteristics, they must possess sufficient size, naturalness, and outstanding opportunities for either solitude or primitive and unconfined recreation as defined in Section 2(c) of the Wilderness Act. When BLM identifies lands with wilderness characteristics through the inventory process required by Section 201 of FLPMA, BLM will consider whether to protect such characteristics. See also BLM Land Use Planning Handbook H-1601-1, Appendix C, subparagraph K, Wilderness Characteristics.

Since 1994 BLM has acquired over 11,000 acres within the South Coast planning area. The largest of these parcels are over 1,000 acres. Several parcels have been acquired within and adjacent to the Otay Mountain Wilderness, Beauty Mountain Wilderness, and Hauser Mountain WSA. The BLM completed an intensive wilderness inventory and study as required by Section 603 of FLPMA in 1987 and described in Appendix N under Previous Wilderness Inventories. No additional inventories have been conducted since completion of the current South Coast Resource Management Plan in 1994. This inventory and evaluation focuses on lands that have never been assessed for wilderness characteristics; acquired outside of, or adjacent to, designated wilderness; and within or adjacent to WSAs. This plan revision will evaluate lands with wilderness characteristics and determine which lands could be managed to protect those characteristics under the alternatives. See Chapter 2 and Appendix N.

3.12.5 Wild and Scenic Rivers

The BLM is mandated to evaluate potential additions to the National Wild and Scenic Rivers System (NWSRS) by Section 5(d) of the Wild and Scenic Rivers Act (WSRA) during the Resource Management Plan (RMP) process.

The Palm Springs–South Coast Field Office conducted an inventory for waterways and completed two of the three steps of study under the NWSRS guidelines. The South Coast Resource Management Plan EIS / Record of Decision found those segments of the Santa Margarita River administered by the BLM to be eligible for inclusion into the

NWSRS. The potential classification of “wild river” was given to the river. The suitability study for the Santa Margarita River will be addressed in the South Coast Resource Management Plan Revision.

Newly acquired lands within the San Diego County and Beauty Mountain Management Areas support waterways that may be eligible for inclusion in the NWSRS. The BLM conducted a review of waterways to evaluate their potential as a wild or scenic river. No waterways were identified that were part of the National Park Service’s Phase II evaluation for inclusion onto the National Rivers Inventory. Review of available data failed to reveal outstandingly remarkable values on a regional scale within the newly acquired lands. (Refer to Appendix G: Wild and Scenic River Eligibility and Suitability Study and Map G-1).

3.12.6 National Scenic and Historic Trails

3.12.6.1 Pacific Crest National Scenic Trail

The Pacific Crest National Scenic Trail (PCT) is a congressionally designated trail for hiking and equestrian use. The trail was designated through the National Trails Systems Act (Public Law 9043; October 2, 1968) and is managed in accordance with a comprehensive plan developed by the USFS (USDA 1982) and a subsequent MOU with the BLM. The BLM manages the southern terminus of the PCT on the U.S.- Mexico border in Campo, and 15 miles of the PCT from the border north to the Cleveland National Forest. In 1986 the BLM issued a ROW (CA18772) to the Cleveland National Forest to construct, use, control, maintain, improve, and repair the portion of the trail crossing BLM lands in San Diego County. Another 1.5 miles of the trail crosses two parcels of BLM lands within the Los Angeles County Management Area. This segment is maintained by the Angeles National Forest under a cooperative agreement with BLM. Motorized vehicles and mountain bikes are not allowed on the PCT (Refer to Map 3-23).

3.12.6.2 Juan Bautista de Anza National Historic Trail

The Juan Bautista de Anza National Historic Trail was established by Congress in 1990. This National Historic Trail covers over 1,200 miles, from Nogales Arizona to San Francisco California. The historic route extends through the South Coast Planning Area, but no segments of the trail cross BLM-administered public lands. The trail does pass between BLM parcels in the vicinity of Valle Vista in Riverside County, and these parcels may be important as the scenic background to the trail. The NHT is administered by the National Park Service. The NPS completed the Anza Trail Comprehensive Management Plan in 1996, which provide guidance for other agencies with management responsibilities for the NHT.

3.12.6.3 Old Spanish National Historic Trail

The Old Spanish Trail was added to the National Trails System by act of Congress in 2002. The trail runs from northern New Mexico through Colorado, Utah, Nevada, and Arizona, to reach its terminus in Los Angeles, California, and includes some 2,700 miles

along several historic routes. The historic route extends through the South Coast Planning Area, but no segments of the trail cross or are adjacent to BLM-administered public lands. The NHT is administered jointly by the National Park Service (NPS) and the BLM. A Comprehensive Management Plan is being developed by the NPS and BLM which will provide guidance for agencies with management responsibilities for the NHT. Because there are no segments of the NHT on or adjacent to BLM-administered lands in the South Coast Planning Area, and no BLM decisions would be made for this segment of the trail, the trail is not discussed in this document.

3.12.7 National Monuments

3.12.7.1 California Coastal National Monument

The California Coastal National Monument was created by Presidential Proclamation in 2000. The National Monument includes all federal rocks and islands off the California coast and offshore islands, not already withdrawn or reserved. The southern portion of the monument is within the South Coast planning area. The monument is managed under its own Resource Management Plan.

3.12.8 Areas of Critical Environmental Concern

The Federal Land Policy and Management Act defines an ACEC as an area within the public lands where special management attention is required to protect and prevent irreparable damage to important historic, cultural, or scenic values; fish and wildlife resources; or other natural systems or processes; or to protect life and safety from natural hazards. Within the Planning Area, there are eight ACECs designated for cultural, biological, and Native American religious values (Refer to Map 2-13 through 2-15). Some ACEC boundaries encompass private lands, however only BLM lands are considered as part of the ACEC. BLM management prescriptions do not apply to private lands or other agency lands that may be within an ACEC boundary, unless an MOU or other agreement has been completed between all the parties.

3.12.8.1 Cedar Canyon ACEC

Located in San Diego County, the Cedar Canyon ACEC encompasses approximately 705 acres of BLM lands and 280 acres of private lands. The BLM lands within the ACEC are entirely within the Otay Mountain Wilderness. Cedar Canyon contains one of the three known populations of Mexican flannel bush (*Fremontodendron mexicanus*). The shrub is listed as a federally endangered species. It is not known how many specimens of the species exist since wildland fire in the fall of 2007 burned through portions of the Cedar Canyon ACEC. Cedar Canyon also contains pristine stands of riparian woodlands, as well as stands of Tecate cypress, a BLM sensitive species.

3.12.8.2 Kuchamaa ACEC

This ACEC is in San Diego County, adjacent to the US-Mexico Border. Lands surrounding Tecate Peak (355 acres) and little Tecate Peak (269 acres) are included in the

Kuchamaa ACEC for the protection of Native American religious heritage. The importance of Tecate Peak (Kuchamaa), and Little Tecate Peak, lies in their religious and spiritual values to the Kumeyaay People. Tecate Peak straddles the US-Mexico Border and much of the peak lies in Mexico, just west of the city of Tecate.

The portion of the mountain in Mexico is owned by the Rancho La Puerta Spa. Rancho La Puerta and its educational arm, Fundacion La Puerta, developed and signed a unique MOU with BLM, CAL FIRE, and the Mexican conservation group PRONATURA to protect and manage the entire mountain on both sides of the border. Although the agreement does not commit any of the parties to specific management actions, the MOU does encourage information sharing and cooperation in developing future goals and objectives. This MOU is believed to be the first such cross-border initiative between the United States, the State of California, and Mexican NGOs for conservation purposes.

3.12.8.3 Johnson Canyon ACEC

Located southeast of Beauty Mountain, the ACEC is within the Riverside–San Bernardino County Management Area. The ACEC includes a total of 1,710 acres currently under Recreation and Public Purposes lease and used by the Systems Ecology Research Group of San Diego State University for research and educational purposes. The relatively small area contains a unique diversity of vegetation including Coulter pine forest and mixtures of both chamise and red shank chaparral.

3.12.8.4 Million Dollar Spring ACEC

Approximately 5,830 acres of BLM public lands on Beauty Mountain are designated as an ACEC and an Outstanding Natural Area (ONA). The area contains fragile soils that underlay one of the largest pristine watersheds found on BLM public lands within the South Coast Planning Area. This watershed includes three perennial springs and approximately 300 acres of South Coast Live Oak Riparian Forest and Southern Cottonwood-Willow Riparian Forest, two communities considered rare. All have significant values for wildlife management. The portion of the ACEC in Riverside County is now with the Beauty Mountain Wilderness.

3.12.8.5 Potrero ACEC

When designated under the South Coast RMP in 1994, the Potrero ACEC included 1,030 acres of BLM public land, with approximately 12,000 acres of private land proposed for acquisition by BLM. The Potrero Valley, surrounded by chaparral-covered hills, contains over 1,900 acres of occupied Stephens' kangaroo rat habitat. Since 1994, CDFG has acquired much of the land originally targeted for acquisition by BLM.

3.12.8.6 Santa Ana River Wash ACEC

The ACEC encompasses 755 acres of BLM public lands north of Redlands within the flood-plains of the Santa Ana River and Plunge Creek. The ACEC is designated to provide enhanced protection of the sensitive habitats for, and populations of, two federally

listed plant species: the Santa Ana River woolly-star (*Eriastrum densifolium* ssp. *sanctorum*) and the slender-homed spineflower (*Dodecahema leptoceras*).

3.12.8.7 Santa Margarita Ecological Reserve ACEC

The Santa Margarita Ecological Reserve is administered by the Systems Ecology Research Group of San Diego State University (SDSU) and is used primarily for research and educational purposes. The reserve is a tract of about 2,700 acres acquired by the State of California and presently designated for use by the California State Colleges as a field biology research area. SDSU also administers approximately 1,230 acres of BLM public lands under an MOU with the BLM. The combined BLM/SDSU holdings in the reserve make it one of the largest public holdings of coastal wildlands in southern California for research and educational purposes.

3.12.8.8 California Rocks and Islands ACEC

By a decision on February 5, 1990 the California Rocks and Islands were designated as an Area of Critical Environmental Concern. This decision, which is incorporated by reference, applies to all islands, rocks and pinnacles off the California coast which were withdrawn by Public Land Order (PLO) 6369. In 2000, the ACEC was included in the California Coastal National Monument, established by Presidential Proclamation.

3.13 Range Management – Livestock Grazing

BLM's objectives for rangeland management are to carry out the intent of the Taylor Grazing Act of 1934, as amended; the Federal Land Policy and Management Act of 1976; and the Public Rangelands Improvement Act of 1978. The objectives as relates to range management are to manage, maintain, and improve the condition of the public rangelands so that they become as productive as feasible for all rangeland values in accordance with management objectives and the land use planning process.

3.13.1 Grazing Authorizations

The Taylor Grazing Act (TGA) provides for two types of authorized use: 1) a grazing permit, which is a document authorizing the use of the public lands within an established grazing district; and 2) a grazing lease, which is a document authorizing the use of the public lands outside an established grazing district. A grazing district is the specific area within which the public lands are administered in accordance with Section 3 of the TGA. Public lands outside grazing district boundaries are administered in accordance with Section 15 of the TGA. There are no established grazing districts in the South Coast Planning area, therefore all grazing on public lands in the planning area is through grazing leases.

A lease must include the following mandatory terms and conditions:

- 1) number and kind of livestock;
- 2) period(s) of use;
- 3) allotment(s) to be used;
- 4) amount of use, in Animal Unit Months (AUMs);
- 5) permits or leases are subject to cancellation, suspension, or modification for any violation of these regulations or of any term or condition of the permit or lease; and;
- 6) permits or leases will incorporate terms and conditions that ensure conformance with subpart 4180 rangeland health.

Other terms and conditions may be specified in grazing permits or leases and their associated site-specific NEPA documents, or allotment management plans which would assist in achieving management objectives, provide for proper range management, or assist in the orderly administration of the public rangelands. Some of these terms and conditions, which are not all inclusive, are contained at 43 CFR 4130.3.

Terms and conditions for grazing permits and leases must be in conformance with resource and management objectives and program constraints, as identified in land use plans.

3.13.2 Environmental Setting

Livestock grazing has occurred for many years in the Planning Area. There are eight separate livestock grazing allotments in the Planning Area, as shown in Table 3-8. A total of 37,211 acres of land are currently available for grazing, which represents approximately 28% of the BLM surface acres of the planning area. Of these grazing allotments, four are currently permitted for grazing: Beauty Mountain, Clover Flat, Hauser Mountain, and Otay Mountain. However, these four allotments have been in non-use, or only grazed sporadically due to long term drought conditions. Four allotments, Dulzura, Mother Grundy, Rogers Canyon, and Steele Peak are currently vacant and will be analyzed for suitability to determine if grazing should continue. In the San Diego area, over the last several decades, allotment use has changed from perennial to seasonal due to climatic shift, changing fire regimes (increased fire frequency), and invasion of exotic noxious weeds. Due to the lack of surface water in the planning area, and on the allotments, water for cattle is typically hauled in or provided on private base property.

3.13.2.1 Special Status Species Habitat within Allotments

All the allotments except two (Hauser Mountain and Mother Grundy) contain designated and/or proposed critical habitat for several special status species, including Quino checkerspot butterfly, Stephens' kangaroo rat, and California coastal gnatcatcher. Some 1,574 acres of California coastal gnatcatcher critical habitat is within the Steele Peak Allotment (1559 acres) and the Otay Mountain Allotment (15 acres). The Steele Peak Allotment contains 1,185 acres of critical habitat for Stephens' kangaroo rat.

Approximately 3,222 acres of designated and proposed critical habitat for Quino checkerspot butterfly exists within the following allotments: Beauty Mountain (12 acres), Clover Flat (1,829 acres), Dulzura (325 acres), Otay Mountain (764 acres), and Rogers Canyon (292 acres). The species inhabits sunny, open clearings in shrublands of southwestern California and northwestern Baja California, Mexico. Only a few restricted populations remain in Riverside and San Diego Counties as well as near Tecate, Mexico. This butterfly is generally seen flying during March and April. Known host plants for this species include woolly plantain (*Plantago patagonica*) and dwarf plantain (*Plantago erecta*). These host plants, and other plants providing nectar sources, are commonly found in areas of recent disturbance, such as by fire or grubbing. During the last century an estimated 75% of Quino range has been lost to urban development, agriculture, and non-native plant invasion. This species is currently listed as endangered under the Endangered Species Act (ESA).

In addition to the above animal species, other special status plant species occur in grazing allotments. Habitat for Mexican flannelbush (*Fremontodendron mexicanum*) occurs within the Otay Mountain Allotment. Mexican flannelbush is a tree like shrub with bright orange flowers. Currently, fewer than 100 individuals are known from sites in two areas, Cedar Canyon (within the Otay Mountain Allotment); and Arroyo Seco, north of San Quentin, Baja California, Mexico. Habitat loss and fragmentation are historical threats; remaining populations are now susceptible to inbreeding depression and

alteration of fire regimes. Although the species is adapted to natural fire cycles, changes in fire frequency or timing may be detrimental to this specie's existence (USFWS 1998).

Tecate cypress (*Cupressus forbesii*) is a multi-trunked evergreen tree that grows up to 30 feet. Habitats for this species are canyons and rocky slopes in the chaparral zone of southwestern California and northwestern Baja California, Mexico. Current known populations exist on the northern slopes of Otay Mountain, within a portion of the Otay Mountain Allotment. Thickets of Tecate cypress are susceptible to crown fires which kill most trees. Reproduction is hastened by such fires as heat melts the resin-filled cones, releasing seeds. Similar to Mexican flannelbush, reproduction appears to be diminished when fires burn too frequently through Tecate cypress stands, killing trees that are not mature enough to produce an adequate seed crop. Currently, Tecate cypress is considered a BLM sensitive species.

3.13.3 Grazing Allotments

Table 3-8 illustrates the grazing activity authorized on the grazing allotments under the existing South Coast RMP. Except for Hauser Mountain and Otay Mountain, all other allotments are available for grazing year round, though most have been in non-use for several years due to drought conditions. The Hauser Mountain Allotment is available December 16-June15 and the Otay Mountain Allotment is available February1-April 30.

**Table 3-8
Current Livestock Grazing**

Perennial/Seasonal						
Allotment Number	Name	Acres	Permitted Use			Habitat
			AUMs	Type	#	
06009	Beauty Mountain	17,413	1452	Cattle	121	IBv, skr, ccg, qc, nb, at
0712	Clover Flat	7,522	715	Cattle	59	qc
07039	Dulzura	400	40	Cattle	5	ccg, qc, Sdbc
07024	Hauser Mountain	2,952	66	Cattle	11	ccg
07041	Mother Grundy	720	72	Cattle	6	ccg, Sdbc
07035	Otay Mountain	5,522	222	Cattle	66	ccg, qc, Sdbc, nb, mf
16042	Rogers Canyon	1,102	102	Cattle	34	IBv, cc, qc
16040	Steele Peak	1,580	132	Sheep	660	Skr, qc, mo, ccg
Total:		37,211*	2801		962	

*Acreage total may be slightly different elsewhere in the document due to differences in acreage calculations in GIS applications.

ccg: coastal California gnatcatcher; qc: Quino checkerspot butterfly; Sdbc: San Diego button celery; nb: Nevins's barberry; IBv: least Bell's vireo; mo: Munz's onion; at: arroyo toad; Skr: Stephens' kangaroo rat

3.13.3.1 Steele Peak, Beauty Mountain and Rogers Canyon Allotments

The Steele Peak Allotment is located in western Riverside County, just west of the city of Perris. The allotment contains 1,580 acres and is permitted for 660 sheep, or 132 AUMs. This is the only allotment for sheep in the planning area. The allotment is characterized by rolling hills with elevations of 1,400 to 2,500 feet. There are no perennial waters, but there are a few seasonal streams flowing in the area during late winter and early spring. The allotment exhibits a mosaic of coastal sage scrub and annual grassland communities. Plant species found throughout the allotment include California buckwheat (*Eriogonum fasciculatum*), California sagebrush (*Artemisia californica*) wild oats, red brome, ripgut brome and chamise (*Adenostoma fasciculatum*). The Riparian areas exhibit red willow (*Salix laevigata*) and western sycamore (*Plantanus racemosa*).

The Beauty Mountain Allotment is 17,413 acres with authorization for grazing 121 cattle year round or 1,452 AUMs, and the Rogers Canyon Allotment is 1,102 acres with authorization for grazing 34 cows year round or 1,102 AUMs. Both allotments are within the Beauty Mountain Management Area. The area possesses high values for wildlife habitat, open space, range, watershed and recreation use, and includes the Beauty Mountain Wilderness, Beauty Mountain WSA, and the Million Dollar Spring ACEC.

Topography is rolling, with a generally western and southern exposure. Elevation varies from 2,400 feet to 5,400 feet in elevation with precipitation of about 20 inches annually. The allotments are mostly in the desert-slope chaparral vegetative community type (Keeler-Wolf). Shrub canopy coverage varies, with some being moderately low, allowing a fairly good expression of the grass-forb component. Perennial forage species include *Stipa* spp. (Needle grasses) and an occasional *Elymus* (wildrye). Most forage is provided by annual grasses (*Bromus rubens*, *B. Tectorum*) and forbs (*Erodium circuitarium*).

3.13.3.2 Clover Flat Allotment

The Clover Flat Allotment includes 6,760 acres of public lands, with 59 head of cattle, or 715 AUMs, permitted for grazing. The allotment is located approximately three miles northeast of Cameron Corners in San Diego County. This grazing allotment is typical of central San Diego County, with low, rolling hills and a mosaic of dense chaparral and open spaces. Elevations in the allotment area range from 3000 to 3300 feet.

The current lessee has intermittently grazed this area since the 1960s. Subsequently, grazing authorizations were determined through the Otay Grazing Environmental Impact Statement (EIS) of 1984. Since 1984, grazing activity has become increasingly intermittent and ephemeral due to change in vegetation community types, recent climatic condition changes, extensive drought, and changing fire regimes in the region. Other portions of the allotment have been reduced due to a proposed Navy withdrawal. The allotment has been grazed only once in the last ten years and habitat conditions are considered excellent in the allotment.

Generally, the Allotment area consists of steep hills and slopes that are bisected by narrow ravines and a few broad valleys. Chaparral characterizes most of the Clover Flat Allotment area. More than 85 percent of the vegetation within the Clover Flat Allotment

is mapped as the chamise series and not typically preferred by livestock. The holly-leaf cherry, scrub oak-chamise, and chaparral whitethorn series are also conspicuous series within much of the area. The holly-leaf cherry and chaparral whitethorn series are more prevalent on the steeper, rockier slopes while the scrub oak chamise series is more common on the flatter and gentler slopes. The coast live oak series occurs along some of the canyon valleys and ravines with seasonal water. The California annual grassland series occurs in the broader valleys where the majority of grazing has occurred in the past.

3.13.3.3 Hauser Mountain Allotment

The Hauser Mountain Allotment located approximately 2 miles west of the town of Campo, in San Diego County, California. It comprises 2,952 acres of public lands with 66 permitted AUMs. The allotment is almost entirely contained within the Hauser Mountain Wilderness Study Area.

The allotment is characterized by rolling terrain, at an average of 3500 feet elevation, and bounded on the south and east sides by steep rocky slopes. The parent material is granitic bedrock (exposed in many places) and soils are predominantly sandy, decomposed granite, low in organic matter.

Vegetation consists of dense stands of Chamise Chaparral dominated by chamise (*Adenostoma fasciculatum*) and small pastures of Coast Live Oak Woodland dominated by coast live oak (*Quercus agrifolia*) and native perennial and exotic annual grass species. These pockets of non-chaparral vegetation are located in nearly flat, less drained areas where soil profile is more developed than in the surrounding slopes. Canyons in the south and southeast of the allotment contain intermittent streams and are characterized by fairly dense stands of Coast Live Oak Woodland with fairly sparse understory (Keeler-Wolf).

The allotment contains two perennial springs, one of which is improved, and several ephemeral seeps and streams that are usually located within the sandy range site. The springs are associated with moderately dense coast live oak stands. These riparian oak stands, classified as South Coast Live Oak Riparian Forest by Holland, are considered a limited plant community in southern California. Ephemeral seeps and streams are often associated with stands of native bunchgrasses, especially deergrass (*Muhlenbergia rigens*), with occasional Coast Live Oak Woodland.

3.13.3.4 Otay Mountain, Dulzura and Mother Grundy Allotments

The Otay Mountain Allotment covers 5,522 acres with 222 permitted AUMs. Otay Mountain Allotment is part of the San Ysidro Mountains, a rugged coastal range which lies on both sides of the U.S.-Mexican border. Elevations range from 800 feet to over 3,500 feet. Vegetative communities consist of Diegan coastal sage at lower elevations, with mixed chaparral and cypress forest higher up (Keeler-Wolf). The San Ysidro Mountains are considered one of the last remaining pristine locations in western San Diego County and are known for their diversity of unique and sensitive plants. The area also plays an important role in San Diego county Multi-Species Conservation Plan, a national model

created to maintain a variety of community types. Invasive and noxious weeds occur primarily in disturbed areas throughout the allotment. The allotment area contains portions of the Tijuana and Otay watersheds, both of which supply water to the San Diego metropolitan area.

Vegetation in the area has been modified from its natural state by three intense wildfires in 1996, 2003 and 2007. The vegetation composition prior to these fires was vastly chaparral (approximately 65%).

The Otay Mountain Allotment has approximately 4,750 acres in wilderness. It has permitted use for 66 cattle February through April for 194 total Animal Units Months (AUMs). Due to fires and drought conditions it has not been grazed since 2000.

The Dulzura Allotment consists of 400 acres with 40 permitted AUMs. The allotment comprises disturbed coastal sage scrub and non-native grassland, both being plant communities that have historically been affected over much of their range by fire. This area burned in October 2007 and has a history of wild fires. The allotment ranges in elevation from approximately 1,100 to 1,560 feet. The entire allotment is Quino checkerspot butterfly habitat.

The Mother Grundy Allotment covers 720 acres of grazable lands. Vegetatively and topographically it is comparable to Dulzura Allotment as it is in close proximity. It consists of chaparral community type chamise, sumac, scrub oak and ceanothus. Smaller shrub cover is composed of wild buckwheat and turpentine bush while understory vegetation is composed largely of annual bromes, wild oats, filaree, needle grass and rye grass.

3.14 Mineral Resources

Minerals management on public lands falls into three categories: locatable, leasable and salable minerals. Authority for management of mineral resources is described below, followed by the potential for minerals in each of the categories throughout the South Coast Planning Area.

3.14.1 Locatable Minerals

The General Mining Law of 1872 allows citizens and those seeking to become citizens of the United States the right to enter upon public lands and reserve interests for the purposes of exploration and development of minerals subject to this mining law. Minerals subject to location under the General Mining Law of 1872 (30 U.S.C. 22, et seq.; as amended) include metallic minerals such as gold, silver, copper, lead, zinc, and uranium; non-metallic minerals such as asbestos, barite, gypsum, and mica; and uncommon varieties of stone (43 CFR 3800). Appropriation of a mineral deposit is made by location of a mining claim. No rights under the mining laws can be exercised by a claimant until a discovery of a valuable mineral deposit has been made within the boundaries of the mining claim.

All activity is managed under the authority of the regulations at 43 CFR 3809 (public lands and wilderness) and 43 CFR 3802 (wilderness study areas). Wilderness is closed to locatable mineral entry; however, existing claims are subject to valid existing rights determination prior to development or casual use activities. Authorization is based on the level of disturbance and whether the activity is conducted in a special designation area. Casual use activities such as panning for gold, prospecting, mining claim monumenting, and creating nominal disturbance are authorized by the regulations. No approval is required from the authorized officer of the BLM where exploration activities would cause more than nominal disturbance and surface disturbance is five acres or less. The notice is required to be reviewed by the authorized officer of the BLM to assure that unnecessary or undue degradation would not occur to public lands or resources. A plan of operations is required for surface disturbance greater than five acres, in a special area, or for mining activity greater than casual use. A plan of operations must be approved by the authorized officer of the BLM and may be subject to stipulations to assure conformance with the land use plan.

3.14.2 Leasable Minerals

Leasable minerals include fluid energy mineral deposits such as oil, gas, coal bed methane, carbon dioxide (CO₂), and geothermal resources. Solid energy and or industrial minerals such as coal, sodium, and potash, are leasable from public lands by the BLM. Although not a leasable mineral, helium is included in this category, because it is typically associated with CO₂ exploration and development (43 CFR 3100 and 43 CFR 3200).

Laws and regulations applicable to federal leasing in the planning area include:

- Mineral Leasing Act of 1920 as amended and supplemented
- Acquired Lands Mineral Leasing Act of 1947
- Mining and Minerals Policy Act of 1970
- Federal Onshore Oil and Gas Leasing Reform Act of 1987
- 43 CFR 3100 (Oil and Gas Leasing)
- BLM Manual Series 3100 — Onshore Oil and Gas Leasing (and handbooks)

Competitive leasing is required for all oil and gas. Leases are typically termed for 20 years, and are extended as long as they are in producing status. A payment of an annual rental and or a royalty for minerals produced is made to the United States by the lessee.

Geothermal resources are nonrenewable energy fluid minerals that can be developed after obtaining a lease from BLM. Regulations applicable to geothermal leasing of federal minerals in the Planning Area include but are not limited to:

- Geothermal Steam Act of 1970
- 43 CFR 3200 (Geothermal Resources Leasing)

3.14.3 Salable Minerals

These minerals include construction materials such as sand, gravel, cinders, decorative rock, and building stone as described in (43 CFR 3600). Disposal (sale) of mineral materials is authorized in accordance with appropriate laws, regulations, and policies in conformance with the approved land use plan and if disposal is determined to be in the public interest. Use of public lands and resources for salable mineral development cannot be allowed if not in the public interest, and if such action would result in unnecessary or undue degradation to public lands or resources.

Laws and regulations applicable to salable minerals on public lands in the planning area include:

- Acquired Lands Mineral Leasing Act of 1947
- Mineral Materials Act of 1947 as amended
- FLPMA; and 43 CFR Part 3600
- Surface Resources Act of 1955
- BLM Handbook H3042-1 — Solid Minerals Reclamation Handbook
- BLM Manual and Handbook 3600

3.14.4 Mineral Resource Potential

3.14.4.1 Locatable (Metallic and Non-metallic) Mineral Potential

Throughout the whole planning area, there are 101 active mining claims (September 2008 LR2000 database) maintained on public land as shown on Map 3-29.

Los Angeles County Management Area

High to moderate potential areas for gold, lead, graphite, and clay exist on the federal lands within the management area. Most of the past mining and prospecting for locatable minerals have been within the Angeles National Forest. Less than one percent of BLM public lands contain high potential for gold.

Riverside–San Bernardino County Management Area

Significant deposits of clay occur south of Corona and numerous tile manufacturing plants are in operation north of Lake Elsinore. Many of these clay deposits are on private lands (patented mining claims). Several parcels of BLM public land north of Lake Elsinore are within the formation that is presently being mined for these clay resources. No operations currently exist and plan of operation level activities are not likely expected to begin on the BLM public lands.

There is high potential for gold to occur on the parcels just east and northeast of the Lake Elsinore area. Past mining has occurred in this area and numerous mineral patents have been issued. In the southeast and south central part of the management area, there are significant areas classified as having high to moderate potential for dimension stone, gold, and gemstone.

Isolated areas are classified as high and moderate in potential for feldspar, limestone, silica, manganese, molybdenum, tungsten, and rarely iron, copper, and uranium. Because of the scattered nature of the federal lands, only a few of the parcels fall within these areas.

Beauty Mountain Management Area

The Beauty Mountain Wilderness is within this management area. The mineral evaluation for the WSA found that there is a potential for tungsten at the Pawnee Mine about 1 mile southeast of Beauty Peak located on patented mining claims. Throughout the wilderness area prospect pits can be observed, and historically, the California Journal of Mines and Geology (Vol. 35, Jan. 1939) shows several mines located near the southern boundary of the wilderness. These mines and prospects occur on and around the faults near the formation contacts. There are 1,725 acres of BLM public lands classified as high in potential for tungsten.

East of Cooper Cienega truck route, there is a high potential for gemstone (tourmaline) occurrence along an unnamed fault. Approximately, 463 acres of BLM public lands are classified as high in potential for gemstone. Mining of gemstone is being conducted on

an intermittent basis by a mining claimant. Large (3-8 foot) intrusive quartz veins containing numerous tourmaline crystals of varying size have been observed.

San Diego County Management Area

The predominant locatable mineral commodities in this area are gold, gemstone and dimension stone. Gold resources occur throughout the management area, but are more concentrated along the eastern boundary, extending from the Boulder Creek District southeasterly to Campo near the Mexican border. The Mesa Grande and Boulder Creek gold mining districts occur within the management area.

"Black granite" (or dimension stone) is mined from intrusive bodies of gabbroic rocks and has been used in the past for facing buildings. Presently, however, it is being mined from the San Marcos Mountains northwest of Escondido for use in manufacturing of precision tool calibration equipment for the space and aircraft industry.

Many claims have been patented for gemstones within the Pala, Rincon, Mesa Grande, and Ramona gem mining districts

The remaining mineral resources include (but are not limited to) isolated occurrences of various metallic minerals such as lead, molybdenum, copper, aluminum, uranium/thorium, nickel, iron, manganese, tin, and rare earths and non-metallic deposits of quartz, feldspar, clay, kyanite, perlite, and coal. There is a high to moderate potential for the occurrence of limestone in the southwestern portion of the management area within metavolcanic rocks of the Black Mountain formation. However, because this limestone has been used in the past for manufacture of numerous and varied commodities, it is unknown whether the deposits are properly considered locatable or salable.

3.14.4.2 Leasable (Fluid and Solid Energy, and Solid) Mineral Potential

The existing oil and gas classifications for the whole planning area are shown on Maps 2-25 and 2-26, Oil and Gas Leasing Alternative A. The geothermal mineral potential for the planning area is shown on Map 3-30.

Los Angeles County Management Area

Within the management area, a total of 1,070,283 acres are classified as having high or moderate potential for oil and gas. The areas of known resources and highest potential appear to be limited to the Los Angeles and Ventura basins, and are associated with Miocene and Pliocene age rocks (12,000,000 to 3,000,000 years before present) of marine origin. Within areas classified as having high potential for oil and gas, there are 17,318 acres of BLM public and split estate land, which is less than 2 percent of the total throughout the management area.

There are currently 22 leases on lands where oil and gas rights are federally owned (one on Veterans Administration property).

From 1979 through 1988, 1,583 oil and gas wells were drilled within the management area. Most of these wells were drilled within existing proven oil and gas fields. Almost all

of the new wells were drilled on private or state-owned lands. A few were drilled on BLM public lands, or BLM split estate lands, or the lands of other federal surface-managing agencies. Drilling of new wells has shown an irregular decline and production has shown a steady decline during this period.

Throughout southern California there is potential for geothermal resources. The many fault zones within the management area act as conduits for migration of water from depth. Though these resources may not meet the criteria for commercial production of energy, there is a potential for direct heat application uses of these shallow depth hot waters.

Riverside–San Bernardino County Management Area

About 12% of the management area (279,000 acres), including both private and public land, is classified as having high or moderate potential for the occurrence of oil and gas resources. The areas of known resources and highest potential appear to be limited to the vicinity of the Prado-Corona oil fields. A total of 965 acres of BLM public lands and BLM split estate lands lie within areas classified as high or moderate in potential. A total of 3,258 acres of BLM public lands and 2,365 acres of BLM split estate lands are classified as being low in potential for oil and gas resources.

Currently one federal oil and gas leases exist within the management area. The two leases are within Prado Basin on lands where the surface is administered by the Army Corps of Engineers. These leases are administered by BLM and contain one producing oil and gas well.

Based on the CDMG's classification, areas exist around Lake Elsinore that have a high potential for the occurrence of geothermal resources; all of the remaining lands within the management area are classified as having a moderate potential for geothermal resources. No geothermal development, however, is expected within the next ten years (verify with geothermal programmatic Decision).

Beauty Mountain Management Area

The entire Beauty Mountain Management Area is classified as having no potential for oil and gas resources. There is a moderate potential for the occurrence of geothermal resources due to the close proximity of the Elsinore Fault Zone and known faults that dissect the management area

San Diego County Management Area

All of the BLM public lands within the management area have been classified as having no potential for oil and gas resources, and no interest is expected for oil and gas leasing or development.

3.14.4.3 Salable (Construction Material) Mineral Potential

Los Angeles County Management Area

The principal demand for salable minerals within the management area is sand and gravel, used for construction aggregates. Based on an estimated annual per capita consumption of five tons annually (Reining, 1985), the total demand within Los Angeles and Orange Counties is 50 million tons per year. The available supply of aggregate materials is ever decreasing as the reserves of existing operations are depleted and as the mining of other deposits is precluded by the expansion of incompatible land uses.

The California Division of Mines and Geology (CDMG) has completed a comprehensive study of aggregate minerals in southern California. This study was used to classify the management area into zones of high, medium and low potential for the planning effort. Washes, valleys, and areas near the margins of igneous mountains generally contain known significant aggregate resources or areas of high potential. Mountains containing granitic rock formations, but not classified in the CDMG study, were classified by geologic inference as having moderate potential for aggregate resources in the form of granite and other rock bodies that possess a high percentage of quartz. A total of 577,361 acres within the planning area were as classified high in potential for sand and gravel resources. BLM public land contains one per cent (or 1,015 acres) of the area classified as having high potential. There are also, however, 8,865 acres of BLM split estate acreage with high potential, including a major known deposit of sand and gravel in the Soledad Canyon area. This deposit, estimated to be several hundred million tons, is classified by CDMG as a regionally significant source of aggregate. In 1989 BLM completed a competitive sale in this area, and sold 56 million tons with a bid value of \$28 million.

Riverside–San Bernardino County Management Area

In the northern part of the management area, several areas within the Santa Ana River wash are classified as having high potential for aggregate materials, including four parcels of BLM public land (1,040 acres). This area has been classified by the California Division of Mines and Geology (CDMG) as a regionally significant source of aggregate. Aggregate production from this area has been ongoing for many years on adjacent private lands, and several of the federal parcels have had aggregate production in trespass. In addition to the Santa Ana River wash, several other areas have been identified by CDMG as regionally significant sources of construction aggregate.

Within the management area, 662,713 acres of both private and public land are classified as high in potential for sand and gravel resources. BLM public lands and BLM split estate lands comprise 0.1 % and 0.5% respectively of the total land acreage with high potential. While large parts of the central and southern portion of the management area are classified as having moderate potential for sand and gravel resources based on the CDMG's aggregate resources study, little commercially producible sand and gravel has been found. Rapid residential and business development in the Temecula area is creating a great demand for aggregate materials in the southern part of the management area, and this demand is expected to continue or even increase. However, most of

the aggregates used for this development are being transported long distances from central or southern San Diego County or from the Riverside area.

Beauty Mountain Management Area

There is a high potential for the occurrence of aggregate resources along Temecula Creek on the southwestern boundary of the management area, Chihuahua Valley to the east and Terwilliger Valley in the northeast. However, only small parcels of BLM public land and BLM split state lands occur in the areas classified as having a high potential for aggregate resources. BLM public lands and BLM split estate lands are 7% and 18% of the total land area of 15,897 acres which is classified as high in potential for sand and gravel resources. Most of the high potential areas are located on privately owned lands. No locations within the management area were classified as regionally significant sources of construction aggregate by the State Division of Mines and Geology. Moderate potential exists for the occurrence of sand and gravel within the granitic batholith rocks. However, because these rocks are a complex association of granite, granodiorite, diorite, tonalite and adamellite, areas where rocks occur that contain sufficient quartz to be useful as aggregate material will have to be determined on a case-by-case basis. Demand for large quantities of sand and gravel resources is assumed to be low due to the rural nature of the area, and lack of major construction activity relative to the more urban areas in the region.

San Diego County Management Area

There are 356,338 acres classified as possessing high potential for sand and gravel on public and private land throughout the management area, including 829 acres (0.23%) of BLM public land and 2,518 acres (0.71%) of BLM split estate lands. Most of the river wash areas have been classified as having high potential for sand and gravel resources.

The granitic batholith rocks were assigned a moderate potential for sand and gravel resources based on the occurrence of granite and granodiorite within this formation. However, because the available geologic mapping does not distinguish between the rocks containing greater than 10% quartz (i.e., granite/granodiorite/quartz monzonite that could be used to produce aggregate) and rocks containing less than 10% quartz (i.e., tonalite and diorite that are not useful for aggregate production), it is not possible to determine the exact mineral potential on a parcel by parcel basis at this time. On a case by case basis some of the parcels classified as having moderate potential will actually have high potential while others will be found to contain no resources suitable for sand and gravel production. Within the management area there is a total of 396,618 acres, including public and private land, which is classified as moderate in potential for sand and gravel. Of this total, 10% (38,621 acres) is BLM public land and 13% (51,382 acres) is BLM split estate. Decomposed granite is mined along the western boundary of the granitic batholith rocks (Weber, 1963). This type of resource is a surface-weathering phenomenon and occurs only from 10 to 100 feet from the surface. This commodity is used for fill, road base, and drain rock. There are no current operations for this material on BLM public lands or split estate lands.

3.15 Recreation

BLM-administered lands in the Planning Area are relatively unknown and under-utilized for outdoor recreation. This is partly due to the small size and scattered distribution of the public land parcels. Opportunities exist within the Planning Area for a wide variety of recreational uses at low-to-moderate levels of intensity. Activities known to occur in the area include hiking, horseback riding, nature study, hunting, rock hounding, sightseeing, target shooting, camping, mountain biking, and OHV use.

The BLM has not constructed or developed any recreation sites or facilities in the South Coast Planning area, other than maintenance on segments of the Pacific Crest National Scenic Trail. Roads and informal trails provide access to public lands for dispersed use.

Several County Parks or Open Space Reserves are managed for recreation and have developed facilities on public lands under Recreation and Public Purpose (R&PP) Act leases. In addition, numerous other federal, state, and local parks and recreation sites are near BLM lands and provide recreation facilities.

Visitors that use BLM-administered public lands in the Planning Area for recreational pursuits are primarily from the surrounding communities, particularly in Riverside and San Diego Counties. The BLM has not had the capability to collect adequate visitor use data in the planning area, but has produced some data from staff observations or from other agencies. Visitor use data that is available is provided in the sections below.

3.15.1 Los Angeles County Management Area

The BLM parcels in Los Angeles County are all located within the extreme northern portion of the county. The majority of the parcels are located east of Santa Clarita, California, along Highway 14. The parcels are scattered along the foothills surrounded by rural residential development. Most recreational use on BLM public land within the management area occurs on just a few parcels. Two parcels contain a total of 1.5 miles of the Pacific Crest National Scenic Trail (PCT). In 1994 it was estimated that this section of the trail receive 1,000 VUD annually. Due to the expansion in population around the trail segments, it is projected that visitation has increased greatly since 1994. There are five parcels of BLM public land adjacent to the Castaic Lake State Recreation Area. In 1994 estimated annual visitor use days for these parcels was 2000. Due to the growth of the area over the last several years, annual visitor use days of these parcels could have doubled. Use is limited on BLM public lands primarily because of the small and isolated land base (5,600 acres consisting of mostly small and isolated parcels without legal public access). In addition, none of the parcels are developed to provide any structured form of recreational experience.

The parcels located west of Interstate 5 are located adjacent to housing developments. These parcels are likely to see increases in both motorized and non-motorized recreational use. The lands within the Agua Dulce area are primarily land-locked and utilized by adjacent landowners. The landowners in this area are concerned with maintaining open space, especially for wildlife habitat and non-motorized types of recreational uses

such as hiking, nature study, photography, horse riding, and hunting. Actual visitor use data is not available for this area, as these parcels are small and inaccessible, thus making it difficult to determine the actual type and amount of recreational use taking place.

Opportunities to obtain easements across private land for access onto BLM lands, is not known. However, it is anticipated that the increasing desire for open space will function as a catalyst for local and regional interest groups to partner with BLM in gaining access to the public lands in the area.

3.15.2 Riverside–San Bernardino County Management Area

The larger parcels of BLM lands in the Riverside–San Bernardino County Management Area have the potential to provide one or more types of recreational opportunities. Expanding growth and development over the last several years have created demands which have far exceeded the existing supply of recreation facilities. The result is a recognized need for BLM public lands to meet the public demand for recreation, and to provide a broader range of recreational opportunities. Demands have been identified for open space, preservation, developed facilities, and interpretation.

The Riverside–San Bernardino County Management Area possesses several recreational attributes which are found nowhere else within the planning area. These include the Santa Margarita River (determined eligible for inclusion in the National Wild and Scenic Rivers System) and Soboba (where a large concentration of land is available close to urban areas). BLM manages land adjoining the water surface of the Railroad Canyon Reservoir near the City of Canyon Lake. Although the lake presents an attractive recreation opportunity, the lake is owned by the Elsinore Valley Metropolitan Water District and the water surface is leased to the Canyon Lake Property Owners Association for their private use and enjoyment. As such, there is no legal right of public access to Canyon Lake, aka Railroad Canyon Reservoir, for any recreational purposes, even from BLM-managed public land. The presence of many plants and animals, both common and rare, offer potential for nature study, photography, and interpretation. Because of this potential, the Soboba area was established as a Special Recreation Management Area under the current RMP. All these areas provide the best opportunity to gain legal access and develop facilities for recreational activities such as equestrian use, hiking, camping, picnicking, nature study, hunting, model airplane flying, and off-highway driving.

Large parcels of BLM public lands are also located near growing urban areas such as Hemet, Beaumont, Perris and Temecula. Although there have been no visitor use surveys or counts of recreational use in the management area, it is estimated that the 15,000 visitor use days for 1994 have increased greatly.

Currently, the Riverside–San Bernardino County Management Area is the only area in the South Coast that has permitted recreational facilities and competitive events. Two permitted facilities are located within the Santa Ana River Wash area near the community of Highland. An outdoor shooting range is leased to a private organization under a Recreation and Public Purpose (R&PP) lease. The MARKS Club a non-profit

organization has a land use permit to operate a radio controlled model airplane site at the Greenspot borrow pit. The Southern California Trials Association conducts a yearly event in the Lakeview Hills area of Riverside County. There is a closure to target shooting along the High Point Road near the community of Aguanga. This is a joint closure with the Cleveland National Forest, Palomar Ranger District.

3.15.3 Beauty Mountain Management Area

BLM lands which encompass the Beauty Mountain Management Area are mostly inaccessible to the public due to the surrounding private land. The largest parcel of contiguous BLM land can be accessed along the Cooper-Cienega Truck Trail. This route skirts the eastern boundary of the Beauty Mountain Wilderness Study Area (WSA). The most southern portion of the management area is accessible by roads which connect with the Forest Service #9904 and #9505 roads. The Chihuahua Valley Road connects the extreme eastern parcels of BLM land established as the Johnson Canyon Area of Critical Environmental Concern (ACEC).

The Beauty Mountain area was established as a Special Recreation Management Area due to the anticipated growth and development in this portion of Riverside County. This is evidenced by the explosion of growth that has taken place in Temecula Valley some twenty miles to the west. This growth has continued into the rural communities of Aguanga, Oak Grove, Summit, Chihuahua Valley, and Anza. The result of this growth is a recognized need for the Bureau lands to satisfy some of the public demand for recreation, and to provide a broader range of recreational opportunities.

There are no developed recreation sites or facilities within the management area. The Cleveland National Forest manages three campgrounds, and there is one private recreational vehicle campground within the region. The Pacific Crest National Scenic Trail (PCT) passes through the area, but does not cross BLM public land. The old and largely abandoned California Riding and Hiking Trail does cross some parcels of BLM public land, forming the eastern boundary of the Beauty Mountain Wilderness Study Area.

Although no surveys or counts of recreational use has been initiated in the management area, it is likely that the visitor use days (VUD) have increased from the 6000 annual VUDs estimated in 1994. It is known that surrounding land owners utilize the area for hiking, nature study, equestrian activities, hunting, off-highway vehicle driving, and target shooting.

The current management direction for the area is to provide opportunities for low-impact recreation and maintain a natural unmodified environment. Although no recreational facilities have been developed in the SRMA, the need for staging areas, trailheads, and easements across private land is evident because of the increase in recreational use, user demand, and resource protection. BLM's goal is to meet these recreation demands while also meeting the management objectives for the area.

3.15.4 San Diego County Management Area

The San Diego County Management Area has the greatest potential to provide for the broadest range of recreational opportunities within the South Coast Planning Area. Several large blocks of BLM public land are found here in the closest proximity to the largest populations. The proximity of Mexico, the Pacific Ocean's influence upon climate, the existing levels of use beyond that occurring in most other South Coast areas, and exceptional resource values combine to provide the most complex and significant recreational opportunities in the planning area. As a result of rapid growth, however, the demand for recreation exceeds the available supply of opportunities.

Perhaps because of the availability of other recreation opportunities and historically lower use pressures, BLM public lands in the San Diego County Management Area have generally retained a high degree of natural features and values. This now makes them an even more scarce and valuable commodity, and one to be carefully managed. Other government agencies, interest groups, and individuals have all expressed strong interest in the recreational use and development of BLM public lands.

3.15.4.1 Recreation Management Areas

San Diego County is divided into two recreation management areas: the Border Mountains Special Recreation Management Area, and the South Coast Extensive Recreation Management Area.

Border Mountains Special Recreation Management Area

The Border Mountains Special Recreation Management Area (SRMA) encompasses BLM lands south of Inter-State 8 to the U.S.-Mexico border and from Otay Lakes to the Imperial County line. The area contains numerous parcels scattered across the southern portion of the county.

The current management direction for the Border Mountains SRMA is to provide opportunities for low-impact recreation and maintain a natural unmodified environment. No recreational facilities have been developed in the SRMA. However, the need for staging areas, trailheads, and easements across private land is evident because of the increase in recreational use, user demand, and resource protection. BLM's goal is to meet these recreation demands while also meeting the management objectives and commitments for habitat conservation.

Visitor use throughout the SRMA has been difficult to determine given the remote and dispersed nature of the parcels, the infrequency of staff patrols and lack of traffic counters. Visitor use in 1994 was estimated at 13,000 visits. It is projected that the number of yearly visitors to the area has increased greatly due to the population expansion of San Diego County. This projection is based on observations during law enforcement and fire prevention patrols, and by resource staff field visits.

Because of the large concentration of public land, diverse landscape, variety of recreational opportunities, and accessibility, the Border Mountains SRMA is divided into three

distinct management zones: Otay-Kuchamaa, Hauser-Potrero, and La Posta-Jewell Valley.

Otay/Kuchamaa Zone. This zone encompasses public land from Otay Mesa to Tecate, California. The largest contiguous parcel of public land incorporates the Otay Mountain Wilderness and surrounding lands from Otay Lakes Road and Highway 94. Recreational opportunities in this area are varied and include equestrian use, hunting, off-highway vehicle touring, nature study, photography, hiking, and target shooting, mountain bike riding. Currently, target shooting is limited to 300 feet from the Otay and Minnewawa Truck Trails.

The Otay/Kuchamaa Management Area contains the largest blocks of public lands in the planning area, and the opportunities for the greatest diversity of recreation use. However, the lands around Otay Mountain have long been identified for special management due to their unique and relatively undisturbed natural characteristics. The area consists of plant communities considered rare, including Coastal and Diegan sage scrub, and Southern Interior Cypress Forest (Holland, 1986). The importance of the area was recognized in 1962 through a Public Land Order establishing the Otay Mountain National Cooperative Land and Wildlife Management Area, and in 1968 Otay Mountain was listed as a Research Natural Area in the Directory of Federal Natural Areas. The San Diego MSCP identified the Otay/Kuchamaa Cooperative Management Area as a core component of the MSCP preserve system and the 18,500-acre Otay Mountain Wilderness was created by Congress in 1999. As part of BLM's commitment to the MSCP, over 4,000 acres have been acquired for the preserve in the Otay/Kuchamaa Management Area since 1996.

The rural areas around Jamul and Dulzura have grown substantially since 1994, with the building of large "ranch style" estate homes. Equestrian use is very popular in the area and BLM lands are used extensively for horseback riding, although actual use is not recorded. There is a great deal of interest in management of the planning area by local equestrian groups.

Prior to acquisitions in the management area, recreation use was minimal due to lack of legal access to public lands. The acquisitions of the Daley Ranch (Rancho Jamul) and the Clark Ranch between 1998 and 2001 provided improved access to public lands from State Highway 94 and Marron Valley Road. Previous to their acquisitions by BLM, the Daley and Clark Ranches were closed to public recreation use. Beginning in 1999, the BLM allowed public access to the portions of the Daley Ranch acquired by BLM, primarily the area known as Sycamore Canyon. The majority of the Daley Ranch was purchased by CDFG (Rancho Jamul Ecological Reserve) and is not open to public use except for special events. The BLM allowed motorized vehicle access into Sycamore Canyon on existing roads from 1999 until October 2003. The area was closed due to emergency fire restrictions following the Otay Fire from November 2003 until May 2005.

Before the Otay Fire of October 2003, recreation use was not well recorded but was occasionally observed by BLM staff (Hill, Howe, Funk). Use generally occurring consisted of driving for pleasure by 4x4 or street vehicles, horseback riding, picnicking, ATV and motorcycle riding, hiking, target shooting, hunting (upland bird and deer), dog

training, hiking, mountain bike riding, photography, nature study, and hang gliding. Camping was rarely observed. A unique activity is visiting Tecate Peak/Kuchamaa to experience the spiritual attributes of the internationally known mountain. Other than visits for traditional uses by Native Americans, most visitors to Kuchamaa tended to be from Europe (personal observations, Hill).

Total estimated visits throughout the Otay/Kuchamaa Management Area were less than 10 per day, with most use occurring on weekends. Visitors tended to use the Otay Mountain Truck Trail and the road into Sycamore Canyon.

After May 2005, the BLM observed a substantial increase in off-highway vehicle (OHV) activity and target shooting in Sycamore Canyon shortly after the emergency closure was lifted. The OHV activity was characterized by a proliferation of surface disturbances including hill climbs, play areas, and new parking and staging areas. Target shooting created a substantial increase in trash, soil disturbance and girdling of old oak trees that were used as both targets and target backstops. In addition to general surface and habitat disturbance, the BLM determined that these activities were damaging a significant archaeological site located in the canyon as well as habitat for the Quino Checkerspot butterfly. These activities were also impacting the areas stabilized and restored after the Otay Fire. Another fire burned within Sycamore Canyon on July 20, 2006 resulting in additional acres of surface and habitat disturbance. As a result of these impacts and the proliferation of OHV and shooting related disturbances, the BLM again closed Sycamore Canyon to vehicular use by the public. This vehicle closure is in effect until a decision is signed by BLM establishing OHV designations and routes of travel. These public lands remain open for foot and horse travel and administrative vehicle use. The remainder of the management area has been open to motorized vehicle use on existing routes.

Hauser - Potrero Zone. This management zone receives very little recreation use due to limited access to public lands. Most roads into the Hauser Mountain and Potrero communities are blocked by gates on private property.

The primary recreation activity in the Hauser-Potrero Zone is hiking on the Pacific Crest Trail. The BLM maintains the PCT southern trailhead on the Mexican border, just south of Campo, and 15 miles of the trail between the border and the boundary of the Cleveland National Forest. Most of the use on the PCT is by “through hikers” attempting to hike the entire 2,650-mile trail. Although total trail use is not counted and is hard to estimate, the “through hikers” register at the beginning of the trail in Campo. An average of 300 hikers each year starts on a “through hike”, with another estimated 300 casual visitors a year hiking the 15 miles of the PCT in the planning area.

Other uses in the area include driving for pleasure by 4X4 or street vehicles, horseback riding, ATV and motorcycle riding, target shooting, and hunting (upland bird). Camping is very rarely observed.

La Posta - Jewell Valley Zone. Recreation use in this zone is minimal due to the small size of the dispersed public land parcels. The largest blocks of public land are in the vicinity of Smith and La Gloria Canyons and those surrounding the La Posta Mountain

Warfare Training Center. Recreation uses observed have included driving for pleasure by 4X4 or street vehicles, horseback riding, ATV and motorcycle riding, target shooting, and hunting (upland bird). Camping is rarely observed. Currently the La Posta area is closed to target shooting under a closure order. The border fence access road constructed by the Department of Homeland Security provides a route connecting public land parcels along the border and is frequently used by the public.

South Coast Extensive Management Area

This area encompasses the BLM lands in San Diego County outside the Border Mountains SRMA. These lands are small parcels scattered throughout San Diego County. The larger blocks are under R&PP leases to the County of San Diego for open space preserves and parks or are adjacent to these areas. These include Hell Hole Canyon, El Capitan, and Mt. Gower Open Space Preserves. These lands are land locked by private parcels or Indian reservations so access is somewhat limited through the Preserves. The preserve areas are limited to hiking and horseback riding activities. BLM lands not incorporated into the open space preserves receive motorized vehicle use where access is not restricted. It is presumed that the small (40 acres or less) scattered BLM parcels throughout the county receive recreational use from landowners who reside in close proximity to these lands.

3.15.4.2 Regional Recreation Opportunities

BLM and other public lands in the region provide numerous recreation opportunities. Most of the BLM-managed public lands in the planning area provide for dispersed recreation as described in the sections above. These BLM lands have no designated recreation sites or developed facilities. Nearby public lands managed by the BLM El Centro Field Office include the Lark Canyon OHV Area and McCain Valley Recreation Area. These recreation areas include developed campsites (water, vault toilets, picnic tables, etc.), and the Lark Canyon OHV Area which includes a network of trails for motorcycles and ATVs. The Lark Canyon and McCain Valley Recreation Areas are located in eastern San Diego County, near the community of Boulevard, adjacent to the Border Mountains SRMA. In addition, BLM-managed public lands in Imperial County, within 20 miles of the Border Mountains SRMA, offer extensive opportunities for both motorized and non-motorized recreation, including the Plaster City OHV Area and the Yuha Desert.

The Cleveland National Forest has several recreation sites that are in close proximity to the Border Mountains SRMA. These include the Corral Canyon OHV Area and campground and the Laguna Mtn. campgrounds. The Cuyamaca Rancho State Park, and several county and regional parks such as Potrero County Park, Lake Morena, Lake Jennings, Otay Lakes, and Mission Hills Regional Park are located within the southern portion of San Diego County. The Hollenback Canyon Wildlife Area offers day use opportunities for hunting, horseback riding, photography, and hiking. The Rancho Jamul Ecological Preserve is open for hunting, nature study, and special events only on scheduled dates or by permit.

3.16 Transportation and Public Access

Public lands managed by the BLM in the Planning Area are intermingled with lands administered by other federal agencies, as well as county, state, and private lands. Managing access to and across public lands is a vital task for BLM. The authorities for the BLM transportation and public access to and on the public lands include but are not limited to:

- Federal Land Policy and Management Act of 1976 (43 U.S.C. 1701 et seq.)
- Endangered Species Act (16 U.S.C. 1531 et seq.)
- Executive Order 11644
- Executive Order 11989
- 43 CFR 8342
- National Management Strategy Motorized Off-Highway vehicle Use on Public *Lands* (2001)
- National Mountain Bicycle Strategic Action Plan (2002)

Access refers to the physical ability and legal right of the public, agency personnel, and authorized users to reach public lands. Access to the public lands within the Planning Area is an issue of concern to both agency personnel and the public. The existing fragmented ownership pattern of BLM lands intermingled with private, state, and other federal lands complicates the access situation. Generally speaking, access is acquired from willing adjacent landowners on a case-by-case basis, and as needs or opportunities arise.

Under the current management decisions motorized vehicle access is limited to the routes of travel that existed on the BLM lands in 1994, except for those areas where motorized vehicle closures have been established. Unless otherwise designated, stopping, parking, and camping are permitted on BLM public lands within previously disturbed sites and within 25 feet of existing routes of travel. No designated open riding areas exist within the planning area.

As part of the plan revision, off-highway vehicle designations will be established for all four Management Areas. In addition, a route of travel plan will be developed. Routes will be designated as either "Open", "Limited", or "Closed" to motorized vehicle use. To support this effort an inventory of routes was conducted of the BLM lands for all four Management Areas. Refer to Maps 2-39 through 2-42 for routes existing in 1994.

3.16.1 Los Angeles County Management Area

The BLM lands with surface ownership are located in northern Los Angeles County. The majority of these lands are scattered isolated parcels of less than 80 acres. The BLM parcels are either surrounded by private land or they abut against the Angeles National Forest. Public access to the parcels is either limited or non-existent. The majority of these routes are divided into less than half-mile segments.

The parcels are so scattered and small that the need to acquire easements for public access is not warranted. These small segments would provide little if any motorized recreational opportunities. At best easements could be sought on adjacent private lands to establish parking or staging areas for recreational users who are looking to pursue non-motorized types of recreational pursuits such as horse riding and hiking. Those parcels adjacent to housing developments are likely to have off-highway vehicle activities occurring on them.

Two parcels (025-011, 019-361) contain a total of 1.5 miles of the Pacific Crest National Scenic Trail (PCT). In 1994 it was estimated that the trail received 1,000 Visitor Use Days (VUD) annually. Over the past 14 years it is estimated that visitation along the trail has increased by as much as ten percent to 1100 VUD annually.

**Table 3-9
Motorized Vehicle Closures**

Management Area	Parcel Number	Location	Acres Closed
San Diego County	216-361	Fern Creek	775
San Diego County	300-211 301-211	Kuchamaa ACEC (designated route)	624
San Diego County	299-011	Otay Mtn. Wilderness (Cedar Canyon ACEC)	16,895
Riverside-SB County	221-231 222-221 222-271 222-291 223-261 223-271 223-311 223-351 223-261	Beauty Mountain Wilderness	15,628
Riverside-SB County	218-231	Santa Margarita River ACEC	1,167
Riverside-SB County	205-301 205-341 220-041	Oak Mountain	902
Riverside-SB County	180-111	Valley Vista	552
Riverside-SB County	220-191 220-241 221-301 221-331 221-332	Agua Tibia Wilderness	538
Riverside-SB County	107-021 107-101 107-121	Santa Ana River ACEC	750
Riverside-SB County	108-081	Santa Anna River	281
Riverside-SB County	176-261	Canyon Lakes (designated route)	638
TOTAL			38,469

3.16.2 Riverside–San Bernardino County Management Area

Of the 90-some parcels of BLM-administered lands that are spread throughout Riverside and San Bernardino Counties, only a handful offer adequate access for motorized vehicles. The majority of the lands are small isolated parcels surrounded by private land which block access to public land users. Currently, there are no legal easements across these private lands to allow for access to public land recreational users.

Most accessible BLM lands consist of the larger parcels of Poppet Flats, Railroad Canyon Reservoir (Canyon Lakes), and Steele Peak. These parcels are centered around the growing communities of Banning, Beaumont, Hemet, Perris, and Quail Valley. Current management direction for the Soboba Special Recreation Management Area, which includes Poppet Flats, is to allow for facilities which will provide for the protection of resource values and safety. Such facilities in the form of staging or parking areas to reduce potential impacts have not been developed to date.

A total of 4,027 acres are closed to motorized vehicle use. Motorized vehicle closures were established to protect sensitive species, natural and wilderness values on these lands. Table 3-9 provides a list of the areas where vehicle access is limited to defined routes or closed to motorized vehicle use.

The “Palms to Pines” National Scenic Byway runs along California State Route 243 from Banning to Idyllwild. About one quarter mile of the scenic byway crosses BLM-administered land.

The demand for riding areas and access to BLM lands is increasing and will most likely continue as the surrounding communities continue to grow. This demand will also increase the difficulty of implementing and maintaining the existing motorized vehicle closures. BLM continues to face the challenge of protecting resource values and providing recreational opportunities, especially within the two fastest growing counties in the nation.

3.16.3 Beauty Mountain Management Area

The Beauty Mountain Management Area not only contains the largest parcel of contiguous BLM land, but also contains large scattered parcels as well. Surrounded by private land, public access is extremely limited in Beauty Mountain. Although no official easement exists, the Cooper-Cienega Truck Trail provides motorized access from Chihuahua Valley Road through the center of Beauty Mountain. From the truck trail other less established routes access the western and eastern portions of the Mountain.

Other BLM parcels exist to the north, south and east of Beauty Mountain. The southern parcel connects BLM lands to the Cleveland National Forest, Palomar Ranger District. The connecting routes are Forest Service routes 9S04 (Puerta La Cruz Road) and 9S05 (Indian Flats Road). The Indian Flats Road provides access to the Forest Service campground.

The eastern and northern parcels in the Beauty Mountain Management area are less accessible, as they are blocked by private land and the Cahuilla Indian reservation lands.

The most active motorized recreational use in the area is attributed to the adjacent landowners and Chihuahua Valley area residents. The adjacent landowners have expressed the need for camping and vehicle staging areas for Beauty Mountain. The area provides opportunities for a multitude of recreational activities which include horse riding, hiking, camping, target shooting, and four-wheel drive touring. Demand for motorized vehicle access is expected to increase with the population expansion of the communities of Anza, Aguanga, Chihuahua Valley, Warner Springs, and Oak Grove.

The California Riding and Hiking Trail is the only recognized non-motorized trail that crosses BLM lands within the Beauty Mountain Management Area. Most of the route parallels the Cooper-Cienega Truck Trail.

3.16.4 San Diego County Management Area

Of all the Management Areas BLM lands are most accessible in San Diego County. However, the small isolated parcels which are scattered across the county are mostly blocked by private land and are not accessible to the public. Most accessible is the Otay Mountain area and the lands along the border from Tecate, California east to Jacumba. Currently, BLM holds one easement across private property which includes a portion of the Otay Truck Trail along the west side of Otay Mountain.

A total of 17,670 acres are closed to motorized vehicle use. Motorized vehicle closures were established to protect sensitive species, wildlife habitat and resource values. Table 3-9 provides a list of the areas where vehicle access is limited to defined routes or closed to motorized vehicle use.

Demand for access onto BLM-administered lands is ever-increasing. The public are in pursuit of areas to engage in both motorized and non-motorized types of recreation. Most non-motorized recreational pursuits include hunting, hiking, target shooting, and horse riding. These activities require the use of motorized vehicles to access BLM lands. The pursuit of motorized activities includes trail riding and open riding with off-highway vehicles of various types. San Diego County is a fast growing market for off-highway vehicle ownership. These users are in the demand for open space and back-country trails that are within a half-hour to forty-five minutes from home. Due to high gas prices, users are more inclined to pursue riding areas that are accessible from their homes without having to trailer their sporting vehicles. This demand for riding areas is taking a toll on resources not only on BLM public lands, but also on surrounding National Wildlife Refuge lands and California Ecological Reserves and Wildlife Management Areas. Unauthorized off-highway vehicle activity is occurring within closed areas and off routes causing a proliferation of new trails and impacting wildlife habitat.

Designated in 1999, the Otay Mountain Wilderness is legislatively closed to motorized vehicle access. The two routes which access the mountain, Otay Truck Trail and the Minnewawa Truck Trail, are open to motorized vehicles.

National and regionally recognized non-motorized trails cross the Management Area. The Pacific Crest National Scenic Trail crosses 15 miles of BLM public land between the U.S.- Mexico border and the boundary of the Cleveland National Forest.

San Diego County is preparing to redefine the alignment of the California Riding and Hiking Trail. The County is proposing to cross a small portion of BLM land with realignment of the trail. This regionally known trail supports non-motorized recreational activities such as horse riding and hiking.

3.17 Lands and Realty

As provided by FLPMA, the BLM has the responsibility of planning for and managing public lands. Public lands, as defined by FLPMA, are lands and/or any interest in lands (e.g., mineral estate, reservations, etc.) that are owned by the United States and administered by the Secretary of the Interior, through the BLM. Public land ownership patterns (both surface and subsurface estate) vary within the South Coast Planning Area, from large, contiguous areas of land, to small, scattered parcels intermingled with other federal, state, private or Tribal lands. The list of public land parcels and legal descriptions is found in Appendix A-1 and are shown on maps 3-24 through 3-27.

Land and realty program objectives:

- Manage the public lands in support of goals and objectives of other resource programs,
- Respond to public requests and applications for land use authorizations, and
- Acquire administrative and public access where necessary to enhance resource management objectives of the BLM.

The Lands and Realty Management Program administers public lands within a framework of numerous laws and regulations. The most comprehensive of these is FLPMA, which, along with implementing regulations, enables BLM to accomplish a variety of land actions, including but not limited to sales, withdrawals, acquisitions, exchanges, leases, permits, easements, and rights-of-way. In 1988, FLPMA was amended by the Federal Land Exchange Facilitation Act (FLEFA, 102 Stat. 1087). FLEFA established uniform rules and regulations for appraisals, procedures, and guidelines for the resolution of appraisal disputes in the exchange process.

Other applicable laws and policies include:

- Mineral Leasing Act (MLA) of 1920 (30 U.S.C. 185) as amended: BLM issues ROWs for oil and natural gas pipelines and related facilities pursuant to Section 28 of the MLA.
- Recreation and Public Purposes (R&PP) Act as amended: The act of June 14, 1926, as amended, (43 U.S.C. 869 et seq.) is used primarily for providing land to fulfill the need for public services (parks, monuments, schools, community buildings, hospitals, sanitary landfills) due to urban expansion.
- Airport and Airway Improvement Act of 1982 (49 U.S.C. 2215): The act provides for the conveyance of BLM-administered lands to public agencies for use as airports and airways.
- Federal Highway Acts: Various Federal Highway Acts codified in 23 U.S.C., Sections 17 and 317 and the current Interagency Agreement also apply to lands and realty management.

- Federal Land Transaction and Facilitation Act (FLTFA [114 Stat. 613; 43 U.S.C. 2301 et seq.]) of July 25, 2000: The FLTFA amended FLPMA to allow retention by the BLM of receipts received from the sale of land or interests in land under Section 203 of FLPMA or conveyance of mineral interest under Section 209(b) of FLPMA, as long as the applicable land use plan was completed prior to July 25, 2000.
- The National Energy Policy Act of 2005 and Executive Order 13423, dated January 24, 2007 provides direction to federal agencies to take appropriate actions to expedite the review of energy related ROW projects, support renewable energy development on federal lands (including wind energy), and improve efficiencies in the processing of ROW applications.

3.17.1 Land Status and Jurisdiction

Public lands within the Planning Area consist primarily of five highly urbanized southern California counties (Los Angeles, Orange, San Bernardino, Riverside, and San Diego) with a population estimated at over 20 million. The planning area is the portion of the BLM's Palm Springs–South Coast Field Office which is outside of the California Desert Conservation Area (CDCA).

In addition to public lands, there are also other federally-managed lands within the planning area which includes:

- Four National Forests (approximately 1.8 million acres),
- Federal military reservations such as Camp Pendleton Marine Corps Base, Norton Air Force Base, Miramar Naval Air Station and March Air Force Reserve Base (approximately 185,000 acres),
- The San Clemente Island Naval reservation (approximately 37,000 acres),
- Indian reservations (160,000 acres), and
- Over 8,000 acres under the management of other federal agencies, such as the U.S. Army Corps of Engineers, the National Park Service.

Collectively the five counties within the planning area are experiencing a growth rate of over twelve percent, which has resulted in an increase in population from 16.8 million in 1990 to 21.1 million in 2007. Urban expansion is increasingly taking over remaining open spaces. BLM public land, in conjunction with land in the four national Forests, forms the basis for much of the remaining open space in the region.

The existing environment and the challenges for future management of the BLM public lands within this area are shaped by a multitude of needs related to the dynamic social and economic climate. Heavy demands are placed on resources for urban development, such as sand and gravel for construction, and land for community expansion, landfills, utility corridors, transportation corridors and communication systems. As urban expansion continues in southern California, there will be increasing demand for undeveloped land and the values associated with it.

3.17.2 Land Tenure Adjustment

Land Tenure (or land ownership) adjustment refers to those actions that result in the disposal of BLM lands or the acquisition of nonfederal lands or interests. Land tenure adjustments are often associated with accommodating public and private needs, community expansion, acquiring and protecting important resources, acquiring access to public lands, and consolidating public land. All land tenure adjustments must be in conformance with applicable land use plans and subject to valid existing rights.

Maps 3-24 through 3-27 illustrate parcel numbers of public lands.

3.17.2.1 Disposal

As mandated by Sec. 106 (a) (1) of FLPMA (43 USC 1701), public lands are retained in federal ownership except for those public lands that have future potential for disposal (i.e., sale and exchange).

BLM uses several authorities to make land tenure adjustments through disposal. Lands can be disposed of through sales; exchanges; state In Lieu selections; patents under the Recreation and Public Purposes Act (R&PP); or through Federal legislation.

There are two distinct disposal methods outlined in FLPMA, sale and exchange.

Land disposal by public sale is addressed in Section 203 of FLPMA. This section contains three criteria to apply in identifying public lands suitable for disposal by public sale. The criteria are that a) the tract of public land is difficult and uneconomical to manage as part of the public lands and is not suitable for management by another federal department or agency; b) the land is no longer required for a specific purpose; or c) disposal would serve important public objectives.

The criteria for determining which public lands or interests therein are available for disposal by exchange are covered in Section 206 of FLPMA. These criteria require BLM to consider the public interest by giving full consideration to better federal land management and the needs of state and local people. These include the need of lands for the economy, community expansion, recreation areas, food, fiber, minerals, and fish and wildlife. The criteria also require that the public objectives to be served must be greater on the lands to be acquired than on the lands to be conveyed.

The BLM may also dispose of lands under the following four authorities:

Desert Land Entry Act of 1877. No lands have been identified as meeting the criteria for entry under this authority; therefore, none are available for disposal under this authority.

Indian Allotment Act of 1887. No lands have been identified as meeting the criteria for entry under this authority; therefore, none are available for disposal under this authority.

1954 Revision of the Act of June 14, 1926 (R&PP) Act. This authorizes the lease and/or conveyance of BLM-administered lands for recreational or public purposes to

state and local governments and to qualified nonprofit organizations under specified conditions at less than the fair market value.

Airport and Airway Improvement Act of 1982. This act provides for the conveyance of BLM-administered lands to public agencies for use as airport and airways.

Public sales in the South Coast Planning Area are implemented per disposal criteria set forth in Section 203 of FLPMA or the Federal Land Transaction Facilitation Act (FLTFA). Lands suitable for sale must be identified as part of the land use planning process and are not sold for less than fair market value. Lands not identified for sale as part of this process would require a land use plan amendment before a sale could occur. To meet the criteria for disposal under FLTFA, public lands must have been identified for disposal through a management plan approved prior to July 25, 2000 when FLTFA became law.

Disposals were considered in the previous land use plan and lands available for disposal were identified. Approximately 50,495 acres of public land within the decision area have been disposed of through sales, exchanges, and R&PP patents since the adoption of the 1994 Resource Management Plan.

3.17.2.2 Acquisition

The BLM primarily acquires land in the South Coast Planning Area through Land and Water Conservation Fund (LWCF) monies appropriated by Congress, donation from interested land owners, and exchange. LWCF funds are generally targeted to specific projects, including the National Landscape Conservation System (NLCS), Areas of Critical Environmental Concern (ACEC) or Special Recreation Management Areas (SRMA), to purchase land and interests in land for open space and recreation. The LWCF program allows the BLM to purchase land needed to manage key natural resources, to acquire legal ownership of land to enhance the management of existing public land and resources, and to provide public access. Since the 1994 Plan, the BLM and its partners have acquired over 13,000 acres to support conservation efforts of local governments.

Land exchanges are initiated in direct response to public demand, or by BLM to acquire sensitive resources and/or improve management of the public lands. Exchanges are considered on a case-by-case basis, where the exchange is in the public interest and where acquisition of the non-Federal lands will contain equal or greater resource values.

3.17.3 Access (Easement) Acquisition

Public land cannot be effectively administered without legal and physical access. Access refers to the physical ability and legal right of the public, agency personnel, and authorized users to reach public lands. The lands and realty program primarily assists in the acquisition of easements to provide for legal access where other programs have identified a need. Access to the public lands within the Planning Area is an issue of concern to both agency personnel and the public. The existing fragmented ownership pattern of BLM lands intermingled with private, state, and other federal lands complicates the access situation.

Methods used to acquire legal rights that meet resource management needs include negotiated purchase, donation, and exchange. Acquisition alternatives include purchase of fee or less-than-fee interest above, on, and below the surface; perpetual exclusive easements; and permanent or temporary nonexclusive easements.

Acquisition of access rights supports one or more of these resources: lands, minerals, forestry, range, wildlife, recreation, and watershed. Acquisitions of road or trail easements are probably the most frequently encountered access needs. Such easements include:

- road easements
- scenic or conservation easements
- sign locations
- utility easements
- range improvements

Some progress has been made in improving access to public lands; however there are still areas within the planning area that lack legal access.

3.17.4 Land Use Authorizations

Land use authorizations in the South Coast Planning Area include right-of-way grants, leases, and temporary use permits.

3.17.4.1 Rights-of-Way

A right-of-way (ROW) is a permit or an easement that authorizes the use of lands for certain specified purposes, such as the construction of forest access roads or a gas pipeline.

ROW grants are issued under the authority of the Federal Land Policy and Management Act of 1976, as amended. The rights-of-way program within the Palm Springs–South Coast Field office is considerably active. All public lands in the South Coast Planning Area are made available for ROW designation, permits, and leases, with the exception of defined exclusion and avoidance areas.

Approximately 738 ROWs exist within the South Coast Planning Area, authorizing construction, operation and maintenance of power lines, telephone lines and fiber optic cables, irrigation and culinary water facilities and pipelines, mineral material sites, communication sites, ditches and canals, pipelines for mineral resources, roads, highways, and other similar uses.

These ROWs have been granted to various towns, cities, counties, individuals, companies, organizations, government agencies, and other entities. Whenever feasible, BLM encourages joint use and placement of new facilities in existing use areas that have already been disturbed, such as existing communication sites, roads, and highways.

3.17.4.2 Renewable Energy

For the South Coast Planning Area, renewable energy includes solar, wind, biomass, and geothermal resources. As demand has increased for clean and viable energy to power the nation, consideration of renewable energy sources available on public lands has come to the forefront of land management planning.

Demand for renewable energy development, particularly wind, is expected to increase in the future. The BLM has already received numerous inquiries for wind energy development within the South Coast Planning Area. One ROW has been issued in the Planning Area for wind energy site testing and monitoring. Future applications for testing and/or development would be processed in accordance with the policies and best management practices established by the *Final Programmatic Environmental Impact Statement on Wind Energy Development on BLM-Administered Lands in the Western United States* (2005).

Renewable energy potential on public lands was researched and presented in *Assessing the Potential for Renewable Energy on Public Lands* by BLM and U.S. Department of Energy. This assessment analyzed the potential for wind energy (and other renewable energy) development on public lands in the western United States. Criteria used in developing the model for wind energy potential consisted of the following:

- 1) Wind resource is wind power Class 4 and above for short term, Class 3 and above for long term.
- 2) Federal, state, and local policies support wind energy.
- 3) Transmission access is within 25 miles (69-345kV) and transmission capacity is available.
- 4) Site must be compatible with wind energy development; scenic area, view-sheds, and non-development regions must be eliminated.
- 5) Site must have access to roads within 50 miles.

To date, no inquires or applications regarding the development of solar energy have been submitted for public lands in the South Coast Planning Area. BLM's ability to issue authorizations for solar energy purposes is very limited due to lack of large open flat spaces, topography, vegetative cover, boulders, and/or excluded areas due to critical habitat.

3.17.4.3 Land Use Permits

Sec. 302 of FLPMA states that public lands may be offered for permit or lease to state, local, or private citizens for use, occupation, or development. For example, the BLM may permit agricultural development, residential use (only under certain limited conditions), commercial use, advertising, or National Guard use of public lands.

Permits are usually short-term authorizations that involve little or no land improvement, construction, or investment and shall not exceed three (3) years.

Leases are long-term authorizations that usually require a significant economic investment in the land. Permits and leases generally require the permittee or lessee to pay rent to the U.S. for the use of federal property.

3.17.4.4 Utility Corridors

Many utility lines traverse the South Coast Planning Area; however, no utility corridors are established in the Decision Area, due to the low percentage of BLM public land ownership. An energy corridor is a designation applied to identify federal lands where the construction, operation, or upgrade of one or more energy transport projects is preferred. As guided by the Federal Land Policy and Management Act of 1976, corridors assist in minimizing adverse impacts and the proliferation of separate rights-of-way (ROW). No construction, upgrade, or operation may occur without an authorized ROW and appropriate environmental review.

One utility corridor has been identified in the South Coast Planning Area in the *West-Wide Energy Corridor Final Programmatic Environmental Impact Statement (PEIS) and Record of Decision, 2008*. The corridor measures 15.9 miles in length, 1,000 feet in width and is designated for electric transmission purposes only (See Map 3-28). The transmission line transects both public and private lands. It is foreseeable that this corridor could serve as a proposed route for any major electric transmission project in the South Coast Planning Area, and will be fully utilized by industry, allowing for minimal potential ground disturbance (1,527 acres).

3.17.4.5 Communication Sites

Communication sites host communication equipment and facilities for various uses, such as television, radio, microwave, seismograph, cellular, and internet. There are four established communication sites within the decision area, (Sun City, Red Mountain, Otay Mountain) plus one additional site where only administrative (i.e., governmental) use is authorized (Tecate Peak). There is only one communication site management plan for the South Coast Planning Area. Demand for additional communication capabilities is expected, which may result in requests to establish new sites in the future.

Map 3-28 shows the location of currently authorized communication sites.

3.17.5 Realty Trespass

Realty trespass, specifically unauthorized occupancy and use, is not a significant problem in the Planning Area. Unauthorized occupancies are typically encroachments of buildings or yards onto public land and have usually existed for many years. These situations are most often discovered in the course of surveying projects. Unauthorized ROW situations generally involve negligence. Resolution of such situations depends upon individual circumstances and may include issuance of temporary land use permits, leases or ROWs, disposal of the land either by sale or exchange, or removal of the unauthorized use.

3.17.6 Public/Private Interface

Generally, the planning area does not have a public/private land interface problem. There are situations throughout the area where public and private lands intermingle and create property boundaries which do not conform to logical natural topographic features. This occasionally complicates management of such activities as prescribed burns, livestock grazing, access, and key wildlife habitat.

3.17.7 Withdrawals

Withdrawals are formal actions that set aside, withhold, or reserve federal land by statute or administrative order for public purposes. A withdrawal may remove areas from the public lands to be managed under the authority of another federal agency or department, although the land does not leave federal ownership. Withdrawals accomplish one or more of the following:

- Transfer total or partial jurisdiction of federal land between federal agencies;
- Close (segregate) federal land to operation of all or some of the public land laws and/or mineral laws;
- Dedicate federal land to a specific purpose.

Withdrawals are often used to preserve sensitive environmental values, protect major federal investments in facilities or other improvements, support national security, and provide for public health and safety. Withdrawals can also segregate a particular portion of public lands, suspend operation of the public land laws (withdrawn from settlement, sale, location, or entry), and prevent any disposal of public lands or resources involved in certain types of land use application. Withdrawals remain in effect until specifically revoked.

Withdrawal review is mandated by FLPMA, which requires the BLM to eliminate all unnecessary withdrawals and classifications. Before recommending a withdrawal continuation, alternatives such as right-of-way (ROWS) and interagency agreements must be analyzed. A complete list of Withdrawals and Classifications is found in Appendix A-4.

3.17.8 Landfills

Operating and closed landfills have the potential to cause environmental impacts to public lands, such as soil and water contamination. While there are no landfills on public lands in the Planning Area, the Julian Solid Waste Transfer Station was leased to the County of San Diego under authority of the Recreation and Public Purposes Act (R&PP). Prior to 1999, BLM leased the site to the County of San Diego for a public refuse disposal site. Refuse disposal consisted of burning trash in metal cages with the ashes compacted and covered with soil. When burning was outlawed, the County converted the site to a transfer station where all refuse was hauled to appropriate facilities. In 1999, the 40-acre site was patented to the County under the R&PP Act.

3.18 Public Health and Safety

3.18.1 Abandoned Mines

California has a long mining history and a legacy of abandoned mines. Currently there are approximately 100 abandoned or inactive mine openings in the Planning Area. These mining sites are located throughout the planning area, but the majority are located in the vicinity of Soledad Canyon, Steele Peak, Beauty Mountain, and Otay Mountain. Abandoned mine hazards include, but are not limited to, open shafts and adits, open pits and quarries, high and steep walls of pits and trenches, potential for the presence of explosives, the presence of contaminated air or gas in underground workings and the presence of unstable buildings or structures.

3.18.2 Hazardous Materials Management

Hazardous materials within the Planning Area consist of materials within municipal and informal dumping sites, and mining-related hazardous materials. Each is described in more detail below.

3.18.2.1 Landfills

Operating, closed, and informal landfills have the potential to cause environmental impacts to BLM-administered land. Chemical leachate from landfills has the potential to contaminate soil and reach surface water or groundwater. Local law enforcement is responsible for enforcing laws and regulations that prohibit illegal dumping in landfills found on lands that are not managed by BLM. The only known landfill near BLM-administered lands within the Planning Area is the Julian Solid Waste Transfer Station. See the description of the landfill in Section 3.17.8.

3.18.2.2 Mining and Milling Waste

Hazardous mining waste consists of mineralized waste rock, ore stockpiles, and mill tailings. Metallic minerals that occur in the rock have the potential to contaminate soil and water down gradient of the mining waste. Mill tailings may contain traces of metals as well as other chemical constituents, such as acids. Further, mine workings and mine dumps containing sulfide mineralization can create acid mine drainage when exposed to oxygen and water. The potential for this type of hazardous material occurs at abandoned mines on and adjacent to BLM-administered land. Abandoned mines and associated features and structures, if 50 years old or older, are considered potential historic resources and are subject to provisions of the NHPA and other heritage preservation mandates.

3.18.2.3 Hazardous Materials Dumping

Spills and dumping of hazardous materials on public lands can be a result of negligence or criminal activity. Hazardous materials often found on public lands in the planning area include such toxic chemicals as, cyanide, explosive compounds, dumping of chemicals

from illegal drug manufacturing or cultivation, burning of toxic materials, stripping and burning insulation from copper wire, paint or thinners from building construction, and oil or other fluids from motor equipment. Except for chemicals from illegal drug manufacturing, the Palm Springs–South Coast Field Office has not had significant problems with hazardous materials dumping. However, with over 300 parcels of public land in the planning area, and their proximity to the largest urban areas in the state, the potential for continued dumping and undiscovered sites should be considered.

Also to be considered is the threat of oil spills off the coast that could threaten the rocks and islands within 12 miles of the coast that are part of the California Coastal National Monument.

3.18.2.4 Illegal Drug Manufacturing and Marijuana Cultivation

Illegal drug manufacturing and marijuana gardens on public lands have become an increasing concern in the planning area.

Abandoned methamphetamine, or “meth,” labs have been a chronic problem and can include the following hazardous materials:

- Anhydrous ammonia stored in 20 pound propane tanks, coolers or thermos bottles. The presence of anhydrous in propane tanks is indicated by bluish-green coloring of brass tank valves.
- Common cold pills or diet pills containing ephedrine or pseudoephedrine.
- Muriatic acid (swimming pool, well, concrete, and stone cleaner/etcher).
- Alcohol or methanol (“Heet” brand gasoline additive or rubbing alcohol).
- Iodine crystals or liquid Sodium hydroxide.
- Sulfuric and hydrochloric acid (“Red Devil” lye and other drain cleaners).
- Red phosphorus (match books or sticks).
- Ether (engine starting fluid)
- Solvents such as Acetone, Benzene, Toluene, Methyl Ethyl Ketone, or Xylene.
- Disassembled lithium batteries.

Marijuana gardens have increased on public lands and can often be linked to domestic or foreign criminal gangs or drug cartels. Armed guards, “booby traps”, guard dogs, and other threats to visitors have been encountered. Threats also include the abandoned chemicals (pesticides / herbicides) used in illegal growing of marijuana on public lands.

There may be hundreds of sites used for both meth labs and marijuana growing in the planning area. Historic clandestine drug labs, drug waste dump sites, and marijuana gardens have been found near Steele Peak, Lake Matthews, Mead Valley, Beauty Mountain, and near the communities of Canyon Lake, Anza, Fallbrook, Perris, and Ramona.

3.18.3 Border Management

The San Diego County Management Area has extensive issues along the International Border with Mexico, including illegal immigration, cross-border fires, and overgrazing from trespass livestock (cows and horses). Some of the highest activity for undocumented immigrant (UDI) traffic in San Diego County is across public lands. These lands also have the largest amounts of threatened and endangered species and are highly sensitive. The areas which experience the highest amount of illegal immigration traffic include Otay Mountain Wilderness, the Hauser Mountain Wilderness Study Area, and the Kuchamaa and Cedar Canyon ACECs.

Traffic from UDIs has created a major impact on the public lands from the proliferation of foot trails; build up of trash and human waste; and wildland fire ignitions from unattended warming and cooking fires. Criminal activity is also increasing along the border in the form of drug and human trafficking. This criminal activity and bio waste from UDI traffic poses an ever increasing threat to the public land user.

The Department of Homeland Security, Customs and Border Protection (DHS-CBP), Border Patrol San Diego Sector operates several field stations within the San Diego County Management Area. Patrol Agents from these stations maintain 24 hour surveillance of the border utilizing foot and vehicle patrols, aircraft, and remote sensing devices. The Border Patrol relies on the public lands to support their daily surveillance and patrol operations. In addition, Border Patrol has relied on the BLM lands to support their infrastructure needs, including fence and road construction, road maintenance, and communication site construction.

The South Coast Resource Management Plan contains several proposed decisions or management actions that specifically address border issues as they relate to operations or cooperative management with the Border Patrol. These are found primarily in the sections on Special Designations, OHV Areas, and Travel Management. It is BLM policy to cooperate with DHS-CBP and to facilitate the operations and mission objectives of DHS-CBP.

3.18.4 Unexploded Ordnance

The potential for unexploded ordnance in most of the planning area is fairly low. However, the potential increases within San Diego County given the military history in the region. Former Camp Lockett, located in Campo, was established to protect the United States-Mexico border and during World War II was used as a troop training area. Two BLM parcels located within the former camp boundary were part of munitions training ranges. In 2007 the Army Corps of Engineers performed an investigation of Former Camp Lockett to evaluate the evidence for the presence of munitions and explosives of concern, munitions debris, and munitions constituents. To accomplish the evaluation, a qualitative reconnaissance and sampling were performed on BLM lands located within the camp boundary. The review found some small arms, artillery, and grenade fragments in portions of the Former Camp Lockett. However, the review team recommended that immediate removal action was not warranted at that time.

3.19 Social and Economic Values

The BLM-administered lands in the South Coast Planning Area (Planning Area) are distributed across the cismontane areas in Los Angeles, San Bernardino, Riverside and San Diego Counties. While the Planning Area contains large urban centers like Los Angeles and San Diego, BLM lands are located primarily several miles east of the coastline in relatively rugged rural areas with a low population density.

3.19.1 Social / Cultural / Economic History

3.19.1.1 Spanish Period

The economic history of the Planning Area begins with the Spanish explorers of the 16th century. Alarcon and Diaz visited the lower Colorado River, some 90 miles east of the southern part of the Planning Area in 1540. Cabrillo sailed into San Diego Bay in 1542. Oñate, governor of New Mexico, visited the lower Colorado River in 1605. However, it was not until 1769 and the founding of the Franciscan mission and the Spanish military *presidio* at what is now known as Old Town, San Diego, that the region had permanent European settlement (Forbes 1965; Pourade 1960). The lack of a dependable water supply made growing crops there difficult, and the mission was moved up Mission Valley six miles to its present location in 1774. Padre Dam was constructed upstream some six miles from the new mission in 1815 or 1816. A *zanja* or aqueduct was built to bring water to the new mission and associated fields. Padre Dam and the *zanja* were the first of a continuous stream of water projects in California that continues to this day (Pourade 1961:120).

Four other missions in the Planning Area followed the founding of San Diego. Mission San Gabriel Archangel, located east of Los Angeles, was founded in 1771. San Juan Capistrano followed in 1776. Mission San Fernando Rey de España was founded in 1797. The last mission in the Planning Area was San Luis Rey de Francia, northwest of the city of Oceanside, founded in 1798 (Pourade 1961:120; Rolle 1998:39). Nuestra Señora la Reina de los Angeles de Porciuncula, founded in 1781, was the only official Spanish *pueblo* in the Planning Area. It became known as Los Angeles. Unofficial *pueblos* quickly formed around missions and *presidios*, such as Old Town San Diego. Spanish missions, *presidios*, official *pueblos* and other settlements were all located near the coast. The mission San Fernando, located about 18 miles north of today's Santa Monica, and Mission San Gabriel, located some 22 miles northeast of Santa Monica, are the most inland Spanish missions in the Planning Area.

The mission economy was based on small-scale agriculture and large-scale cattle ranching. Most missions established ranches and *asistencias* or mission churches over a wide area. For example, the Mission San Gabriel established a rancho and *asistencia* at San Bernardino in 1819. Missions were more or less self-sufficient, feudal institutions. They made essentially all of the items necessary for their existence, from food and wine to soap, leather, and fabrics.

All mission enterprises functioned by means of more or less forced Indian labor. The Spanish military often went on forays into inland areas to round up new “converts” and fugitives from the missions. The inland mountains of the Planning Area are typical of the places where coastal Indians sought refuge from the Spanish, whose settlements were near the coast. The native economy intensified in these backcountry areas with a greater emphasis on acorn processing, while Indian society on the coast crumbled (True 1970:56).

The various Spanish governors of Alta California were empowered by the Crown to grant ranchos to retired army personnel and other well connected men. However, less than 30 rancho grants were made during the Spanish Period. The missions, the *ranchos*, and the San Diego *presidio* controlled vast areas for pasturing their cattle and horses. These were herded by Indian *vaqueros* or cowboys (Rolle 1998:56 -57).

3.19.1.2 Mexican Period

In 1821, Mexico, including Alta California, gained independence from Spain. In 1834, the missions were secularized or disbanded by the Mexican government, and vast tracts of former mission lands became available for private ownership. The Mexican government was much more open to economic development, and there was a relative boom in the cattle business as hundreds of additional large ranchos were granted to influential *Californios*. However, there was a very limited market for meat, so cattle were butchered for their hides and tallow. These were traded to Yankee trading ships who regularly supplied Alta California with U.S. manufactured goods. This hide and tallow trade began in the early 1800s despite a Spanish ban on foreign trade. During the Spanish and Mexican periods, some sailors and skippers chose to settle in Alta California, and many became *rancheros* or merchants.

Native American communities continued to decline from foreign diseases and a low birth rate, particularly those close to the coast. However, some Indians continued to work as *vaqueros*, laborers, gardeners, and housekeepers and, after the Mission Period, many were paid modest wages (Pourade 1961; Rolle 1998:57). Soon after secularization, numerous *ranchos* were established along the southern California coastal strip, and by 1840 Los Angeles had become the largest settlement in the area. With its focus on the hide and tallow trade, southern California became known to the Yankee sailors as the Cow Counties, and a cow hide was known as a California Banknote (Rolle 1998: 56-57).

While California is today casually called the Golden State in reference to the Gold Rush of 1849, gold was occasionally reported from southern California as early as 1816. In 1842, there was a minor gold rush, set off by Francisco Lopez, *majordomo* of Rancho San Fernando. Lopez found placer gold in San Feliciano Canyon some 35 miles north-east of the Pueblo de Los Angeles. Many men from the Los Angeles Region and as far away as Sonora struck out for the gold camps.

After years of tensions between the Mexican government and Anglo-American Texans, Texas was annexed by the United States in February 1846, which ended the Republic of Texas and triggered the Mexican-American War (Texas State Historical Association

2004). American immigrants in northern California revolted against the Alta California Mexican Government and declared an independent California Republic. Called by some the Bear Flag Rebellion, a facsimile of the flag of the California Republic lives on as the California State Flag. The Republic itself ended only three weeks later when U.S. naval forces took Monterey on July 7, 1846. The war ended with the Treaty of Guadalupe Hidalgo, signed on February 2, 1848.

3.19.1.3 American Period

The treaty of Guadalupe Hidalgo gave Alta California and New Mexico (including the current states of Arizona, Colorado, Nevada, and Utah) to the United States. The treaty guaranteed citizenship to former Mexican citizens, if they chose to stay in the new lands, with the U.S. promising to respect their property. The new American government of California ignored these provisions, and legal disputes plagued the state for a half century. Indians had been granted Mexican citizenship in 1821, but the Americans also disregarded their legal claim to citizenship or to property. The subsequent California constitution barred Indians from voting, serving on juries, and testifying in court against Whites (Phillips 1996:60-61). American Indians and women of all ethnicities were finally granted citizenship with the passage of the Citizenship Act of 1924; however, Indians still could not vote in local elections. Indians finally got the right to vote in local elections and full citizenship in 1952 (Kumeyaay.com 2006).

Gold Rush. On January 24, 1848, just before the Treaty of Guadalupe Hidalgo was signed, gold was discovered at Sutter's Fort on the American River in the central Sierra Nevada foothills. However, it was kept secret until an account was published in San Francisco on March 15. The subsequent Gold Rush initially consisted of a great influx of Americans and Europeans into the central Sierra Nevada. Soon this immigrant tide engulfed many of the Spanish and Mexican cultural traditions and eliminated many remaining vestiges of Native American culture.

However, in the southern counties, there was a drop in population as people rushed to the Mother Lode in the north. The region remained a cattle-raising area and was slow to attract additional population. However, cattle that were worth about \$2 for their hides and tallow in 1848 were worth as much as \$500 per head in the Mother Lode during the early days of the Gold Rush. Major cattle drives were undertaken from the Cow Counties to the Mother Lode. These were the forerunners of the better-known Texas cattle drives of the post-Civil War era. By 1853, Texans were also driving cattle 1,500 miles to southern California and on to Sacramento (Pourade 1963:192). The Cow Counties thrived handsomely for several years after the Gold Rush on the basis of these cattle drives to northern California (Pourade 1963:193).

During the Gold Rush and for years later, transportation to California was slow and difficult. There were two choices: 1) by sailing ship around the Horn, to Panama and continuing by wagon across to the Pacific, where another ship was taken north to San Francisco; or 2) by wagon train across the Great Plains, the Rocky Mountains, the Great Basin, and the Sierra Nevada. Mail and freight service "back to the states" was non-existent or nearly so. Congress finally addressed this in 1856 when it granted its first overland mail contract. It was won by James E. Birch, owner of a large network of

stage lines in California. Birch's San Antonio–San Diego Mail Line began to make monthly mail and passenger trips linking those two towns in 1857. His route led north along what is now Highway S2 in eastern San Diego County. Southeast of the town of Julian, the Birch line turned west up the steep Oriflamme Canyon and over the Cuyamaca Mountains to San Diego.

In 1860, southern California saw another modest gold rush based on the chance discoveries of Bill Holcomb, while out bear hunting. Located about three miles north of Big Bear Lake, the strike at Holcomb Valley quickly drew a large influx of would-be miners. It was soon the most populous area of San Bernardino County and almost became the county seat. The Holcomb Valley gold rush was based on thin placer deposits that were soon exhausted, and in a couple of years the population moved on.

Transportation. The Butterfield Overland Stage began a weekly operation to Los Angeles and San Francisco in 1858. Bypassing San Diego, the Butterfield line went through eastern San Diego County along Highway S2 east of the Planning Area. Then it passed through Warner Springs, Temecula, Chino, El Monte, Los Angeles, Mission San Fernando, and Tehachapi on its way to San Francisco. The Civil War ended the use of this southern route in 1861. In 1869, the first transcontinental railroad linked California to the east. The line began in Sacramento and crossed the formidable Sierra Nevada Range by way of Truckee, along the north shore of Lake Tahoe (known as Lake Bigler in those days). Overland stages gradually passed from the scene, but short haul stages and freight lines continued to be vital to rural areas of California until the advent of motorcars and trucks in the early 20th century.

Rail service in the Los Angeles Basin also began in 1869 with a 21-mile link between San Pedro and Los Angeles. In 1876, the Central Pacific's tracks reached Los Angeles by way of the famous Tehachapi Loop, providing a connection with northern California and indirectly with the East. Southern California obtained a direct rail link with the East in 1885, when the Santa Fe Railway reached Los Angeles by way of San Bernardino, Barstow, and Needles. This rail link was a great stimulus to the southern California economy and precipitated a housing boom in the Los Angeles area (L.A. County Online 2008).

Also in 1885, the Santa Fe Railway opened service to San Diego from San Bernardino, which connected extreme southern California with national markets. The San Diego economy accelerated greatly for a few years as a result. In 1919, the San Diego – Arizona Railway opened after many years of financial and technical struggle. The line proceeded through the southern Planning Area at Campo, east through Corrizo Gorge and on to El Centro. This offered a direct line to the East by connecting with the Southern Pacific line linking Los Angeles with Yuma (Dodge 2004). In the 1920s and 30s, the popularity of the automobile pressured county and state governments to provide better roads, and many southern California highways were graded and paved in this period. This opened up the Planning Area to visitors and started tourism business (L.A. County Online 2008).

Mormon Settlement. In 1851, a Mormon wagon train from Salt Lake City arrived in the eastern Los Angeles Basin. The Mormons laid out the town of San Bernardino and soon

established farms in the area. They also began small-scale logging and sawmill operations in the San Bernardino Mountains centered on Little Bear Valley, or what is today called Lake Arrowhead. Rapid growth of Los Angeles and San Bernardino created a strong demand for lumber, and operations gradually expanded. By the 1860s, the lumber industry was an important economic factor in the area.

The Civil War. On April 12, 1861, the American Civil War began, when Confederate forces attacked Fort Sumter in South Carolina. There were slightly more southern sympathizers than Union supporters in southern California, while northern California was strongly Union. In 1862, after the secession of the slave states, Lincoln signed the Homestead Act. Under this act, a homesteader had only to be the head of a household and at least 21 years of age to claim a 160-acre parcel of land. The program was managed by the General Land Office, forerunner of the BLM. However, settlement of the relatively arid southern California backcountry continued to be slow, and the economy was based primarily on farming and ranching.

The Emancipation Proclamation, freeing the slaves, also took place in 1862. California had been admitted to the Union as a free state, but that designation was of little significance in California. Slavery had been illegal in California since 1811, when Spain outlawed slavery at home and in all colonies except Cuba, Puerto Rico, and Santo Domingo. In 1829, the new Republic of Mexico, which at the time included Alta California, also abolished slavery. The American Civil War ended in 1865. Little of consequence to the outcome of the Civil War took place in southern California.

Border Issues. In the late 19th century, the Indian population continued to decline in southern California, sometimes helped along by attacks by miners or ranchers. One such incident took place near the southern part of the Planning Area in 1870. Called the Jacumba Massacre, it occurred when ranchers killed 10 to 15 Indians over some missing cattle. Crime was a problem along the Mexican Border in the late 19th century. Both American and Mexican bandits and rustlers worked the area and retreated across the border when advantageous. A famous example was a gun battle that took place in Campo between store owners Lumen and Silas Gaskill and a band of Mexican *banditos* and rustlers in 1875 (Kimball 2008). The border area continues to have considerable amount of lawlessness, but now it is about smuggling people and drugs. The U.S. Border Patrol is a major presence all along the southern portion of the Planning Area, and this has contributed to the border economy in a minor way.

Water Availability. The availability of water had been a concern in southern California since the establishment of the missions. It became an obstacle to further development in the late 19th century, as the population outstripped local supplies. In response, private companies and cities erected dams on local southern California rivers. This in turn stimulated additional agriculture, urban development, and additional pressure on water supplies.

In the early 1900s much of the responsibility for water availability was given to William Mulholland, an Irish immigrant and energetic, self-educated engineer, who became head of the Los Angeles Department of Water and Power (LADWP). Mulholland designed the Los Angeles Aqueduct to bring water to Los Angeles from Owens Valley,

some 200 miles north along the eastern slope of the Sierra Nevada. Agents of the LADWP began secretly buying up farms and water rights in Owens Valley, and in 1905 work on the Los Angeles Aqueduct began. It was met with some armed resistance by Owens Valley farmers, but was successfully completed in 1913. While it assured continued growth in the Los Angeles area, the aqueduct also destroyed the agricultural base of the communities in Owens Valley and drained Owens Lake. The latter created long-term health and environmental problems that have yet to be resolved. The water from Owens Valley was stored behind the Saint Francis Dam in Santa Clarita Valley, some 40 miles northwest of Los Angeles. It also had been designed by Mulholland and was built by LADWP between 1924 and 1926. In 1928, the dam failed causing a huge flood that killed approximately 600 people. Only the San Francisco Earthquake of 1906 killed more Californians. A second Los Angeles Aqueduct was added to increase capacity in 1970. It runs more or less parallel to the first from Haiwee Reservoir some 140 miles south to Los Angeles (L.A. County Online 2008; Nadeau 1997).

In the early 1900s, there was considerable interest in taming the mighty Colorado River to make it practical to farm adjacent lands in the U.S. and Mexico, and to provide hydroelectric power and water for suburban development in Nevada, Arizona, and southern California. Political posturing and controversy swirled around various proposals to divide up the water for decades.

The first major water project on the lower Colorado River was a plan to irrigate what is now known as Imperial Valley. In 1901, the California Development Company dug the Imperial Canal from the Colorado River, largely along the often dry Alamo River channel in Mexico, to the Imperial Valley near Mexicali. The river carried a huge load of sand and silt, and in 1904 the headgate was moved and enlarged to bypass a silted-up portion of the canal. Floodwaters the following spring blew out the new headgate in 1905, and the entire flow of the Colorado flowed into the Imperial Valley threatening the numerous farms and communities in the area. What is known as the Salton Sea was created at this time. After a long and expensive struggle, largely underwritten by the Southern Pacific Railroad, the river was put back in its original bed in 1907. Today, the Salton Sea is maintained by agricultural runoff. This flood buttressed arguments by developers and farmers that the river needed a series of dams to provide for flood control, water storage, and hydro-electrical power (Nadeau 1997).

In 1931, construction began on what was then called Boulder Dam with the strong support and interest of President Herbert Hoover. The dam was completed under Franklin Delano Roosevelt in 1935 and named in honor of Hoover. It was an unprecedented accomplishment and remains today the tallest concrete dam in the Western Hemisphere. Hoover Dam was the first of many Bureau of Reclamation projects on the Colorado River. It provides clean, hydro-electric power to southern California and Nevada (L.A. County Online 2008; Nadeau 1997).

In 1927, the Metropolitan Water District (MWD) was chartered by the state of California to provide water to a number of cities in southern California. San Diego did not join at that time despite ongoing water access problems. Between 1934 and 1938, Parker Dam was built by the Bureau of Reclamation and MWD. It was built on the sandy Colorado River bed, requiring very deep footings which gave it the distinction of being one of the

deepest dams in the world. A 45-mile-long water storage reservoir called Lake Havasu was formed behind the Parker Dam. The primary purpose was to provide water for the Central Arizona Project aqueducts and for the MWD's Colorado River Aqueduct. The latter delivers water across the Mojave Desert to the Los Angeles Basin and to San Diego. It was completed in 1941 (L.A. County Online 2008; Nadeau 1997; Sholders 2002).

San Diego County Water Authority (SDCWA) was organized on June 9, 1944 as a public agency to manage the importation of Colorado River water to San Diego (Sholders 2002). In 1946, San Diego belatedly joined the MWD, assuring supplies of Colorado River water for future growth (Sholders 2002). The SDCWA, MWD, and the Navy built the first aqueduct for importing Colorado River water, and water from the river first arrived in San Diego County in November 1947. Today, San Diego County derives as much as 95 percent of its water supplies from the Colorado River (Sholders 2002).

Virtually none of the water imported into southern California goes directly to BLM lands in the Planning Area, because there is no infrastructure to convey it. However, nearby businesses and residents benefit in indirect ways, as the increase in population and commerce in southern California supported by these water resources translates into increased visitation and economic activity in the Planning Area.

Oil. The first commercial development of petroleum in southern California dates back to 1850, with a discovery in Pico Canyon near San Fernando. However, the oil industry didn't become economically important here until the 1890s when Edward L. Doheny discovered oil in what is now downtown Los Angeles. Los Angeles had hundreds of oil derricks in the late 19th and early 20th century. There were also oil discoveries in numerous other places in the Los Angeles Basin, with the largest in Huntington Beach in 1920, and Santa Fe Springs and Signal Hill in 1921. Oil extraction and refining continue to be an important economic activity in the area and in Kern County to the north (L.A. County Online 2008).

Wildfire. Prior to the arrival of the Spanish, the Indians of southern California more or less systematically burned the coastal area to increase the growth of grasses, one of their major dietary staples. With the advent of the missions and the Spanish military Indian culture was suppressed, and systematic burning ceased (Bean and Lawton 1993). Some southern California ranchers in the late 19th century intentionally burned off chaparral areas, also to increase the growth of grasses and to reduce the fuel load. By the 1870s and 1880s, there were increasing concerns about wildfires and watershed protection in the southern California mountains. In response, President Theodore Roosevelt expanded the southern California Forest Reserves in 1908. Forest Reserves were originally administered by the General Land Office. In 1905, they were transferred to the Department of Agriculture. In 1907, Forest Reserves were changed to National Forests under the Department of Agriculture (Cleveland National Forest 2005).

Beginning at about that time, wildfire suppression became a universal goal of local, state and federal agencies, and ranch range burning was discouraged or disallowed. Improvements in equipment (e.g., bulldozers and aerial water tankers) led to some fire suppression success in the late 20th century. However, this led to very significant

increases in the fuel load in the foothills and mountains of southern California. By the early 21st century, catastrophic wildfires erupted in southern California on an annual basis. A cycle of burning and rebuilding in southern California backcountry areas has developed. This has caused a significant transfer of wealth from nationwide fire insurance corporations to the southern California construction industry.

As agencies all over the West adapt to the new fuel management model of wildfires, the BLM is undertaking numerous fuel management projects in the Planning Area. At the same time, CAL FIRE and local agencies are beefing up their fire suppression capabilities. It is likely that wildfire management will be a source of considerable economic activity for the foreseeable future in southern California.

Agriculture. In the early 1900s, cattle ranching continued a gradual decline from its high point in the 1860s, while agriculture continued to gain economic importance, particularly in the San Fernando Valley, Orange County, and San Diego County. These became areas of wheat fields, row crops, and fruit trees. By the 1920s, fruit, especially oranges and lemons, were very important crops in Orange County and San Fernando Valley. The latter had four packing houses with annual shipments of nearly 500 rail cars of oranges and lemons (L.A. County Online 2008). The Sylmar area was at the time one of the world's largest olive and olive oil producers. The Los Angeles Basin also had numerous dairies, including the world's largest Guernsey herd in the 1920s. The area also boasted numerous canneries for fruits and vegetables. Agricultural production gradually declined during the 1930s and 40s, and agricultural lands were absorbed by suburban residential developments in the post-World War II era (L.A. County Online 2008).

Motion Picture Industry. In 1911, the first motion picture studio in southern California was opened at Sunset Boulevard and Gower Street in Hollywood. The industry's high water mark in terms of number of pictures produced was the 1930s, when an average of 750 feature films per year was produced. Production slowed during WWII, and the advent of television in the 1950s further reduced feature film production to an average of 300 per year. By the 1970s, the impact of television on film declined and stabilized. Today, Los Angeles and Hollywood are widely recognized as leaders in the entertainment industry. While the industry is very important to the economy of the Los Angeles area, it has little direct impact in the Planning Area.

Aviation. The World War I era saw the development of many of southern California's naval and air facilities. In 1925, Claude Ryan and Benjamin Mahoney began what may be the first regularly scheduled airline operation in the U.S., between San Diego and Los Angeles. In 1927, Charles Lindbergh's Spirit of Saint Louis was built at Ryan Aircraft in San Diego (Tekulsky 2006). In the run-up to World War II, southern California became a center for commercial and military aircraft production. Industry leaders included Consolidated Aircraft of San Diego, Douglas Aircraft of Santa Monica and Long Beach, Hughes of Culver City, Lockheed of Burbank, Northrup of Hawthorne, North American of Inglewood, and Vultee of Downey (Acepilots 2008). In the post WWII period, commercial and military aircraft production gradually declined and the industry consolidated. Today, none of these aircraft companies are based in southern California,

although the Los Angeles and San Diego areas are still home to many minor aircraft manufacturing companies.

Recreation. As the population of southern California expanded in the post-World War II era, tourism and recreation became important economic activities in rural southern California, while agriculture and livestock industries declined. Retirees and others who derive most of their income from elsewhere moved into rural areas to enjoy a more relaxed, country lifestyle. The people who currently live near BLM lands in the Planning Area on a full-time basis lead many different lifestyles and belong to varied occupational and values-based sub-cultures. Many are middle-class or upper middle-class who live on *ranchitas* of a few acres. Many commute to well-paying jobs in metropolitan areas. Their lifestyle might be characterized as rural vocational. Some raise gardens and small numbers of horses and/or cattle as part of the rural lifestyle. There are also considerable numbers of retired people living near BLM lands in the Planning Area whose circumstances vary from well-off to impoverished.

Habitat Conservation. The history of habitat management in southern California is relatively recent, spurred by dramatic population growth in the post-Second World War period. Over the last 60 years or so, this suburban expansion has substantially reduced the once extensive areas of wilderness and natural habitat of Southern California. Since southern California is also among the richest areas of biodiversity in the United States, this has resulted in more federal and state listings of threatened or endangered species than any other region of the country. It has been challenging for local, state, and federal agencies to balance residential and commercial development needs with habitat preservation in southern California.

The State of California began to address this issue in 1991 through the passage of the Natural Communities Conservation Program (NCCP), a cooperative effort to protect habitats and species. The primary objective of the NCCP program is to conserve natural communities at the ecosystem scale while accommodating compatible land use. This much-fragmented habitat is scattered over more than 6,000 square miles largely in Orange, San Diego, and Riverside Counties with smaller areas in Los Angeles and San Bernardino Counties. The BLM and 58 other governmental agencies at all levels actively participate in the program along with scores of landowners and representatives of the environmental community.

Also in 1991, the California Biodiversity Council was formed, comprising the BLM and more than two dozen other federal and state natural resources agencies, the University of California, county boards of supervisors, and resource conservation districts. This is an agreement to foster regional efforts to promote biodiversity conservation across administrative boundaries. To further these goals, the BLM signed a Memorandum of Understanding in 1994 with the City and County of San Diego, the San Diego Association of Governments, the California Department of Fish and Game, and the U.S. Fish and Wildlife Service for cooperation in habitat conservation and planning in San Diego County.

To allow for continued suburban growth, and meet the objectives of the NCCP, several counties and cities have developed large-scale multiple species habitat conservation

plans (HCPs) that meet the Section 10 requirements of the Endangered Species Act (ESA). BLM lands in the Planning Area are critical to the maintenance and success of the HCPs in southern California. The best known example is the San Diego Multiple Species Conservation Program (MSCP) signed in 1997. It covers over 80 species and is intended to preserve over 170,000 acres of habitat. The BLM has acquired over 6,000 acres of sensitive habitat in support of the San Diego MSCP. The BLM is also an active participant in several other HCPs within the Planning Area, including the *Stephens' Kangaroo Rat Habitat Conservation Plan*, *Western Riverside County Multi-Species Habitat Conservation Plan*, and *Upper Santa Ana River Habitat Conservation Plan*.

Congress passed the Wilderness Act in 1964. Under this act, wilderness is generally managed to preserve the area in its natural state, to keep it undeveloped and untrammelled by human actions, and to provide opportunities for solitude and primitive forms of recreation. Wilderness management goals are also consistent with habitat preservation. The Planning Area contains three designated wilderness areas. The Otay Mountain Wilderness (16,895 acres) was designated in 1999. The Agua Tibia Wilderness (538 acres) and the Beauty Mountain Wilderness (15,628 acres) were designated in 2009. The BLM also manages two Wilderness Study Areas (WSAs) within the Planning Area under the Federal Land Policy and Management Act of 1976 (FLPMA). These are the Hauser Mountain WSA and the Beauty Mountain WSA. These total approximately 8,905 acres.

The same act (FLPMA) also provided for the establishment of Areas of Critical Environmental Concern (ACECs). These are areas where special management attention is required to protect and preserve important historic, cultural, or scenic values; fish and wildlife resources; or other natural systems or processes; or to protect life and safety from natural hazards. Within the Planning Area, there are eight designated ACECs.

3.19.2 Demographic and Socioeconomic Characteristics

As previously described, the South Coast Planning Area includes most of Los Angeles County, all of Orange County, the southwestern portion of San Bernardino County, and the western half of Riverside and San Diego Counties. This section describes the demographic and socioeconomic characteristics of the residents of the five-county South Coast Planning Area. The five counties of Los Angeles, San Bernardino, Riverside, Orange, and San Diego make up a large land area encompassing 23.4 million acres. More than 95 percent of the total population and employment in these five counties is located within the boundaries of the South Coast Planning Area (see Map 3-3).

Within the 8,890,000-acre South Coast Planning Area, the BLM has about 300,000 acres under its management including 133,000 surface acres and an additional 169,000 sub-surface acres of mineral estate. Therefore, the total acreage under BLM's control represents about 3 percent of the South Coast Planning Area.

3.19.2.1 Demographic Characteristics

Much of the demographic data presented in this report was derived from the 2006 American Community Survey, produced by the U.S. Census Bureau. All five counties listed above were used for determining the demographic profiles. Current 2006 demographic estimates and projections for 2030 were also reported for selected characteristics (i.e., population, housing units, and employment) based on data collected from the San Diego Association of Governments (SANDAG), the Southern California Association of Governments (SCAG), the California Employment Development Department (EDD), and the U.S. Census Bureau. The decision to use 2006 demographic and socioeconomic data was also based on the desire for consistency with the industry sales and employment data used for the regional input-output models. Table 3-10 lists selected demographic data for the five-county South Coast Planning Area, and to provide perspective, the data are also listed for California and the U.S.

Population. There were 19.9 million residents of the Planning Area in 2006, representing about 55 percent of the 36.5 million people in California and almost seven percent of the 299.4 million residents in the U.S. (Table 3-10). Overall, the 2006 population of Los Angeles County with about 9.5 million residents represented about half of the population of the Planning Area. However, the smallest counties of Riverside and San Bernardino with about 2.0 million residents each have experienced very fast population growth since the 2000 U.S. Census. The population of Riverside jumped 31 percent, and San Bernardino grew 17 percent, compared to about five percent growth in population for Los Angeles, Orange, and San Diego Counties over the 2000-2006 six-year period.

Population Forecast. The population of the South Coast Planning Area is expected to grow to 27.3 million by 2030, a 37 percent increase. A similar growth rate is expected for the state, with the population of California growing to 49 million (+35%), while the U.S. population will grow at a slower rate to almost 364 million (+21%). Within the Planning Area expected growth rates for the Counties of Riverside (+75%) and San Bernardino (+71%) are more than double the statewide rate. In contrast, it is expected that the Counties of Orange, Los Angeles, and San Diego will experience slower population growth of 25 to 31 percent by the year 2030.

Gender and Age. The male-female gender ratio for the Planning Area is very close to fifty-fifty. This near-fifty-fifty ratio is very similar for the state, the U.S., and across the individual counties. The median age of residents of the Planning Area in 2006 was 33.4 years, just a little younger than the statewide median of 34.4 years. In contrast, the median age of the U.S. population was a little older at 36.4 years. Within the Planning Area the residents of the Counties of San Bernardino and Riverside are significantly younger with a median age of 30.3 years and 31.8 years, respectively. Only Orange County recorded a median age above the statewide median (35.3 years v. 34.4 years).

Household Income and Poverty. The median household income for the Planning Area was \$56,115 in 2006, almost \$8,000 higher than the national median income of \$48,451. The Planning Area median income was very similar to the state of California median income of \$56,645. However, the median income for Orange County (\$70,232) was

substantially higher than the balance of the South Coast region, while the lowest median income was reported for Los Angeles County (\$51,315). The proportion of families below the poverty level in the South Coast Planning Area was 13.5 percent and about equal to the poverty level for the state (13.1%) and for the nation (13.3%). Within the Planning Area, the poverty level was substantially lower in Orange County (9.7%) compared to Los Angeles County (15.4%).

**Table 3-10
Demographic Profile of the South Coast Planning Area v. California and the U.S.**

Characteristic	South Coast Planning Area Counties					Total South Coast Planning Area	California	United States
	Los Angeles	Orange	Riverside	San Bernardino	San Diego			
Total Population								
2000 U.S. Census	9,519,338	2,846,289	1,545,387	1,709,434	2,813,833	18,434,281	33,871,648	281,421,906
2006 (American Community Survey)	9,948,081	3,002,048	2,026,803	1,999,332	2,941,454	19,917,718	36,457,549	299,398,485
2030 Pop (SCAG, SANDAG, Census)	12,737,077	3,752,003	3,553,281	3,425,554	3,855,085	27,323,000	49,240,891	363,584,000
Population percent change (2000-2006)	4.5%	5.5%	31.2%	17.0%	4.5%	8.0%	7.6%	6.4%
Population percent change (2006-2030)	28.0%	25.0%	75.3%	71.3%	31.1%	37.2%	35.1%	21.4%
Gender (2006 ACS)								
Male	49.5%	50.0%	50.0%	50.1%	50.3%	49.8%	50.0%	49.2%
Female	50.5%	50.0%	50.0%	49.9%	49.7%	50.2%	50.0%	50.8%
Age Distribution (2006 ACS)	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Under 18 years	26.9%	26.3%	27.5%	29.7%	25.3%	27.0%	26.1%	24.6%
18 to 24	10.0%	9.6%	10.6%	11.3%	11.5%	10.5%	10.4%	9.9%
25 to 34	14.3%	13.5%	16.7%	15.8%	14.7%	14.6%	14.4%	13.3%
35 to 45	15.6%	15.9%	14.4%	14.5%	14.8%	15.3%	15.2%	14.7%
45 to 54	13.6%	14.1%	12.0%	12.8%	13.6%	13.4%	13.8%	14.5%
55 to 64	9.4%	9.7%	7.6%	7.9%	8.9%	8.9%	9.4%	10.6%
65 years or older	10.2%	10.8%	11.2%	8.1%	11.1%	10.3%	10.8%	12.4%
Median Age in Years (2006 ACS)	33.9	35.3	31.8	30.3	34.0	33.6	34.4	36.4

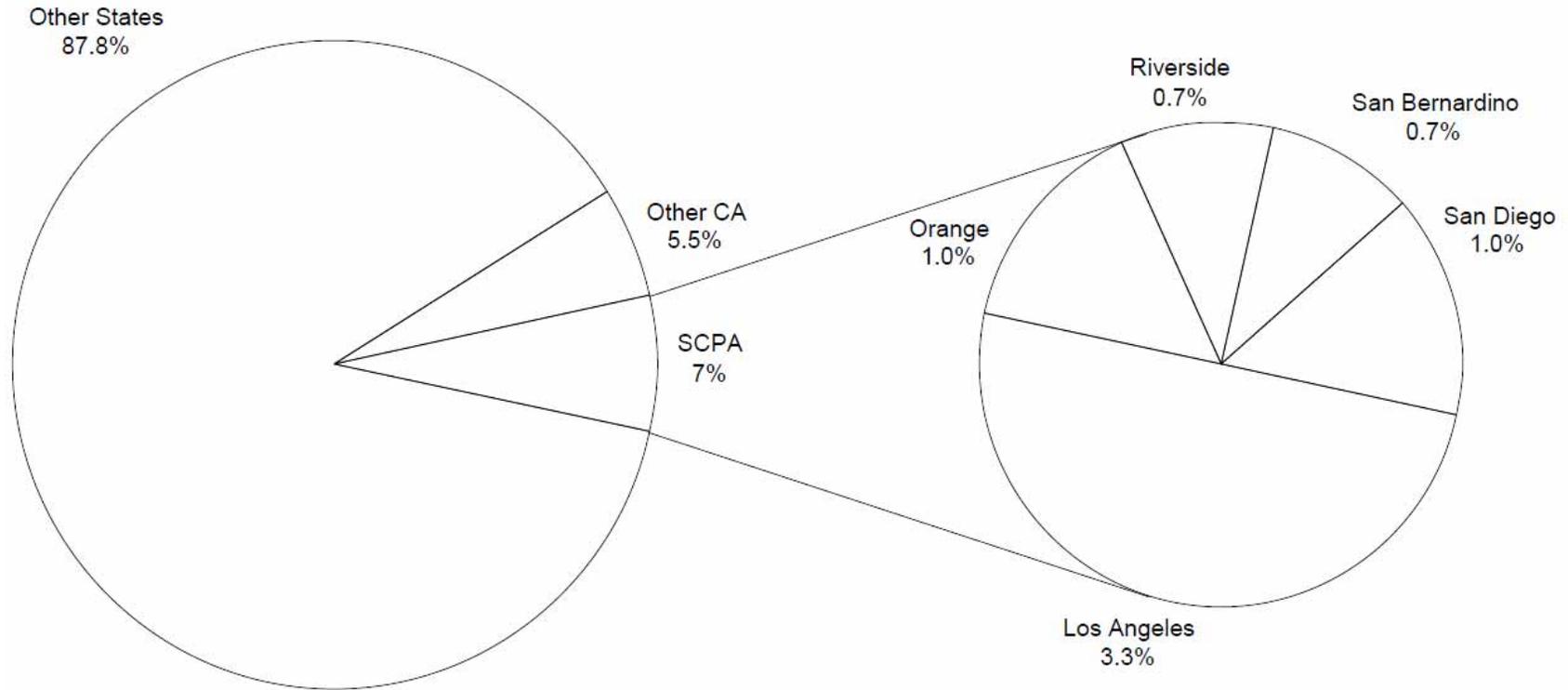
Table 3-10
Demographic Profile of the South Coast Planning Area v. California and the U.S.

Characteristic	South Coast Planning Area Counties					Total South Coast Planning Area	California	United States
	Los Angeles	Orange	Riverside	San Bernardino	San Diego			
Median Household Income (2006 ACS)	\$51,315	\$70,232	\$53,508	\$52,941	\$59,591	\$56,115	\$56,645	\$48,451
Poverty Level (2006 ACS)								
Percent of Families Below Poverty	12.4%	6.6%	9.1%	10.8%	8.1%	10.3%	9.7%	9.8%
Percent of Population Below Poverty	15.4%	9.7%	12.2%	13.7%	11.7%	13.5%	13.1%	13.3%
Pop 25+ yrs. College Grad. (2006 ACS)	27.7%	34.8%	18.9%	17.4%	33.3%	27.8%	29.0%	27.0%
Race (2006 ACS)	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.0%	100.0%
American Indian and Alaska Native	0.5%	0.4%	0.8%	0.8%	0.7%	0.6%	0.7%	0.8%
Asian & Pacific Islander	13.2%	16.4%	5.4%	6.2%	10.7%	11.8%	12.7%	4.5%
Black or African American	8.9%	1.7%	6.0%	9.0%	5.0%	6.9%	6.2%	12.4%
White	46.8%	64.8%	61.8%	62.4%	70.2%	56.1%	59.8%	73.9%
Other or Multiple Race	30.6%	16.7%	26.0%	21.6%	13.4%	24.6%	20.6%	8.4%
Hispanic (2006 ACS)	47.3%	32.9%	42.2%	46.0%	30.1%	41.9%	35.9%	14.8%
Language Spoken at Home (2006 ACS)	100.00%	100.00%	100.00%	100.00%	100.00%	100.0%	100.0%	100.0%
English Only	43.7%	43.8%	61.3%	60.7%	64.1%	52.1%	57.5%	80.3%
Spanish	39.9%	26.7%	30.0%	32.7%	24.2%	34.1%	28.4%	12.2%
Other Language	16.5%	29.5%	8.7%	6.5%	11.7%	13.8%	14.1%	7.5%

**Table 3-10
Demographic Profile of the South Coast Planning Area v. California and the U.S.**

Characteristic	South Coast Planning Area Counties					Total South Coast Planning Area	California	United States
	Los Angeles	Orange	Riverside	San Bernardino	San Diego			
Total Housing Units (2006 ACS)	3,556,418	1,023,053	732,433	668,378	1,125,820	37,106,102	13,174,781	126,311,823
Occupied Housing Units (2006 ACS)	3,172,032	971,028	643,239	592,650	1,039,619	6,418,748	12,151,227	111,617,402
% Owner Occupied	49.3%	62.4%	69.2%	66.4%	57.6%	56.2%	58.4%	67.3%
% Renter Occupied	50.7%	37.6%	30.8%	33.6%	42.4%	43.8%	41.6%	32.7%
Persons Per Dwelling Unit (2006 ACS)	3.1	3.1	3.1	3.3	2.7	3.1	2.9	2.6
Employment (2006 EDD, BLS)	4,620,800	1,568,300	850,300	831,800	1,459,900	9,331,100	17,029,900	144,427,000
% Unemployed	4.7%	3.4%	5.1%	4.8%	4.0%	4.4%	4.9%	4.6%
Occupation (2006 ACS)								
Management, professional & related occupations	32.9%	38.1%	26.8%	26.6%	38.6%	33.4%	34.7%	34.0%
Service occupations	17.2%	15.0%	18.0%	16.5%	17.4%	16.9%	16.7%	16.5%
Sales and office occupations	26.9%	27.4%	27.4%	26.9%	24.9%	26.7%	26.0%	25.9%
Farming, fishing and forestry occupations	0.2%	0.3%	1.0%	0.2%	0.4%	0.3%	1.3%	0.7%
Construction, extraction, maintenance and repair occupations	8.8%	7.8%	13.7%	12.9%	10.3%	9.7%	9.6%	10.0%
Production, transportation, and material moving occupations	14.1%	11.4%	13.1%	16.9%	8.4%	13.0%	11.7%	13.0%

Table 3-11
South Coast Planning Area Population



Educational Level. The proportion of the population 25 years or over with a college degree was almost the same in the South Coast (27.8%) as the national average (27.0%) but slightly under that of the State (29.0%). Within the Planning Area, the residents of the Counties of Orange (34.8%) and San Diego (33.3%) recorded the highest proportion of population with college degrees. The lowest percentage of population with college degrees was reported for residents of San Bernardino County (17.4%).

Race and Ethnicity. The most noticeable demographic difference between the South Coast Planning Area and the nation was with respect to race and ethnicity. The South Coast and California have similar racial and Hispanic breakdowns, but when compared to the nation as a whole, the South Coast recorded a significantly higher proportion of Asian/Pacific Islanders (11.8%) than the nation (4.5%), as well as other or multiple races (27.6%) compared to (8.4%) for the nation. The South Coast Hispanic resident proportion (41.9%) outnumbered that in the nation (14.8%). Los Angeles reported the highest percentage of Hispanic residents (47.3%) and somewhat surprising was that San Diego County recorded the lowest percentage of Hispanic residents (30.1%) within the five-county Planning Area.

Housing, Ownership, and Household Size. There were 7.1 million housing units in the South Coast Planning Area, which is about 54 percent of the 13.2 million housing units in the state. There were 126.3 million housing units in the U.S. in 2006, and the Planning Area represented about 6 percent of the nationwide total. About 6.4 million of the housing units in the Planning Area are occupied, of which 56 percent are owner-occupied and 44 percent are rented. The percentage of housing that is owner-occupied was a little higher for the state (58%) and substantially higher nationwide (67%). Within the Planning Area the highest proportion of homeownership was reported for Riverside County (69%), and the lowest homeownership rate was reported for Los Angeles County (49%). The average household size for the Planning Area was 3.1 people and was larger than the state average of 2.9 people and the nationwide average of 2.6 people.

Employment and Unemployment. The total non-farm employment in the South Coast Planning Area during 2006 was 9.3 million or about 55 percent of the 17.0-million total employment within the state. The total employment in the U.S. in 2006 was 144.4 million, and the Planning Area represented about 6 percent of the nationwide total employment. The unemployment rate in the Planning Area averaged 4.4 percent and was very close to the nationwide rate of 4.6 percent, but slightly lower than the statewide average of 4.9 percent. Within the Planning Area the highest unemployment rate was reported in Riverside County (5.1%) and the lowest in Orange County (3.4%).

Workforce Occupations. The occupational distribution for the South Coast Planning Area was very similar to the State of California and the U.S. as a whole. The largest occupational category was management and professional occupations representing about one third of the labor force. The second largest occupational category was sales and office occupations with about one quarter of the work force in this category. Production, transportation, and material moving occupations represented about 13 percent of the workforce. Construction, extraction, maintenance, and repair occupations repre-

sented about 10 percent of the workforce. Farming, fishing, and forestry occupations represented a very small proportion of the workforce (1%).

Employment Forecast. Although the population growth rate for the South Coast Planning Area is expected to grow at a rate about 75 percent faster than the nation, the employment growth for residents of the Planning Area is expected to grow at a rate that is close to the national growth rate. By 2014 the South Coast Planning Area is expected to employ slightly more than 8.7 million people, a 13.7-percent increase from 2004 (Table 3-12). The nation is expected to experience 13.0-percent growth in employment during that same period.

**Table 3-12
 Employment Growth Forecast for 2014**

Employment	South Coast Planning Area	California	United States
2006	9,331,100	17,029,900	144,427,000
2014	9,895,600	19,013,700	164,539,900
Increase	565,500	1,983,800	20,112,900
Percent Increase	6.0%	11.6%	13.9%
Annualized Rate	0.7%	1.4%	1.6%

Sources: California Employment Development Department.
 U.S. Department of Labor, Bureau of Labor Statistics.

Demographic Summary. The Planning Area makes up over half (about 55%) of the population, employment and the economy of the State of California. The Planning Area population is greater than 48 of the 50 states and makes up seven percent of the U.S. population. In general, the residents of the planning area are a little younger and are represented by a higher proportion of Hispanics than the state of California or the nation. The median household income for the Planning Area is equal to the statewide median income and substantially greater than the nationwide median household income.

Community Strength Indicators. In general, the South Coast Planning Area has outperformed the nation as measured by several community strength indicators. These indicators show that population and employment growth within the Planning Area was nearly double that of the nation during the last 25 years. Compared with the nation, residents of the Planning Area have substantially higher incomes, and a high proportion of the population has a college degree. Income is more evenly distributed among the Planning Area residents than in the nation, and the economy is more diversified, which can reduce the risk associated with economic downturns. One area of relative weakness in the Planning Area is the Housing Affordability Index, which reflects the high cost of housing in the Planning Area compared with the nation (Table 3-13).

**Table 3-13
Indicators of Community Economic Strength**

Community Strength Indicators and Comparison Categories	South Coast	United States
Population Growth (Annualized rate, 1970-2005)	1.7%	0.6%
Employment Growth (Annualized rate, 1970-2005)	2.3%	1.4%
Personal Income Growth (Adjusted for Inflation, Annualized rate, 1970-2005)	2.8%	2.2%
Non-labor Income Share of Total in 2005	28.7%	37.1%
Median Age	32.3	37.3
Per Capita Income (2005)	\$35,311	\$26,371
Average Earnings Per Job (2005)	\$50,386	\$30,269
Education Rate (% of population 25 and over who have a college degree)	25.1%	14.5%
Education Rate (% of population 25 and over who have less than a high school diploma)	25.8%	21.0%
Employment Specialization*	10	155
Rich-Poor Ratio (for each household that made over \$100K, how many households made less than \$30K)	2.1	8.7
Housing Affordability (100 or above means that the median family can afford the median house)	88	186
Change in Housing Affordability (% change in index 1990-2000; Positive means the area is more affordable.)	47.2%	10.3%
Government share of total employment	12%	15%
Unemployment Rate (2006)	4.4%	4.6%

Source: Headwaters Economics, Economic Profile System, developed for BLM.

3.19.2.2 Economic Characteristics

The South Coast economy represents about seven percent of the U.S. economy and about two percent of the global economy (Table 3-14). The South Coast is a major economic region with a worldwide impact. As an economy, the South Coast region would rank as the 11th largest among the nations of the global economy.

Table 3-14
2005 Gross Domestic Product (GDP)

Gross Domestic Product	South Coast	California	U.S.	World
GDP (\$ billions)	\$880	\$1,633	\$12,422	\$ 44,880
South Coast GDP as a % of each region	100%	54%	7%	2%

Source: U.S. Dept. of Commerce and International Monetary Fund.

The distribution of employment by industry sector for the South Coast Planning Area is similar to the state of California and the nation as a whole. Private sector employment is predominantly service-oriented as more than eight out of every ten employees are employed in the service sector of the economy. The balance of employment (approximately 18%) is in manufacturing or other goods-producing sectors (Table 3-15).

Table 3-15
Distribution of Private Sector Employees

Category	South Coast	California	USA
Goods-producing	18.1%	17.8%	18.1%
Natural Resources and Mining	0.1%	0.4%	0.6%
Agriculture, forestry, fishing & hunting	*	0.2%	0.1%
Mining	0.1%	0.2%	0.5%
Construction	6.6%	6.9%	6.1%
Manufacturing (Incl. Forest Products)	11.4%	10.5%	11.4%
Service-providing	81.9%	82.2%	81.9%
Trade, Transportation, and Utilities	22.4%	22.0%	22.3%
Information	3.9%	3.8%	2.8%
Financial Activities	8.0%	7.7%	7.4%
Professional and Business Services	18.3%	19.3%	17.5%
Education and Health Services	13.1%	13.5%	16.2%
Leisure and Hospitality	11.9%	11.7%	11.1%
Other Services	4.3%	4.2%	4.6%
Unclassified	*	*	*
Total	100.0%	100.0%	100.0%

*Less than 0.1%

Source: California Employment Development Department.

To produce the estimates of employment and the value of regional product, CIC developed a regional input-output (I-O) model for the South Coast Planning Area. The regional I-O model was based on software and data provided by Impact Analysis for

Planning (IMPLAN)/Pro.¹ The value of the IMPLAN/Pro system was to provide a basis for measuring the size of key economic sectors of the Planning Area in terms of output, income, and employment. In addition to providing measurements of existing economic conditions for the South Coast region and the subset of BLM-managed lands, the I-O system also provided the ability to model the expected impact of exogenous changes in the South Coast economy based on planning alternatives for the proposed BLM resource management plan.

The economic impacts (direct, indirect, and induced) were determined for each of the BLM-proposed planning alternatives for the South Coast Planning Area and are presented in Chapter 4. The economic impact definitions listed below explain the terms that will be used in the following paragraphs and tables:

Output. Output is a measure of the sales generated within the local economy (i.e., the South Coast Planning Area). The total output (cumulative impact) has three subcomponents: the direct sales impact, the indirect sales impact, and the induced sales impact.

- **Direct sales** impacts occur when a recreational visitor to the Planning Area purchases a meal in a local area restaurant.
- **Indirect sales** impacts occur when businesses make purchases from other businesses, (e.g., a Planning Area restaurant purchasing supplies [e.g., from food wholesalers] or services [e.g., linen cleaning services]). In turn each of the indirect businesses must also make purchases from their suppliers.
- **Induced sales** are generated by the purchases of employees and owners of the businesses with direct, indirect, and induced sales. The employees and owners spend their incomes from the compensation for labor and ownership that was required to produce the direct output, as well as all indirect and induced output required by the direct sales.

Employment. Employment is a measure of the amount of full and part-time annual average employment, including self-employed proprietors, within the Planning Area economy.

Value added. Value added is a measure of the amount of value created within the economy. In this study it is the amount of value created within the Planning Area economy. There are four value-added subcomponents:

- **Employee compensation** includes the wages and salaries of workers who are paid by employers as well as the cost of benefits such as health and life insurance, retirement payments, and non-cash compensation.
- **Proprietary income** consists of payments received by self-employed individuals as income from the private businesses they own. This includes income received by

¹ IMPLAN (Impact Analysis for Planning) was originally developed by the U.S. Department of Agriculture, Forest Service in cooperation with the Federal Emergency Management Agency and the U.S. Department of the Interior, Bureau of Land Management to assist the Forest Service in land and resource management planning.

many private business owners ranging from a lawn care service or a dry-cleaning business, as well as doctors, attorneys, consultant, and other professionals that own their business.

- **Other property type income** consists of payments for interest, rents, royalties, and dividends. Payments to individuals in the form of rents received on property, royalties from contracts, and dividends paid by corporations are included here as well as corporate profits earned by corporations.
- **Indirect business taxes** consist of excise taxes, property taxes, fees, licenses, and sales taxes paid by businesses. These taxes occur during the normal operation of businesses, but do not include taxes on profit or income.

Economic Characteristics of the Planning Area. The South Coast Area economy generates about \$944 billion in gross regional product as measured by value added (Table 3-16). The total output (sales) of the Planning Area was approximately \$1.7 trillion, and the total employee income is \$515 billion. The \$1.7 trillion in output within the Area supports over 11 million jobs. The total value added per job is approximately \$83,900.

The largest non-government sector of the South Coast Planning Area economy in terms of value added is manufacturing. This sector added \$93.9 billion to the local economy while employing nearly a million people. Real estate was the next most important sector, based on value added, contributing \$90.3 billion and employing 657,900 people. The trade sectors are very important areas of the economy with retail trade adding \$62.1 billion and employing over 1.1 million people. Wholesale trade contributed \$60.8 million to the local economy and employed over a half a million people. Other important sectors include professional and technical services adding \$73.3 billion to the economy, and the finance and insurance sector contributing \$67.4 billion to the South Coast economy. The government sector employs nearly 1.3 million people and adds \$160.7 billion to the South Coast economy.

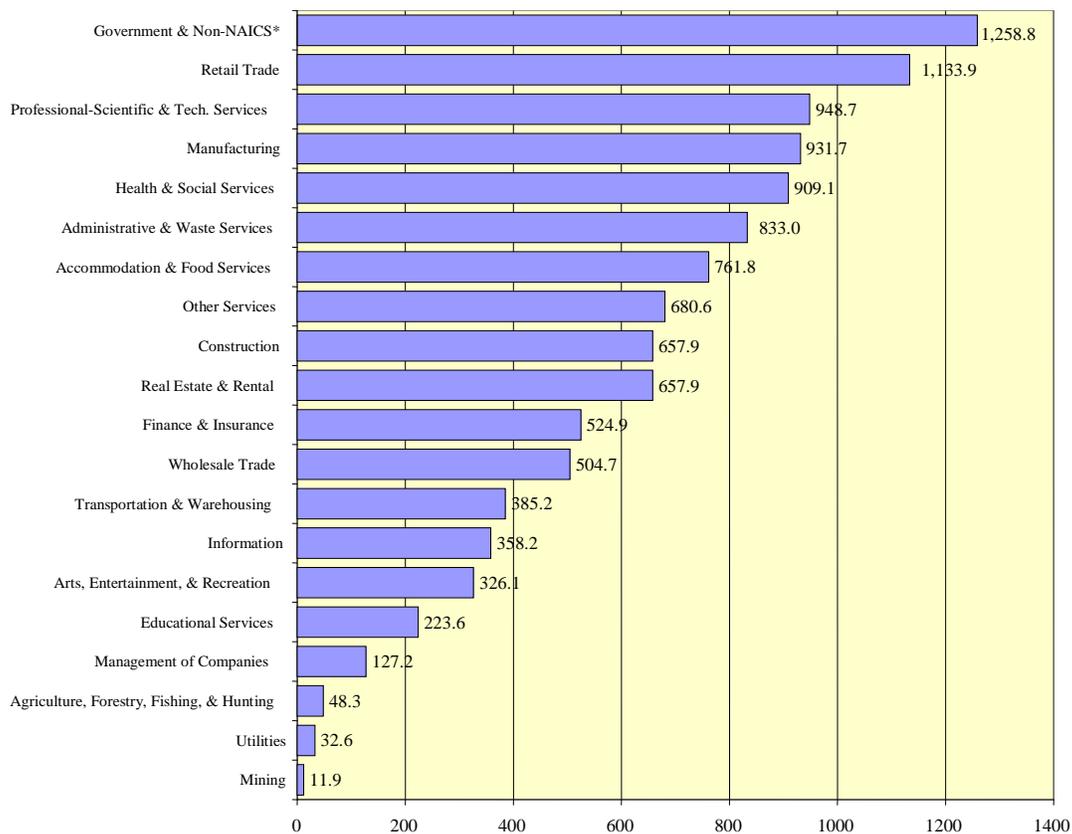
When the above listed sectors are ranked by employment, the largest sector of the South Coast Planning Area economy is Government and Non-NAICS. In other words the public sector accounts for the largest single source of employment in the Planning Area (Table 3-17). The Retail Trade sector is the second largest employment generator within the Planning Area, but generates about one-third less regional product (i.e., value added) than the Manufacturing sector.

Table 3-16
South Coast Planning Area –
Five-County Total Economic Value Added
by Major Sector during 2006

Major Category	Value Added (billions)	Number of Employees
Manufacturing	\$93.9	931,700
Real Estate & Rental	90.3	657,900
Professional-Scientific & Tech. Services	73.3	948,700
Finance & Insurance	67.4	524,900
Information	62.1	358,200
Retail Trade	62.1	1,133,900
Wholesale Trade	60.8	504,700
Health & Social Services	53.7	909,100
Construction	48.4	674,500
Administrative & Waste Services	32.0	833,000
Transportation & Warehousing	26.6	385,200
Accommodation & Food Services	25.7	761,800
Other Services	23.1	680,600
Utilities	18.0	32,600
Arts, Entertainment, & Recreation	16.5	326,100
Management of Companies	14.9	127,200
Educational Services	7.8	223,600
Mining	4.3	11,900
Agriculture, Forestry, Fishing, & Hunting	2.4	48,300
Government & Non-NAICS*	160.7	1,258,800
Total	\$ 944.0	11,332,700

*NAICS = North American Industry Classification System.
Source: IMPLAN/Pro, South Coast Planning Area, 2006.

Table 3-17
South Coast Employment by Sector (in thousands)



3.19.3 Range Management – Livestock Grazing: Baseline Economic Conditions

Within the state of California, BLM-administered land contains 699 leased grazing allotments on 8.1 million acres. There are approximately 37,211 acres, or 28%, of BLM managed surface land available for grazing (active and inactive allotments) in the South Coast Planning Area (Table 3-18). This represents less than .3 percent of the 16 million acres of grazing land statewide. The total potential number of livestock authorized for grazing in the South Coast Planning Area for cattle is 257 head and for sheep 660 head. There are eight grazing allotments within the Planning Area; however, only three of the allotments were active at any time during the last five fiscal years (FY2004 through FY 2008). The three allotments with grazing activity on BLM land have a combined total of 27,887 acres. These three cow / calf-grazing allotments are located on Beauty Mountain, Clover Flats, and Hauser Mountain with a potential total of 191 head. Over the most recent five-year period the total income from the BLM grazing leases was \$7,906 or an average of about \$1,581 per year. There are no feedlots located on BLM-administered lands within the Planning Area.

**Table 3-18
Grazing Allotments on BLM Land in the South Coast Planning Area**

Allotment (ID Number)	Acres	Active/ Inactive	Livestock Number*/ Season of Use	Receipts
Cattle Allotments				
Beauty Mountain (06009)	17,413	Active: 2004 2005 Inactive: 2006-08	121 C 3/1 to 2/28	2004 – \$2,076.36 2005 – \$2,599.08
Clover Flats (07012)	7,522	Partially Active La Posta Withdrawal	59 C 3/1 to 2/28	2004 – \$1,012.46 2005 – \$ 644.40 2006 – \$ 561.60 2007 – \$ 259.20 2008 – \$ 259.20
Hauser Mountain (07024)	2,952	Active	11 C 3/1 to 6/14 11 C 12/16 to 2/28	2004 – \$ 94.38 2005 – \$ 118.14 2006 – \$ 102.96 2007 – \$ 89.10 2008 – \$ 89.10
Otay Mountain (07035)	5,522	Inactive Due to Fires	66 C 3/1 to 4/30 66 C 2/1 to 2/28	
Sheep Allotments				
Steele Peak (16040)	1,580	Ephemeral Inactive	660 S 3/15 to 6/14	
Vacant Allotments				
Dulzura (07039)	400	Inactive (vacant) 3/1/2002-2/28/2012	5 C 3/1 to 8/31 5 C 1/1 to 2/28	
Mother Grundy (07041)	720	Inactive (vacant) 3/1/2002-2/28/2012	6 C 3/1 to 2/28	
Rogers Canyon (16042)	1,102	Inactive (vacant) 3/1/2002-2/28/2012	34 C 3/1 to 2/28	
Total	37,211			\$ 7,905.98

* C = cattle; S = Sheep

Source: Bureau of Land Management, Palm Springs Field Office.

The 27,887 acres of grazing land that was active during the last five years had a capacity of 191 head or about 146 acres per head. The U.S. average for net calf crop weaned per cow exposed to bulls is about 71 percent. The 191 head would be expected to yield 136 head per year from cow/calf operations.²

Based on information published in Livestock News (September 28, 2005), the five-year rolling average weaned calf at auction weight was 588 pounds. Based on an average weight yield of 558 pounds per calf and a market value of \$0.99 per pound the total annual output (sales) for the cow/calf operations would be about \$79,168 from the 136 annual calves produced.

² Ralph L. Phillips, Farm Advisor, Range/Natural Resources and Livestock, University of California Cooperative Extension.

In 2006 there were about 110,300 head of cattle and calves delivered to market in the five-county Planning Area. The total weight of cattle and calves at auction was 210,000 hundredweight (cwt) with a total market value of about \$50.3 million. A very small amount of livestock production was reported for Los Angeles and Orange Counties. The grazing activity on BLM lands in the Planning Area has generated a very small percentage (less than .2%) of the total Planning Area value of cattle and calves delivered to market each year. Using the IMPLAN regional input-output model for South Coast, the overall economic baseline value of livestock grazing for the Planning Area is presented in Table 3-19.³

Table 3-19
Baseline Economic Condition for Livestock Grazing
on BLM Land within the Planning Area

Economic Baseline Condition — 27,887 Acres Averaging 191 Head				
Category	Direct	Indirect	Induced	Total
Dollar Value	\$79,168	\$51,474	\$25,948	\$156,590
Employment	0.55	0.28	0.20	1.03
Labor Income	\$5,822	\$14,559	\$9,677	\$30,058
Property Income	\$458	\$6,855	\$4,136	\$11,449
Tax Revenue	\$1,664	\$2,053	\$1,286	\$5,003
Value Added	\$7,944	\$23,467	\$15,098	\$46,509

Source: MIG IMPLAN/Pro and CIC Research, Inc. (2006)

The \$79,168 in annual direct sales (output) generated on BLM lands in the Planning Area represented a very small percentage (less than 0.2%) of the \$19.1 million in countywide output of cattle and calves. The \$79,168 in direct sales in the Planning Area generated a total impact (direct, indirect, and induced) of \$156,590 in output, including \$46,509 in total value added. The total value added within the Planning Area included \$30,058 in labor income (wages and salaries) and a total of 1.03 jobs.

3.19.4 Lands and Realty Management

3.19.4.1 Baseline Economic Conditions

The baseline economic condition for the lands and realty program focuses on authorizations for communication sites, access roads, renewable energy sites, and other rights of way (ROW). The South Coast Planning Area contains 278 separate parcels under BLM administration. Many of these parcels are small, non-contiguous, and isolated.

Communication Sites. BLM has 11 communication sites encompassing 13.17 acres within the Planning Area. The 11 communication sites are distributed throughout the Planning Area and are primarily located on mountain tops in order to provide good signal reception and transmission. Primary users of the communication include other

³ Department of Agriculture, Weights & Measures (for each respective county): Los Angeles, Orange, Riverside, San Bernardino, and San Diego: *2006 Crop Statistics & Annual Report(s)*.

federal government agencies including the U.S. Border Patrol and the U.S. military. Commercial entities control some of the sites for cellular usage, and radio and TV signals. Some city and county governments also have facilities to support their communication needs. Over a nine-year period of FY2000 through FY2008 BLM received total lease rent of \$914,518 for the communication sites. Average annual lease rent for the communication sites was about \$101,000 per year.

BLM communication sites require roughly \$10,000 per year per facility for maintenance. Thus, the 11 existing facilities require approximately \$110,000 in maintenance cost on an annual basis. The annual economic value generated by BLM communication facilities is an insignificant portion of the South Coast economy and would not be expected to have a substantial economic impact, beneficial or adverse. Using the IMPLAN model for the Planning Area, the baseline economic costs of the annual maintenance for the existing communication facilities are as follows in Table 3-20.

Table 3-20
Baseline Economic Condition of Communication Sites and Facilities
on BLM Land within the Planning Area

Economic Baseline Condition — 11 Communication Facilities				
Category	Direct	Indirect	Induced	Total
Dollar Value	\$110,000	\$63,036	\$92,647	\$265,683
Employment	0.85	0.36	0.71	1.92
Labor Income	\$53,274	\$19,494	\$34,551	\$107,319
Property Income	\$1,238	\$7,351	\$14,766	\$23,354
Tax Revenue	\$860	\$2,608	\$4,591	\$8,058
Value Added	\$55,372	\$29,452	\$53,908	\$138,731

Source: CIC Research, Inc. and MIG IMPLAN/Pro (base year 2006).

The 11 BLM communications sites require \$110,000 direct output within the Planning Area for annual maintenance. The \$110,000 in annual direct sales generated a total impact (direct, indirect, and induced) of \$265,683 in output, including \$138,731 in total value added. The total value added within the Planning Area included \$107,319 in labor income, \$23,354 in property income, \$8,058 in tax revenue, and a total of 1.92 jobs.

Rights of Way – Roads. BLM has issued ROWs within the 133,000 surface acres of BLM lands in the Planning Area. These ROW grants are generally for access roads that cross BLM land, although ROWs are granted for other types of uses as well (e.g., pipelines and communication and utility corridors). A total of 50 ROWs with a total area of approximately 2,226 acres have been issued within the South Coast Planning Area on BLM-administered lands. For the period of FY2000 to FY2008, the BLM had received payments for ROWs of \$7,759 or about \$862 per year.⁴ The average annual ROW rent was about \$2.58 per acre. About half of the ROWs incorporate access roads

⁴ Pursuant to 43 CFR 2806.14, federal, state, and local governments, or their agent or instrumentality, are exempt from paying rent unless the facility, space, or any part of the ROW is used for commercial purposes.

and based on an average 100-foot width for access road ROWs, the estimated total length of roadway on BLM-administered land would be 92 miles.

The majority of annual economic costs for existing ROWs are associated with the maintenance of paved and unpaved roadways. The average annual cost per mile of maintained ROW is approximately \$3,000 to \$5,000 per mile. Based on an overall average cost of about \$4,000 per mile for maintenance, the 92 miles of BLM ROWs in the Planning Area yield an annual total economic value from maintenance costs of about \$368,000. Using the IMPLAN model, the baseline economic impacts of annual maintenance activities for existing ROWs are listed in Table 3-21. The annual economic value generated by BLM ROWs is an insignificant portion of the Planning Area economy and does not generate an economic impact that is either beneficial or adverse.

Table 3-21
Baseline Economic Condition of Annual Roadway Maintenance Costs
for BLM Right-of-Way within the Planning Area

Economic Baseline Condition — 2,226 Acres/92 Miles of ROW Maintenance				
Category	Direct	Indirect	Induced	Total
Dollar Value	\$368,000	\$210,884	\$309,948	\$888,832
Employment	2.85	1.19	2.38	6.42
Labor Income	\$178,226	\$65,217	\$115,588	\$359,031
Property Income	\$4,142	\$24,591	\$49,398	\$78,131
Tax Revenue	\$2,876	\$8,723	\$15,359	\$26,959
Value Added	\$185,243	\$98,531	\$180,345	\$464,120

Source: CIC Research, Inc. and MIG IMPLAN/Pro (base year 2006).

Renewable Energy. Renewable energy ROWs on BLM lands are generally issued for solar or wind energy sites. There are no solar energy sites on BLM lands within the Planning Area. Solar potential is likely discounted due to lack of large open flat spaces, topography, vegetative cover, boulders, and/or excluded areas due to critical habitat, and Visual Resource Management (VRM) classes. Distance to existing electrical distribution systems is also a deterrent.

Wind Energy. There are no developed wind-energy sites on BLM land in the South Coast Planning Area. However, there is a growing level of interest in commercial wind-farm development on BLM land, and the energy policies of the Federal government would support this development under the existing RMP. There is the potential for wind energy development on BLM-administered lands within the Planning Area. If and when a project is proposed to the BLM, the BLM and operator(s) would need to prepare project-specific Plans of Development (PODs). Each POD would need to address the potential impacts (including economic and social impacts) of a proposed wind energy development.

The total regional energy demand for the five-county region was approximately 140,000 MWh (millions of kilowatt-hours) in 2006.⁵ The peak summer energy demand for the region was about 27.6 megawatts (MW).⁶ The baseline economic impacts per MW of wind energy power generation indicate that wind energy generating capacity of less than 3,000 MW (about 10% of regional peak demand) would not result in significant economic impacts to the economy of the Planning Area in terms of energy pricing or supply. However, even limited development of wind power energy generation would be beneficial to the Planning Area economy and the region.

A permanent wind-energy facility would generate annual revenue for BLM of \$2,365 per megawatt (MW) paid in advance. The expected cost of developing a wind energy site on BLM land is approximately \$1.6 million per MW.⁷ These costs include \$1,280,000 per MW for the equipment, which is not available for purchase within the Planning Area, and \$320,000 for site preparation and installation. The annual cost of maintenance of the site would be \$33,288 per MW.⁸ As a demonstration for potential wind-farm development, the baseline economic impacts from site development and construction per MW of energy generation capacity were quantified and listed in the following table using the IMPLAN model for the Planning Area (Table 3-22).

Table 3-22
Conceptual Baseline Economic Condition for Wind Energy Site Preparation and Construction within the Planning Area

Economic Baseline Condition — Per MW of Generating Capacity				
Category	Direct	Indirect	Induced	Total
Dollar Value	\$320,000	\$155,787	\$271,373	\$747,160
Employment	2.62	0.89	2.08	5.59
Labor Income	\$163,452	\$49,692	\$101,202	\$314,347
Property Income	\$19,563	\$18,304	\$43,250	\$81,116
Tax Revenue	\$2,111	\$5,584	\$13,448	\$21,142
Value Added	\$185,126	\$73,580	\$157,900	\$416,606

Source: CIC Research, Inc. and MIG IMPLAN/Pro (base year 2006).

The \$320,000 direct cost for site preparation and installation per MW of energy would generate a total impact (direct, indirect, and induced) of about \$747,160 in output, including \$416,606 in total value added within the Planning Area. The total value added within the Planning Area would include about \$314,347 in labor income (wages and salaries) and a total of 5.59 jobs per MW of installed generating capacity.

The annual direct cost for maintenance would be \$33,288 per MW of energy output and would generate a total impact (direct, indirect, and induced) of \$80,401 in output, includ-

⁵ The California Energy Commission, *Energy Consumption Data Management System*, (<http://www.ecdms.energy.ca.gov/elecbycounty.asp>).

⁶ California Energy Commission, *Staff Forecast of 2007 Peak Demand*, May 2006, CEC-400-2006-008-SD.

⁷ Craig D. Rose, San Diego Union Tribune, *Sempre to Acquire Wind Farm Co-Rights*, June 30, 2007.

⁸ <http://windeis.anl.gov/documents/docs/WindFAQ21Jun05.pdf>; BLM *Wind Energy Programmatic EIS, Appendix B, National Renewable Energy Laboratory Estimates of Wind Energy Resources on BLM-Administered Lands*.

ing \$41,983 in total value added within the Planning Area. The total value added within the Planning Area would include \$32,477 in labor income (wages and salaries) and a total of 0.59 job (a little more than one-half a job) per MW of energy generation (Table 3-23).

Table 3-23
Baseline Annual Economic Condition per Megawatt
for Wind Energy Site Maintenance within the Planning Area

Economic Baseline Condition —				
Per MW Of Generating Capacity Maintenance				
Category	Direct	Indirect	Induced	Total
Dollar Value	\$33,288	\$19,076	\$28,037	\$80,401
Employment	0.26	0.11	0.22	0.59
Labor Income	\$16,122	\$5,899	\$10,456	\$32,477
Property Income	\$375	\$2,224	\$4,468	\$7,067
Tax Revenue	\$260	\$789	\$1,389	\$2,439
Value Added	\$16,756	\$8,913	\$16,313	\$41,983

Source: CIC Research, Inc. And MIG IMPLAN/Pro (Base Year 2006).

The cost of wind power generation has decreased over the past 10 years, but the technology requires a higher initial investment than fossil-fueled generators. Roughly 80 percent of the cost for wind energy development is the machinery, with the balance associated with site preparation and installation. If wind generating systems are compared with fossil-fueled systems on a "life-cycle" cost basis (including the initial capital cost, fuel, and operating expenses for the life of the generator), however, wind costs are much more competitive with other generating technologies because there is no fuel to purchase and minimal operating expenses.⁹

3.19.4.2 Program-specific Sociocultural Conditions

As outlined above, the Lands and Realty issues in the Planning Area revolve around communication sites, access roads, and renewable energy sites. While none of these activities are economically significant in the Planning Area, they are culturally significant for some groups and individuals. In general, these activities are carefully scrutinized by the conservation community and often resisted. Ironically, this sometimes includes resisting renewable energy proposals, because of habitat loss, water demands, visual impacts, and other issues. Local residents sometimes consider communication sites as visually undesirable, but as was pointed out previously, in the Planning Area, these are generally not near neighborhoods. Often, recreational users of BLM lands are in favor of more access roads. Renewable energy sites can generate controversy because of water problems, associated power lines, and access roads. While there is wide-spread

⁹ <http://windeis.anl.gov/documents/docs/WindFAQ21Jun05.pdf>; BLM *Wind Energy Programmatic EIS, Appendix B, National Renewable Energy Laboratory Estimates of Wind Energy Resources on BLM-Administered Lands.*

public support for improved communications and renewable energy, controversy often ensues during implementation and siting

3.19.5 Mineral Resources Management

3.19.5.1 Baseline Economic conditions

Locatables. As of September 2008 there were 111 mining claims filed on BLM land in the South Coast Planning Area. The cost of a mining claim is \$140 annually. The mining claim entitles the holder to the mineral rights, but not to operate a mine. Under casual-use activity, the public is not required to inform the BLM. To operate a mine the owner of the claim must also file a Mining Notice for exploration activities of less than five acres or a Plan for Operations for mining of more than five acres.

One notice has been filed with BLM on a one-acre claim to explore for the quality of granodiorite to make instrument tables. Making the instrument tables generates approximately 50- to 75-percent waste material, which would then require purchasing under the 43 CFR 3600 regulations. The claimant may expand from an existing mine operation on private land onto a BLM 80-acre parcel. However, this is currently an exploratory operation and is not generating measurable commercial activity.

One Plan of Operations has been submitted to the BLM to mine pink tourmaline for gemstones. The two-acre mine is located in Chihuahua Valley, San Diego County. No further data have been reported and it is assumed that commercial activity has not started.

The existing conditions for locatables on BLM lands do not yield an economic output. Therefore, no economic baseline exists for locatable minerals, and they are not addressed further in this section.

Leasables. Leasables include oil and gas, coal, and geothermal resources. There were 389 BLM oil and gas leases in California in FY2007. These 389 leases had 4,300 producing wells with a total onshore oil and gas production of 17.5 million barrels and 4.1 billion cubic feet in 2007 on BLM lands within the state of California. BLM received \$47.8 million in royalties from the California oil and gas production (\$47.8 million in royalties were also received by the state). The average market value per barrel of oil was \$55, and the average market value of the gas produced was \$5.40 per thousand cubic feet.

There are 24 oil and gas leases on BLM lands within the Planning Area. Two of the leases are in Riverside County, and 22 leases are in Los Angeles County. CIC Research has estimated onshore oil and gas production on BLM lands within the South Coast Planning Area to be 990,000 barrels and 230 million cubic feet, respectively, in 2006. The total estimated market value of the oil and gas production on BLM leases in the Planning Area was \$55.7 million. Total royalties generated for BLM were estimated at \$2.7 million.

The \$55.7 million in annual direct sales (output) for oil and gas generated on BLM mineral estate lands in the Planning Area would represent almost six percent of the oil and gas production on BLM lands in the state of California. The \$55.7 million in direct energy sales in the Planning Area generated a total cumulative impact (direct, indirect, and induced) of \$92.4 million in output, including \$56.2 million in total value added (Table 3-24). The total value added within the Planning Area included \$27.0 million in labor income (wages and salaries) and a total of 318.7 jobs. The annual economic value generated by BLM oil and gas production would not generate an adverse economic impact on the Planning Area economy.

Table 3-24
Baseline Economic Condition of Annual Oil and Gas Production

Economic Baseline Condition — 990,000 bbl / 230,000 mcf				
Category	Direct	Indirect	Induced	Total
Dollar Value	\$55,700,000	\$13,352,794	\$23,332,786	\$92,385,580
Employment	72.76	66.94	179.01	318.71
Labor Income	\$14,201,216	\$4,125,086	\$8,701,454	\$27,027,757
Property Income	\$17,830,795	\$2,505,999	\$3,718,643	\$24,055,438
Tax Revenue	\$3,384,722	\$594,598	\$1,156,276	\$5,135,596
Value Added	\$35,416,734	\$7,225,627	\$13,576,318	\$56,218,678

Source: CIC Research, Inc. and MIG IMPLAN/Pro (base year 2006)

No other viable economic activity was identified for leaseables in the Planning Area.

Salables. There are salable resources that are economically viable (e.g., sand and gravel extraction) on BLM lands within the Planning Area. The sand and gravel operators are not required to pay a rent for using public land. Effective April 16, 2008 the rate for sand and gravel disposal from public lands within the Palm Springs–South Coast Field Office area was \$1.10 per cubic yard or \$0.73 per ton.

There is a 40-acre site on split estate lands where approximately 1,064,358 tons of sand and gravel have been removed since October 2003. This represents about 706,000 cubic yards of sand and gravel extracted over four fiscal years or an annual average of 176,500 cubic yards of sand and gravel. The market value in 2006 of the sand and gravel was estimated at \$18 per cubic yard yielding an annual direct sales impact of about \$3,177,000.

The \$3,177,000 in direct output in the Planning Area generated a cumulative total cumulative impact (direct, indirect, and induced) of \$6.4 million, including \$3.7 million in total value added (Table 3-25). The total value added within the Planning Area included about \$2.4 million in labor income (wages and salaries) and a total of 38.2 jobs. The annual economic value generated by BLM sand and gravel extraction would not generate an adverse economic impact on the Planning Area economy.

**Table 3-25
Baseline Economic Condition of Sand/Gravel Extraction**

Economic Baseline Condition — 176,500 cubic yards				
Category	Direct	Indirect	Induced	Total
Dollar Value	\$3,177,000	\$1,153,559	\$2,047,967	\$6,378,526
Employment	16.71	5.74	15.71	38.16
Labor Income	\$1,265,059	\$343,478	\$763,741	\$2,372,279
Property Income	\$620,675	\$155,098	\$326,395	\$1,102,168
Tax Revenue	\$88,508	\$41,612	\$101,486	\$231,606
Value Added	\$1,974,242	\$540,192	\$1,191,623	\$3,706,056

Source: CIC Research, Inc. and MIG IMPLAN/Pro (base year 2006)

3.19.5.2 Program-specific Sociocultural Conditions

There is a long history of mining in California stretching back to the famous Gold Rush of 1849. The images of the old-time prospectors and gold panners are etched on the public memory and continue as an important part of the California heritage. However, modern mining, and oil and gas operations are generally viewed as unsightly, polluting, and destructive by the urban conservation community. Yet, oil and gas production has been a major economic force in southern California and within the northern part of the Planning Area. People who derive income from these extractive industries strongly support them and minimize the environmental consequences.

3.19.6 Recreation Management

3.19.6.1 Baseline Economic Conditions

Recreational activities are minimal on BLM-administered lands in the South Coast Planning Area. No formal campsites or recreational facilities exist on the 278 BLM parcels in the Planning Area. Recreational activities are primarily limited to dispersed day use and are more generally focused in the Beauty Mountain and San Diego Border Mountains area. Typical outdoor activities that occur on BLM-administered land within the South Coast Planning Area are sightseeing, hiking, rock climbing, rock hounding, photography, bird watching, horseback riding, hunting / shooting, and off-highway vehicle activity.

Recreation within the five-county Planning Area is an important source of revenues for the regional economy and is valued at more than \$19.9 billion per year. About 28 percent of the spending (\$5.5 billion) is generated by day trips.¹⁰ The greater Planning Area generates more than 200 million recreational trips per year.¹¹ A very large infrastructure investment representing several billion dollars has been made in recreation and tourism facilities within the Southern California region. These investments include

¹⁰ Dean Runyan Associates, *California Travel Impacts by County*, 1992-2006, March 2008.

¹¹ CIC Research, Inc., *Southern California Visitor Activity Models*, produced under ongoing contracts with the Los Angeles, Orange County, and San Diego Convention and Visitors Bureaus.

large theme parks, spas, restaurants, hotels, shopping centers, performing arts centers, and other recreation opportunities. In contrast, very little recreation-oriented investment has been made on South Coast BLM land, and recreational opportunities are much more limited.

Although tourism is very important to the economy of the Planning Area, it is unfortunately very difficult to measure recreation on BLM lands within the five-county region. This problem exists because reliable estimates of visitor volume are very limited for most of the activities in which the BLM visitors are participating. There are no trailhead log sheets, and no fees are charged for access to the BLM lands within the South Coast Planning Area. As a result, the BLM Palm Springs–South Coast Field Office does not have any data available from the BLM’s Recreation Management Information System (RMIS).

Travel, tourism, and recreation surveys are conducted each month in Southern California by CIC Research, Inc. This survey effort has been conducted for the last three decades. Due to the general lack of outdoor recreation facilities, topography, and relative isolation of the BLM lands in the South Coast Planning Area, CIC Research would expect approximately 10,000 annual visitor use days (or less) on BLM lands. Average spending per visitor day within the Planning Area is estimated at \$24 based on the Southern California visitor survey data. Total estimated recreational spending by visitors to BLM lands in the Planning Area would be \$240,000 per year (but may be as high as \$500,000 per year). Even at the higher-end estimate recreational use of BLM land would represent a very small fraction of recreational activity and spending in the five-county South Coast region.

Based on the IMPLAN model for the South Coast Planning Area, the baseline economic impacts of recreation on BLM lands are reported in Table 3-26. The total cumulative impact (direct, indirect, and induced) generated by dispersed recreational day use of BLM lands is about \$815,000 per year.

Table 3-26
Baseline Economic Condition for BLM Dispersed Day-Use Recreation

Economic Baseline Condition — 10,000 Visitor Days on BLM Land				
Impact Category	Direct	Indirect	Induced	Total
Dollar Value	\$500,000	\$148,584	\$166,071	\$814,655
Employment	7.22	1.09	1.32	9.63
Labor Income	\$181,728	\$51,132	\$58,934	\$291,794
Property Income	\$62,406	\$27,578	\$30,021	\$120,005
Tax Revenue	\$44,974	\$7,275	\$9,002	\$61,251
Value Added	\$289,108	\$85,985	\$97,958	\$473,051

Source: CIC Research, Inc. and MIG IMPLAN/Pro (base year 2006).

3.19.6.2 Program-Specific Sociocultural Conditions

Recreation within the Planning Area is an important source of revenue for the five-county regional economy. The area is visited by a very small percentage of the nearly 20 million residents of the five-county Planning Area as an occasional leisure outing and primarily as a day-use activity. Recreation activities in the Planning Area include sightseeing, hiking, backpacking, rock climbing, camping, photography, bird watching, horseback riding, hunting / shooting, and off-highway vehicle use. Each of these activities has a user group which consists of a club or a casual group of like-minded friends and associates who constitute a vocationally based subculture. Each of these user group subcultures hold that their activities are important and that they should be provided ample space to pursue their activities without being disturbed.

The BLM concurs, but points out that there are sometimes conflicts among different user group subcultures, and between them and protection of natural and heritage resources, as well as American Indian groups. These differing perspectives require the BLM to create a balance between these competing interests. The BLM approaches this problem by encouraging public involvement so that the various user groups can see that their cultural values, interests, and activities are being seriously considered in a balanced management process.

3.19.7 Habitat Conservation Programs

3.19.7.1 Baseline Economic Conditions

Approximately 13,000 acres of land in the South Coast Planning Area have been acquired by BLM since 1994. The lands were acquired under the Land and Water Conservation Fund Act (LWCF), or donated to BLM by different non-profit groups or individuals. Although the lands were not acquired under the county Habitat Conservation Programs (HCP), they do serve as part of the “base conserved lands” that are used in the overall calculations for HCP preserve design and function.

If the lands were acquired as part of the HCPs for mitigation they would represent an annual average of about 429 acres per year over the 14-year period. Based on a median new home price of \$410,000 for the Planning Area in 2006 and a density yield of five units per acre, the estimated direct market value generated by each acre for mitigation land would be \$2,050,000.

The average annual addition of 429 acres of HCP mitigation land would enable the production of \$879 million in direct market value of construction output. The \$879 million in annual direct output in the Planning Area generated a cumulative total impact (direct, indirect, and induced) of \$2.085 billion in output, including \$1.016 billion in total value added (Table 3-27). The total value added within the Planning Area included \$726 million in labor income (wages and salaries) and a total of 13,202 jobs. The annual economic value generated by BLM lands administered under HCPs would generate a substantial economic benefit for the Planning Area economy.

Table 3-27
Baseline Economic Condition for BLM Habitat Conservation Land

Economic Baseline Condition — Acres Per Year				
Impact Category	Direct	Indirect	Induced	Total
Dollar Value	\$0.879 bil.	\$0.580 bil.	\$0.627 bil.	\$2.085 bil.
Employment	5,057	3,335	4,809	13,202
Labor Income	\$0.312 bil.	\$0.180 bil.	\$0.234 bil.	\$0.726 bil.
Property Income	\$0.061 bil.	\$0.067 bil.	\$0.100 bil.	\$0.228 bil.
Tax Revenue	\$0.005 bil.	\$0.025 bil.	\$0.031 bil.	\$0.062 bil.
Value Added	\$0.379 bil.	\$0.272 bil.	\$0.365 bil.	\$1.016 bil.

Source: CIC Research, Inc. and MIG IMPLAN/Pro (base year 2006).

3.19.7.2 Program-specific Sociocultural Conditions

The habitat conservation plans and related programs are supported by a large, loose-knit community of conservationists. This community consists of environmental organizations and individuals with a general interest in preserving and restoring the natural environment. There are many different priorities and interests in the conservation community, which sometimes run counter to one another and counter to the interests of other groups in the Planning Area, such as developers and off-highway enthusiasts. In general, the conservation community strongly favors increased wildlife habitat and natural areas, and supports limits to the continued expansion of suburbs. The conservation community represents a diverse range of people of all socio-economic backgrounds, but is more strongly represented among educated, urban, and suburban residents in the Planning Area.

3.19.8 Summary of Resource Programs

3.19.8.1 Baseline Economic Conditions

Measurable economic activity was identified for seven BLM resource programs within the South Coast Planning Area: Livestock Grazing, Communication Site Maintenance, ROW Roads Maintenance, Leasables, Salables, Recreation, and HCP Land-Development Mitigation. The total direct economic output activity for these BLM resource programs was \$937 million annually (Table 3-28). The total cumulative economic output (direct, indirect, and induced) was an estimated \$2.2 billion per year. The \$2.2 billion in output included \$1.07 billion in total value added within the Planning Area, included \$755 million in labor income (wages and salaries), and generated a total of 13,551 jobs. The annual economic value supported by BLM-administered lands in the South Coast Planning Area represented about one percent of the total regional gross domestic product of the five-county Planning Area.

Table 3-28
Summary of the BLM South Coast Baseline Economic Condition

Economic Baseline Condition - 429 acres per year				
Impact Category	Direct	Indirect	Induced	Total
Dollar Value	\$0.937 bil.	\$0.594 bil.	\$0.651 bil.	\$2.182 bil.
Employment	5,146	3,407	4,998	13,551
Labor Income	\$0.327 bil.	\$0.185 bil.	\$0.243 bil.	\$0.755 bil.
Property Income	\$0.080 bil.	\$0.069 bil.	\$0.104 bil.	\$0.253 bil.
Tax Revenue	\$0.009 bil.	\$0.026 bil.	\$0.032 bil.	\$0.067 bil.
Value Added	\$0.415 bil.	\$0.280 bil.	\$0.379 bil.	\$1.074 bil.

Source: CIC Research, Inc. and MIG IMPLAN/Pro (base year 2006).

3.19.9 References

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3.20 Environmental Justice

Beginning in the 1990s, the concept of environmental justice came to widespread public attention. Concern has developed over environmental justice issues among advocates for the poor and communities of color. In general terms, the focus of environmental justice is on disproportionate adverse environmental impacts on poor communities and communities of color in the United States. These impacts and the nature of disadvantaged communities are difficult to measure. However, a number of executive orders and policy initiatives have attempted to address environmental justice concerns.

Executive Order 12898 is entitled *Federal Action to Address Environmental Justice in Minority Populations and Low-Income Populations*. The executive order was issued by President Clinton on February 11, 1994. The order requires federal agencies to identify minority and low-income populations, and ascertain whether or not disproportionately high and adverse health or environmental effects might result from their programs, policies, and activities. Subsequently, the Environmental Protection Agency (EPA) defined environmental justice as fair treatment and meaningful involvement of all people regardless of their race, color, national origin, or income in the development, implementation, and enforcement of environmental laws, regulations, and policies. The Office of Environmental Justice coordinates the EPA's efforts to integrate environmental justice into all policies, programs, and activities. The EPA also established the National Environmental Justice Advisory Council to incorporate environmental justice into federal environmental health research, environmental law enforcement, environmental penalty assessment, environmental rulemaking, and facility location decisions.

EO 13045 is entitled *Protection of Children from Environmental Health Risks*. It requires that federal agencies assess the environmental, health, and safety risks that may disproportionately affect children. Thus, disproportional impacts to children are now considered under environmental justice.

According to the Council on Environmental Quality environmental justice guidelines, minority populations should be identified when the minority population percentage either exceeds 50 percent or the minority population is meaningfully greater than the minority population in the general population or in a meaningful geographic area. The South Coast Planning Area is a large and culturally diverse population with a significantly higher proportion of Hispanic and multi-race residents than the U.S. population, but the South Coast residents are generally similar to California residents in racial and ethnic distribution (refer to Table 3-10).

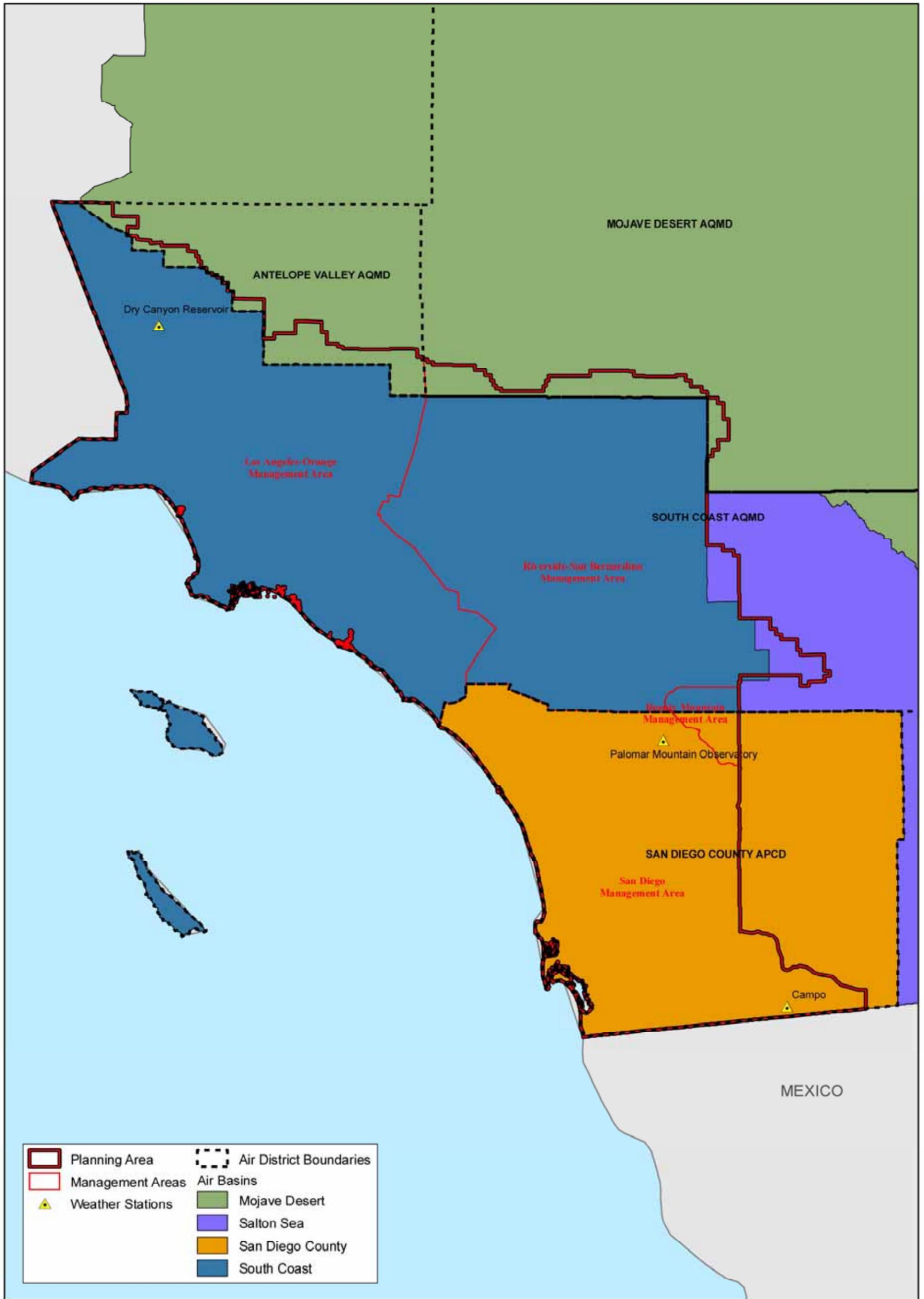
The 296 parcels under BLM management within the South Coast Planning Area are also widely dispersed throughout the five-county region. It is highly unlikely that the subpopulations of African-Americans, American Indians, Asians, and Hispanics within the Planning Area would be impacted in any meaningful way that would be greater than the general population of the region.

The BLM has identified no disproportionate adverse impacts to American Indian or other minority groups in the Planning Area. To provide for open public involvement and address environmental justice issues for the Planning Area, the BLM sent outreach

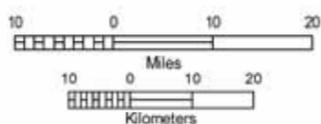
letters and made follow-up telephone calls inviting tribal representatives and other interested parties to come to several public outreach scoping and economic planning meetings held in the San Diego, Riverside, and Los Angeles Counties (December 2007 to June 2008). The public has also been invited to participate in the planning process by sharing their insights and concerns about the Planning Area in other meetings and by letter and telephone. A total of 75 members of the public participated in the scoping meetings. Fifty-three comments in the form of letters, faxes, and e-mails were received. Eleven members of the public attended the socioeconomic workshop.

3.20.1 Minority and Low-income Communities

As presented in the discussion of environmental justice above, the BLM is aware that there are small pockets of poverty and/or minority populations scattered throughout the Planning Area. However, the BLM has not identified any communities within the Planning Area with low income or minority populations that are disproportionately impacted by the existing land use activities and policies for BLM-administered lands.



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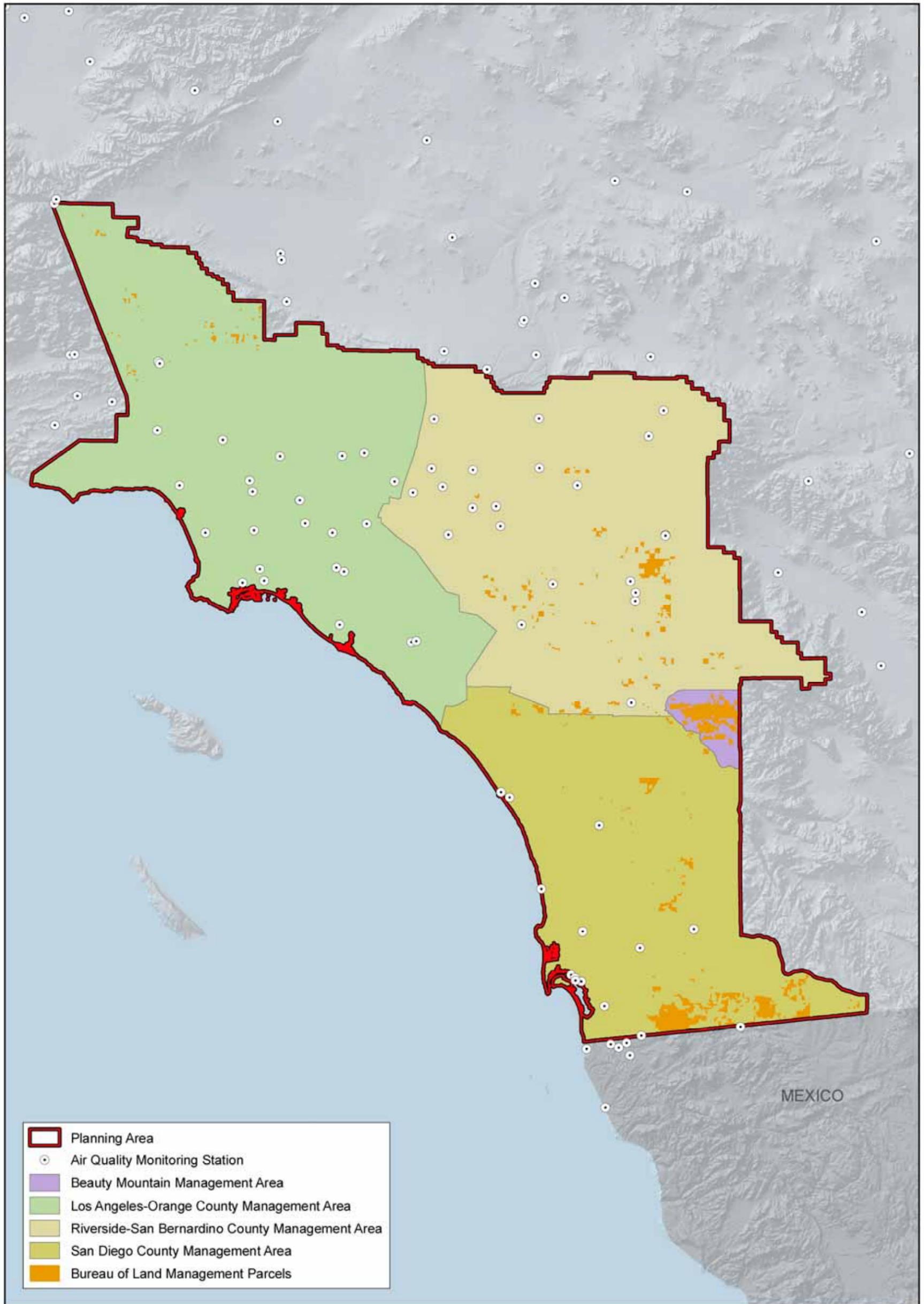


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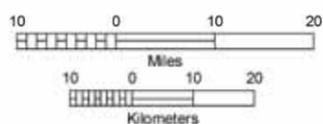


MAP 3-1: Air Basins, Air District Boundaries, and Weather Stations in Relation to the Planning Area

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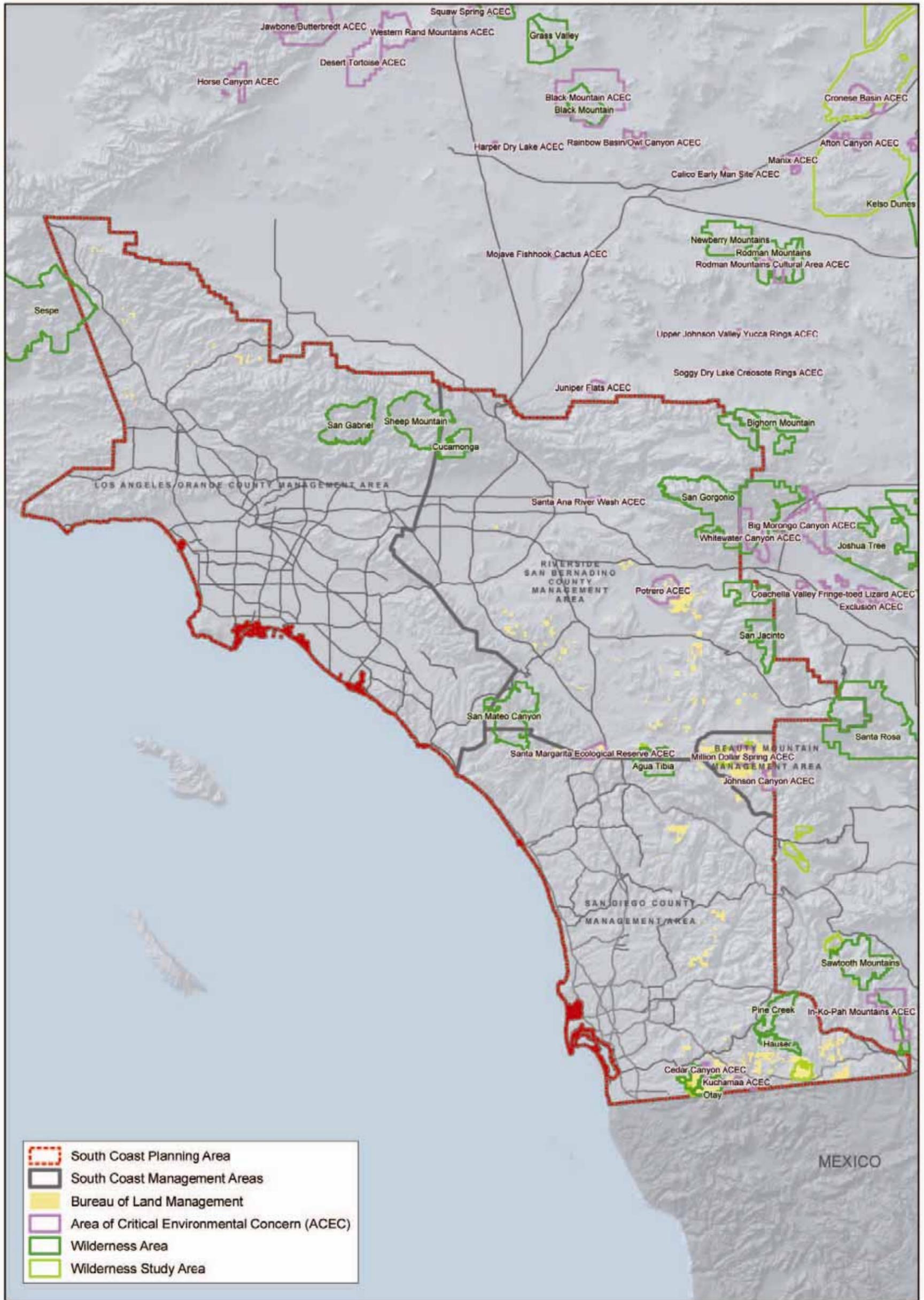


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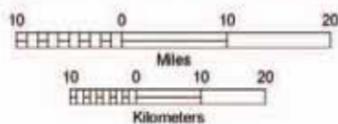


MAP 3-2: Relationship of Air Quality Monitoring Stations to the Planning Area Management Areas

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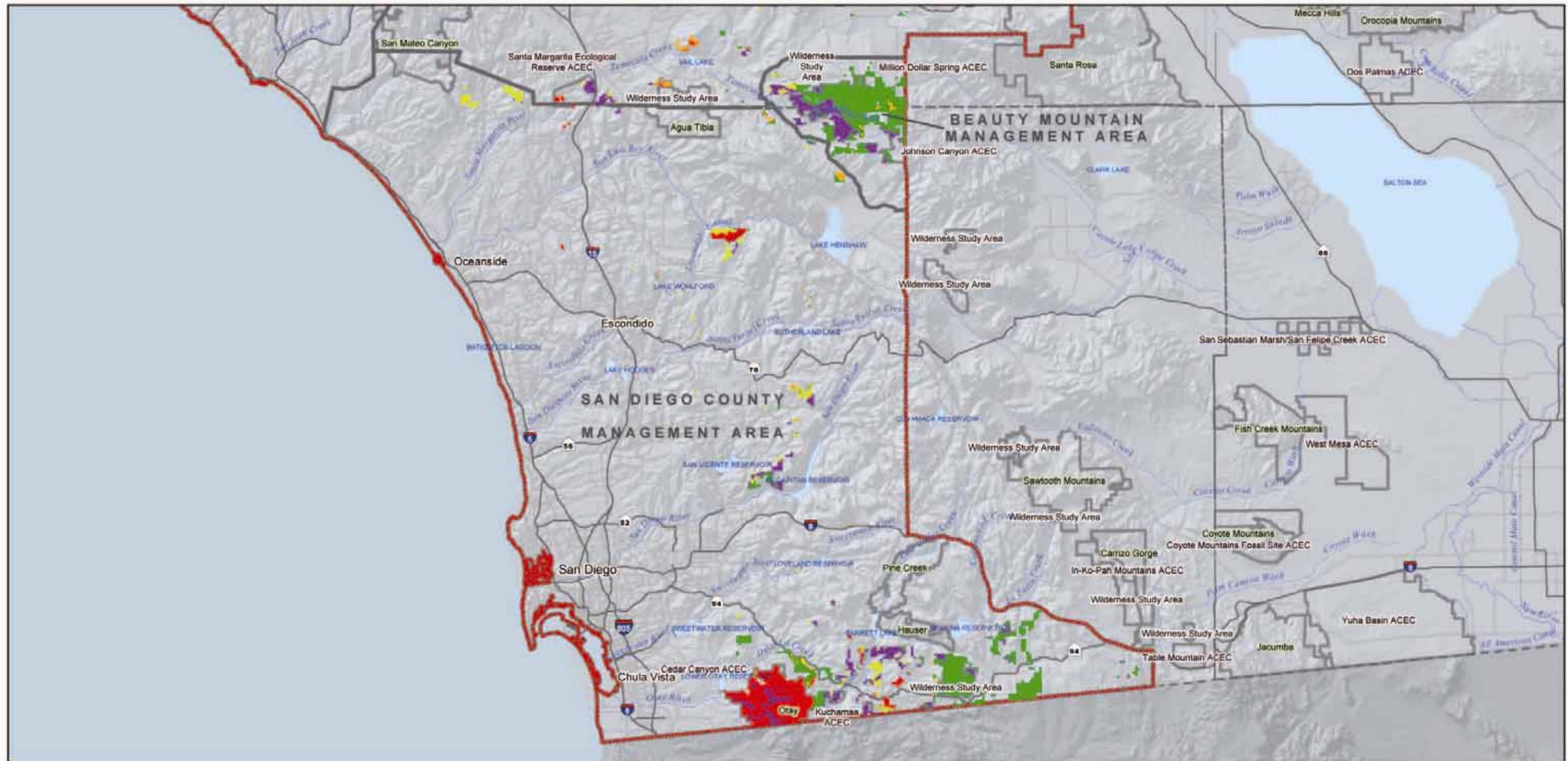


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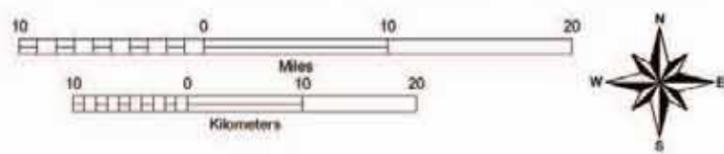


**MAP 3-3: Other Resource Management Areas in and Around
South Coast Management Area**

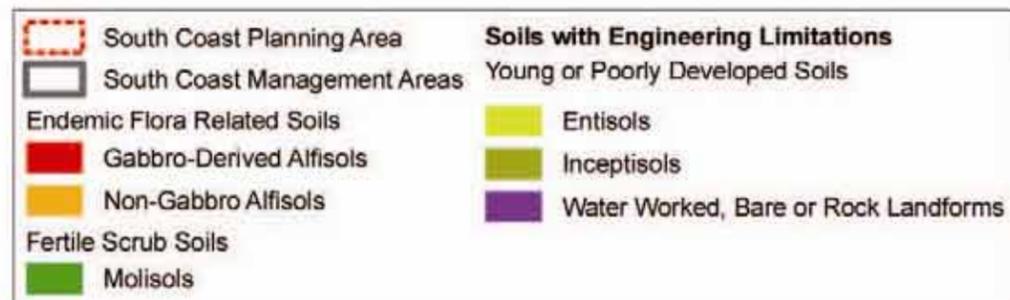
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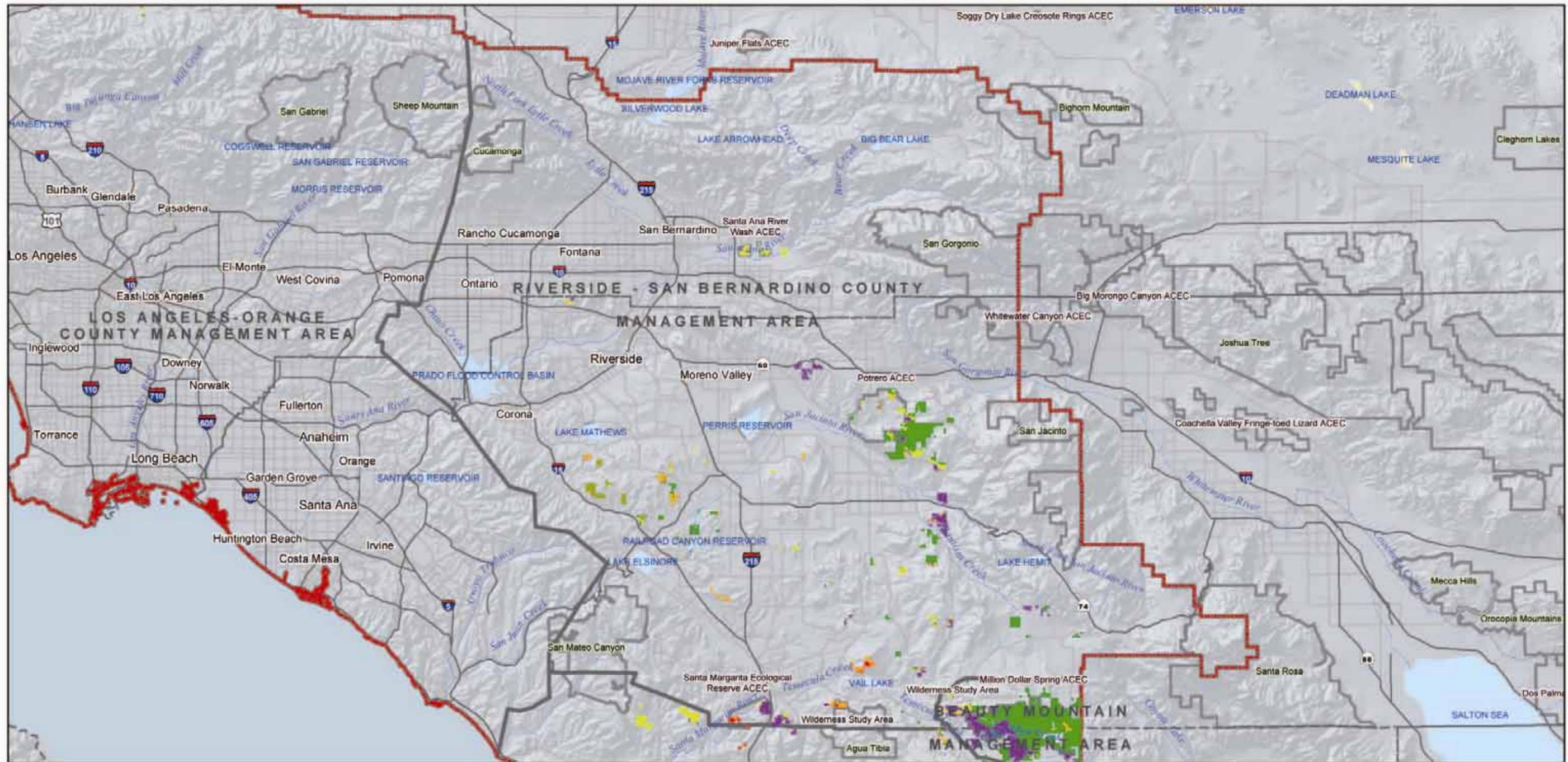
MAP 3-4: Soil Management Characteristics for the San Diego County and Beauty Mountain Management Areas



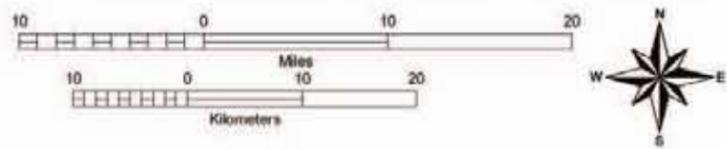
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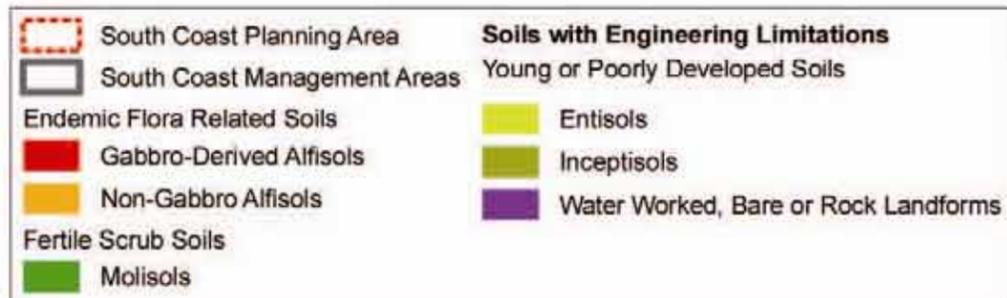
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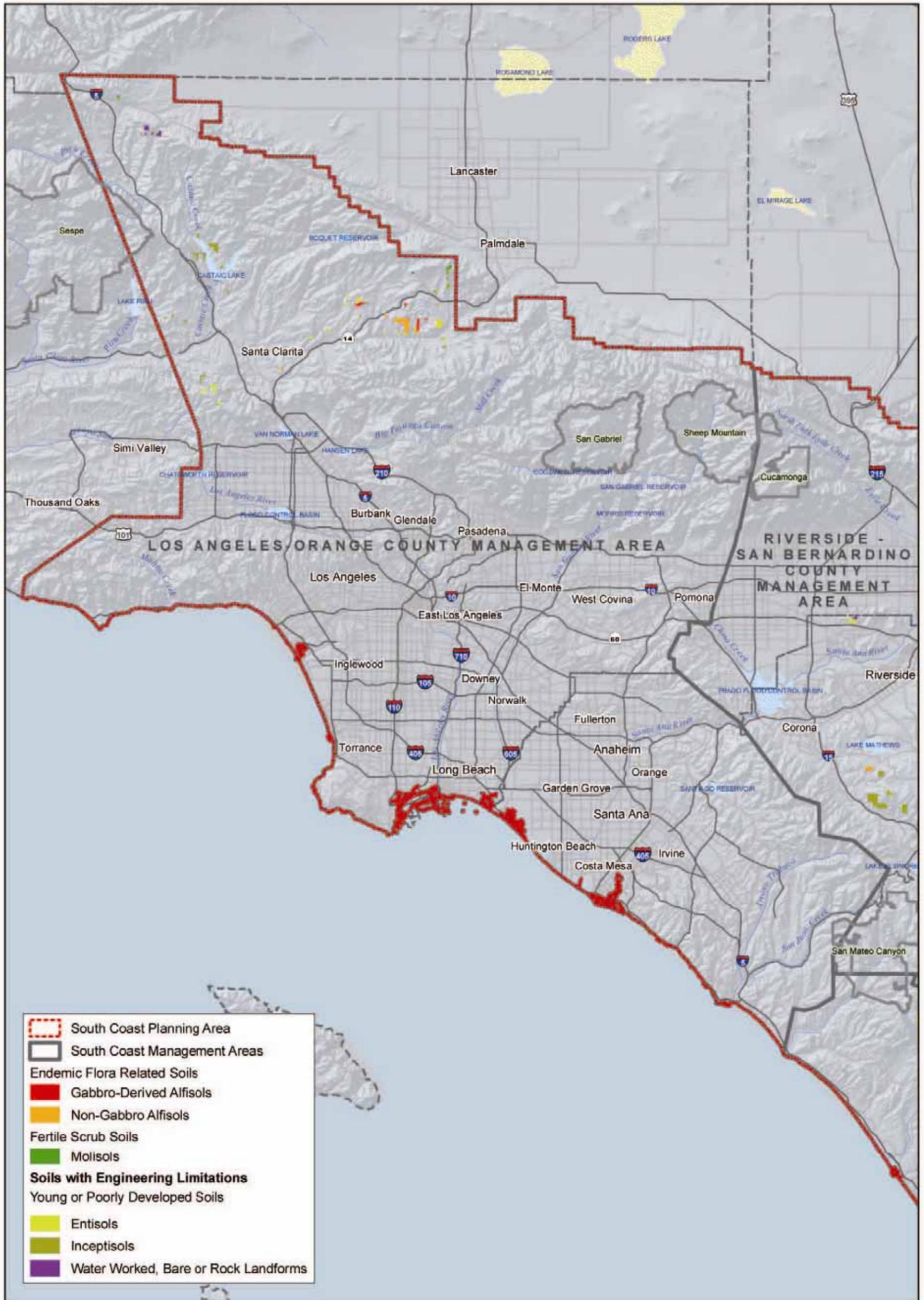
MAP 3-5: Soil Management Characteristics for the Riverside - San Bernardino County Management Area



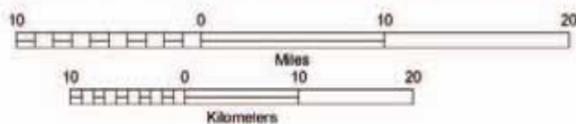
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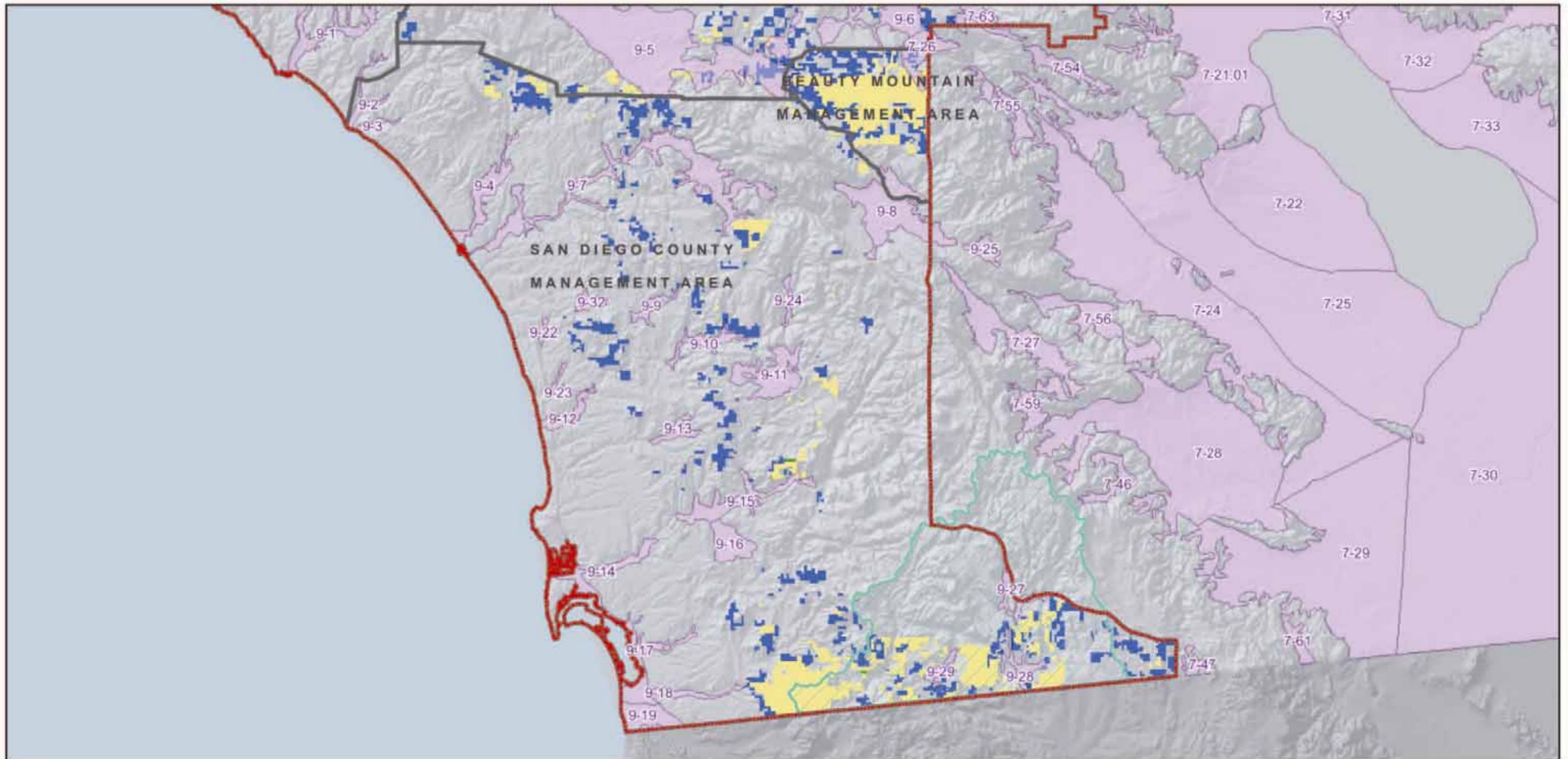


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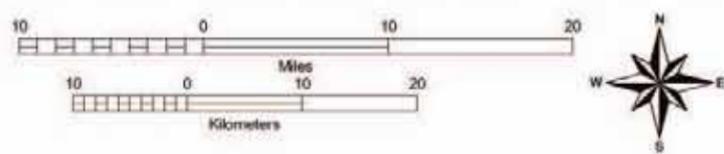


**MAP 3-6: Soil Management Characteristics for the Los Angeles -
Orange County Management Area**

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MAP 3-7: Groundwater Basins in San Diego County and Beauty Mountain Management Areas

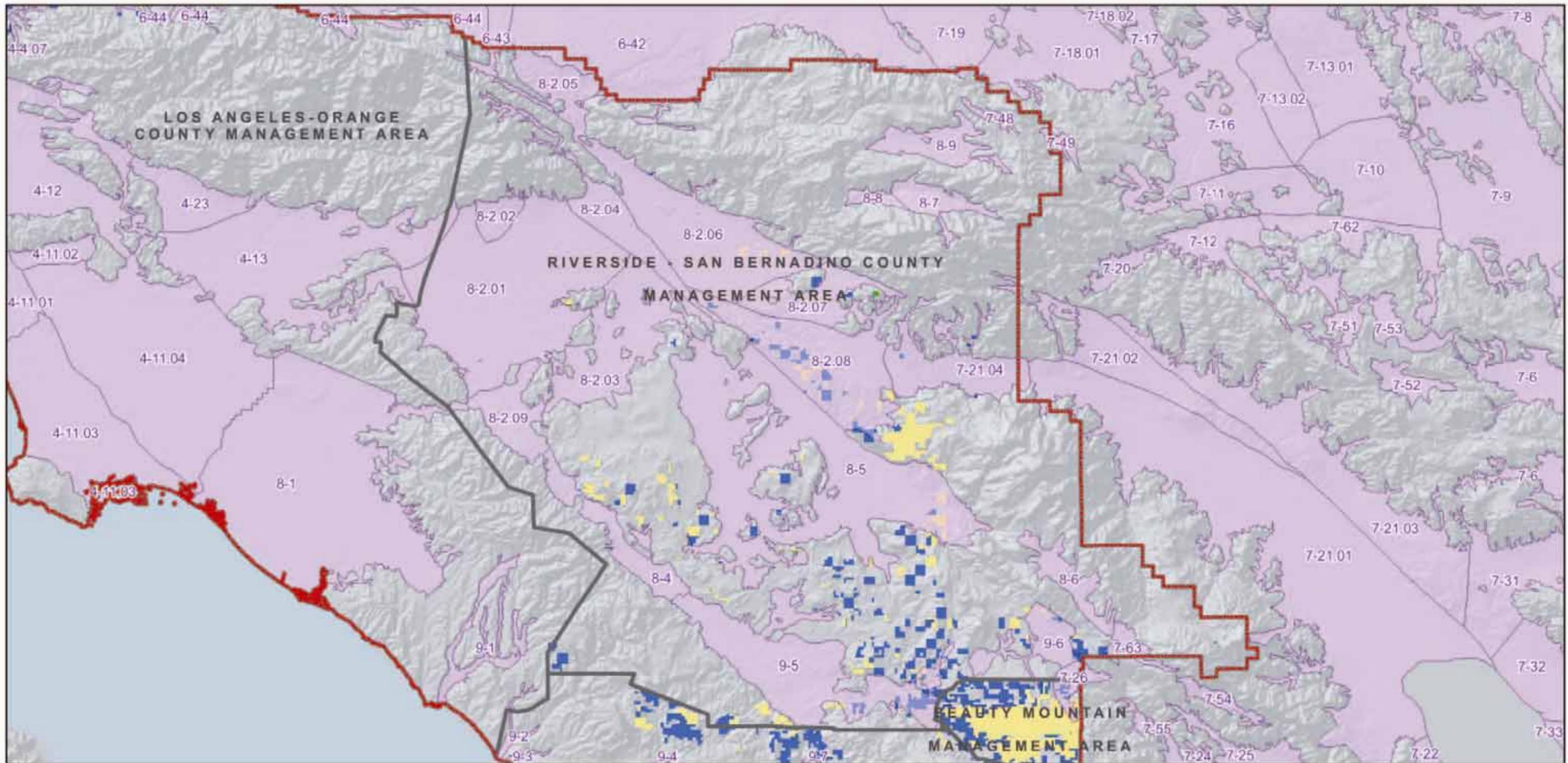
-  South Coast Planning Area
-  South Coast Management Areas
-  Groundwater Basins
-  Bureau of Land Management
-  BLM Surface Rights
-  BLM Subsurface Rights
-  Campo-Cottonwood Sole Source Aquifer



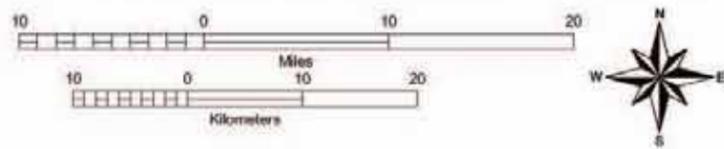
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**MAP 3-8: Groundwater Basins in the Riverside -
San Bernadino County Management Area**

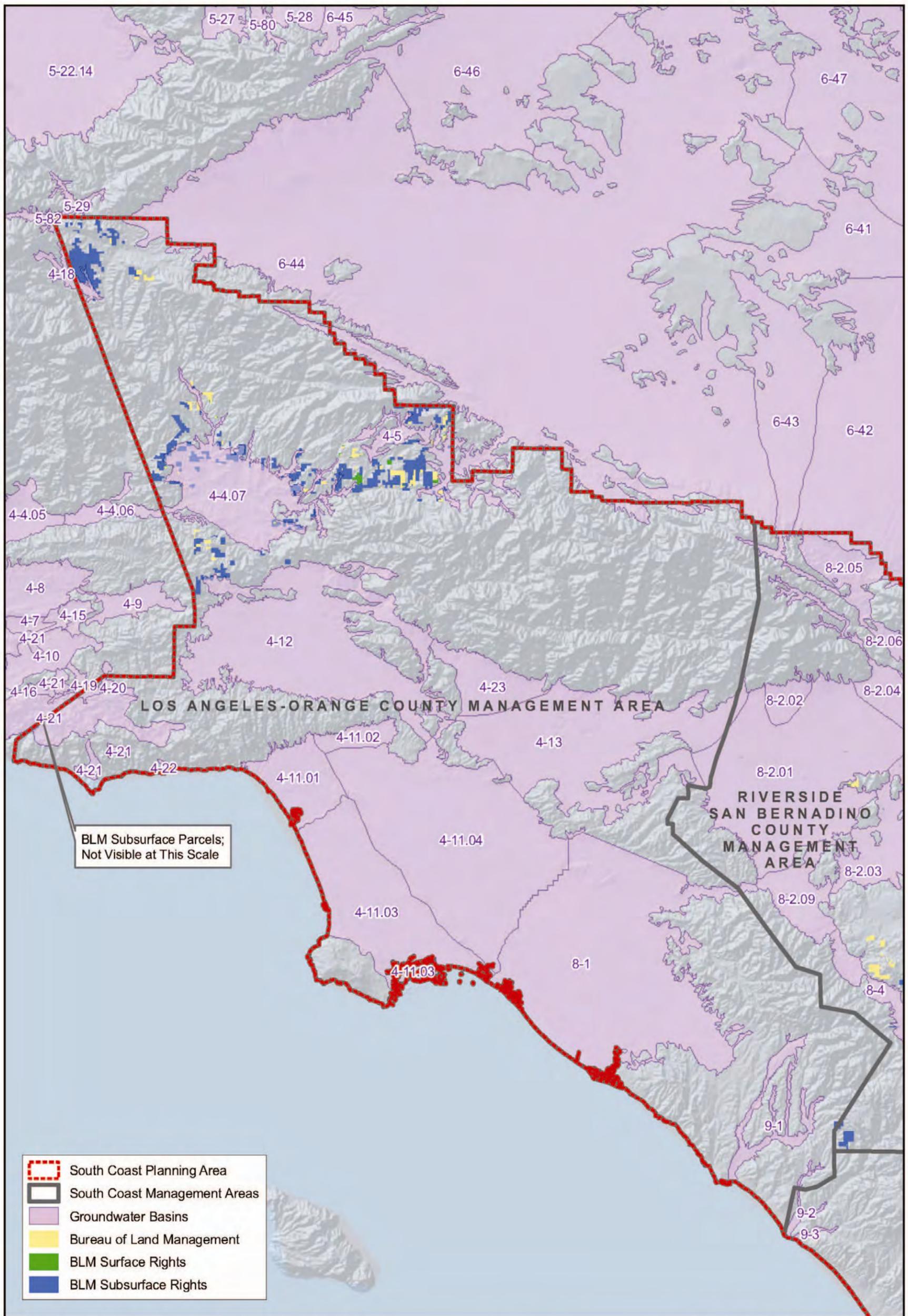
-  South Coast Planning Area
-  South Coast Management Areas
-  Groundwater Basins
-  Bureau of Land Management
-  BLM Surface Rights
-  BLM Subsurface Rights



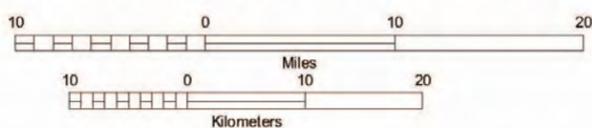
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MAP 3-9: Groundwater Basins in the Los Angeles - Orange County Management Area

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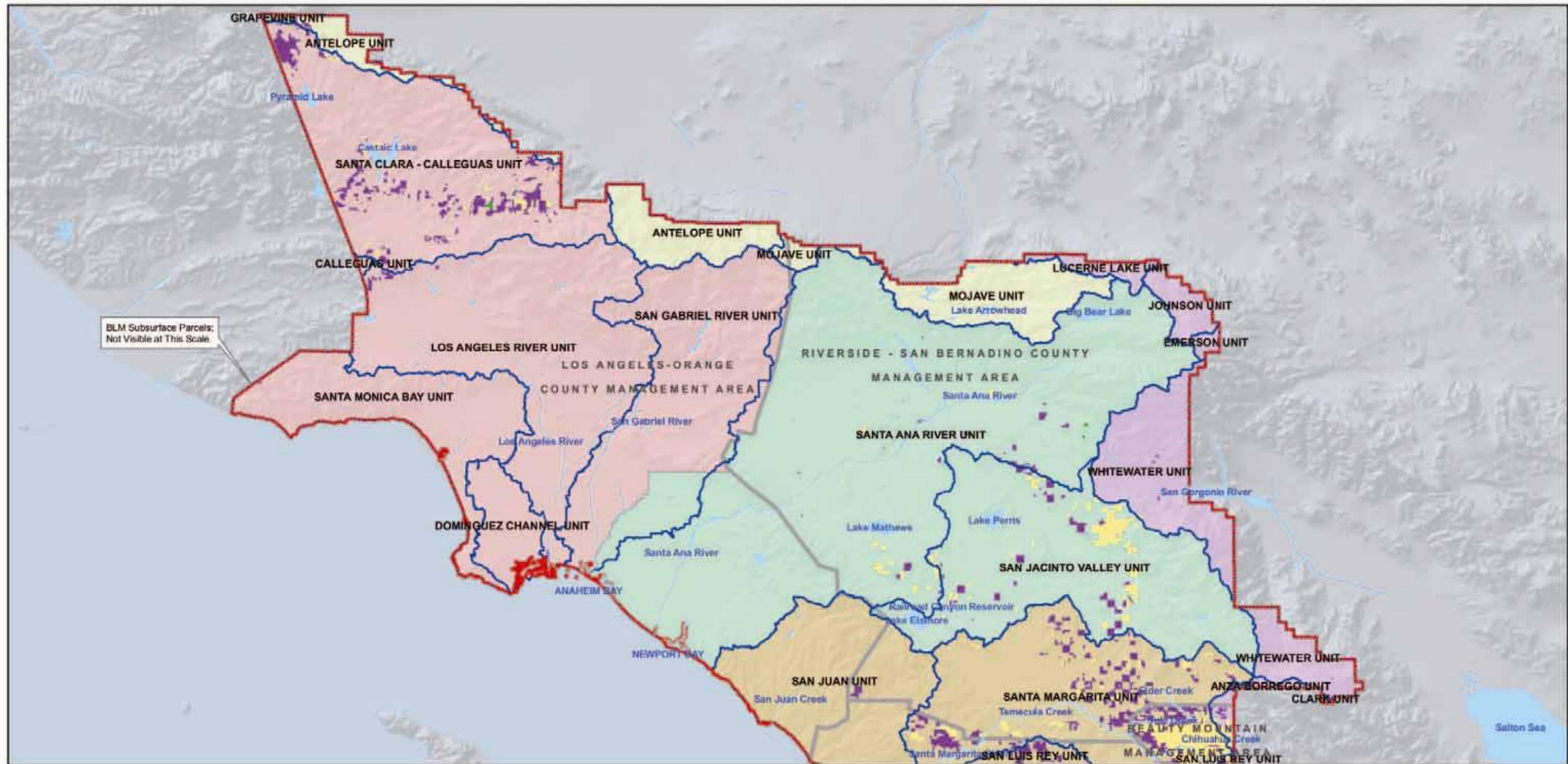
MAP 3-10 : Watershed Basins and Hydrologic Units in San Diego County and Beauty Mountain Management Areas



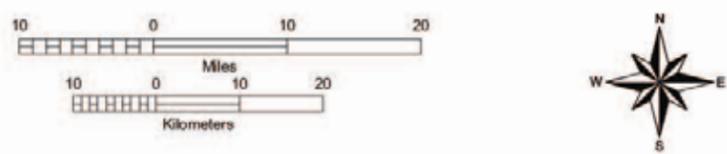
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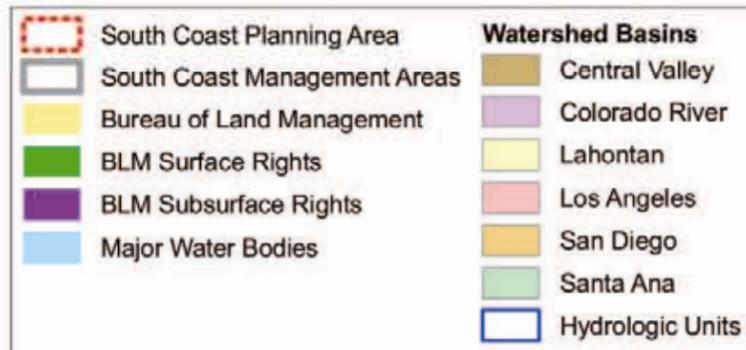
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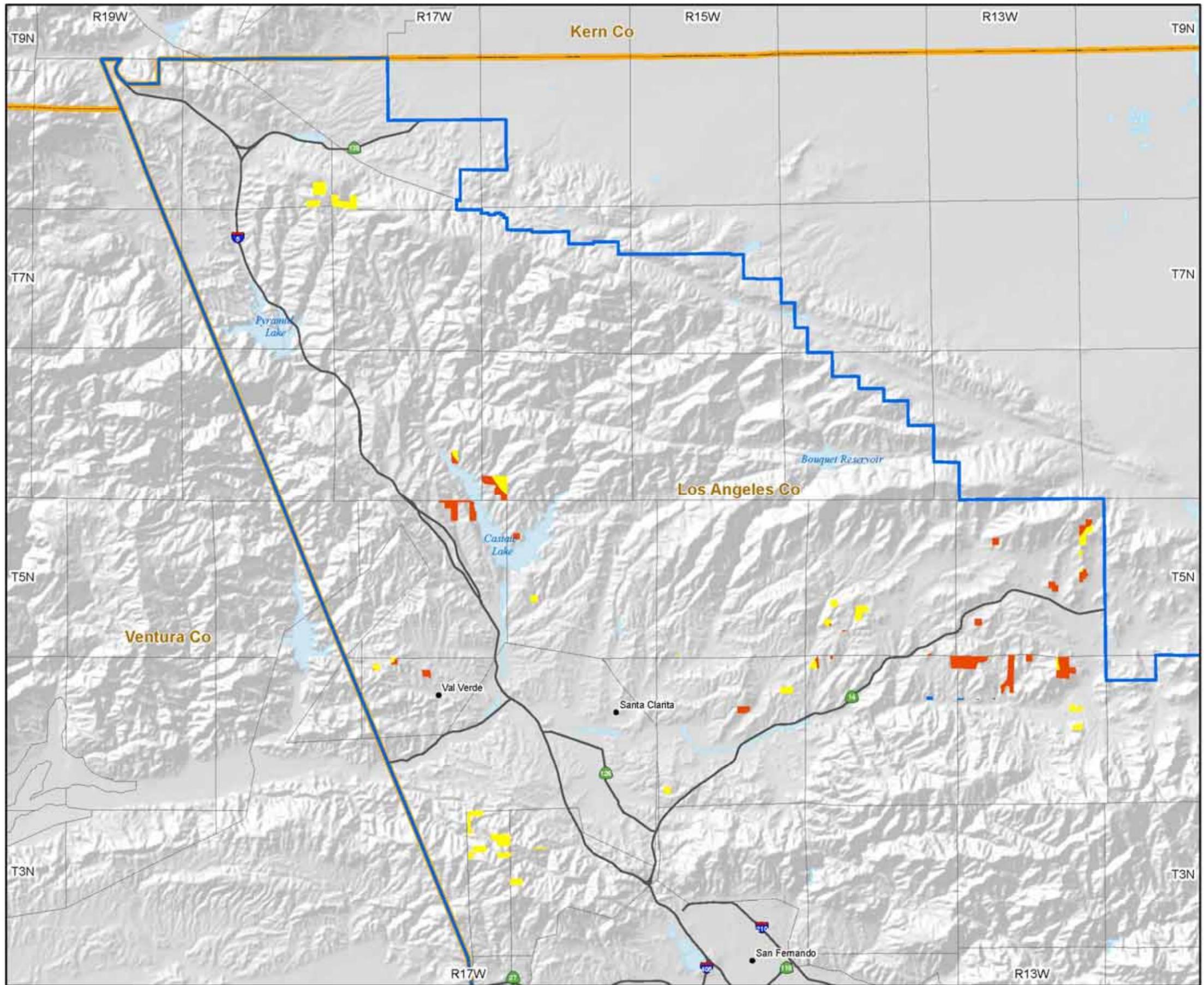
MAP 3-11 : Watershed Basins and Hydrologic Units in the Riverside - San Bernadino and Los Angeles - Orange County Management Areas



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Map 3-12 Vegetation Types

Los Angeles/ Orange County
Management Area

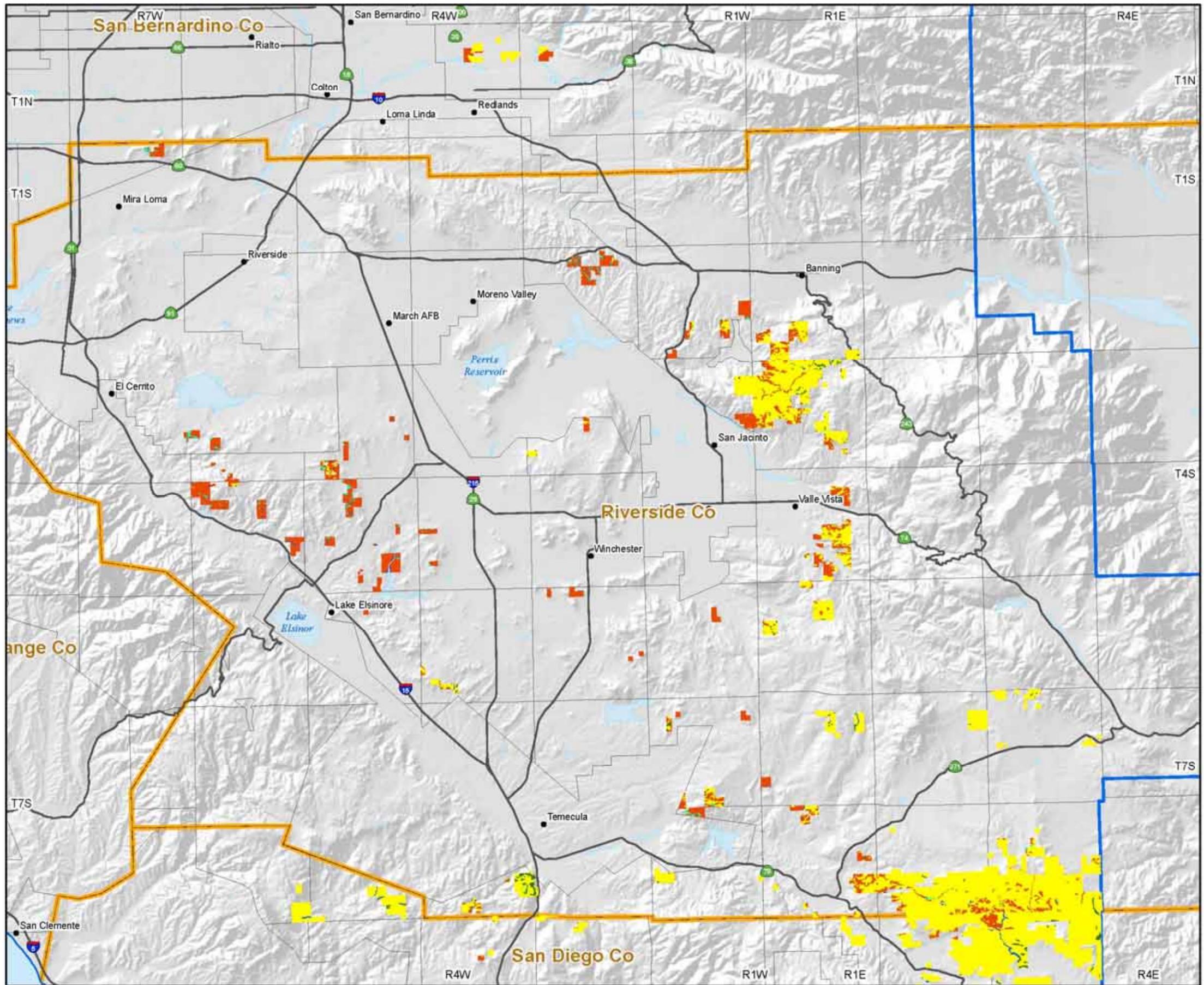
- Chaparral
- Coastal Sage Scrub
- Grassland
- Riparian
- SCRMP Boundary
- County



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Map 3-13 Vegetation Types

Riverside/San Bernardino County
Management Area

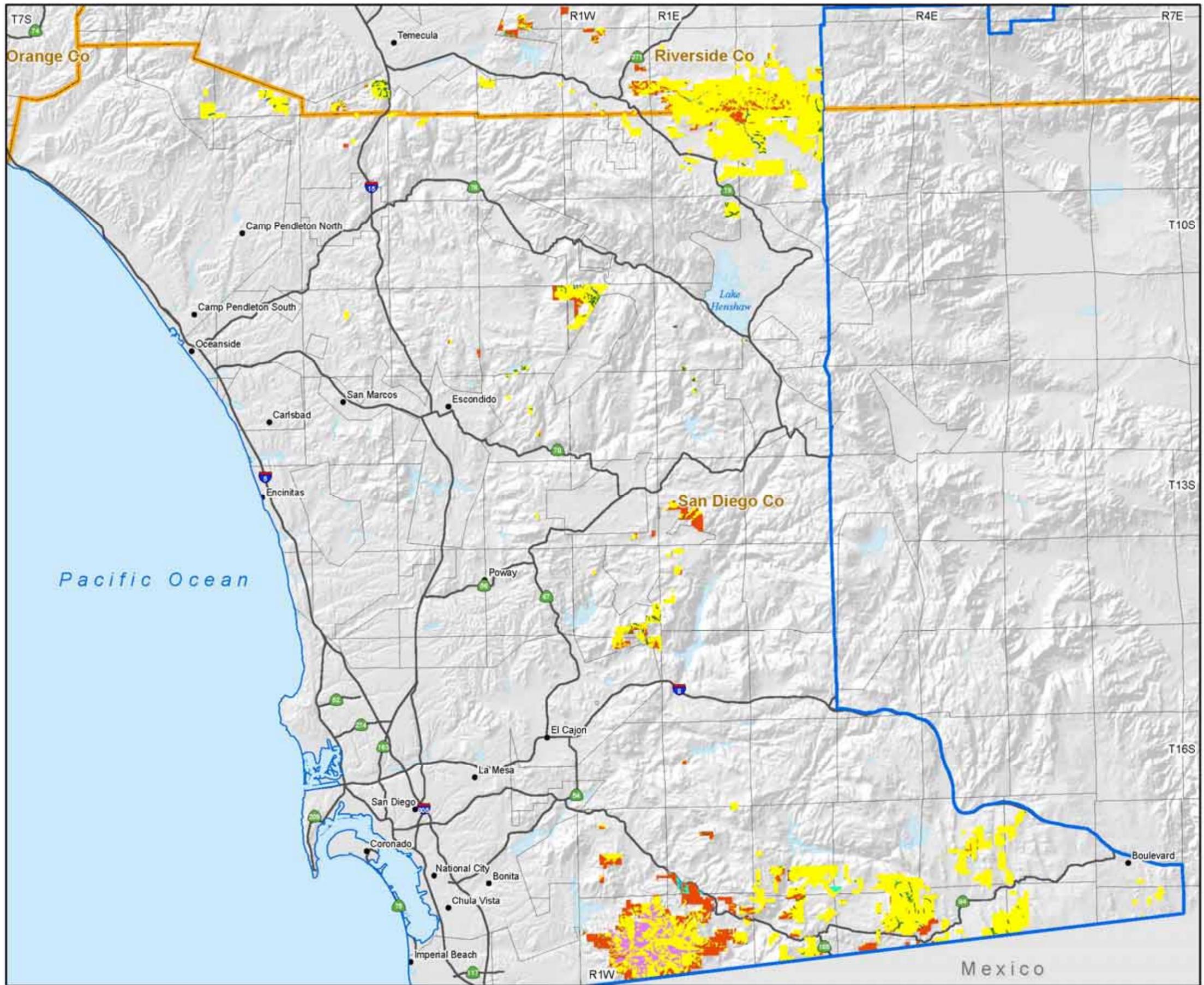
- Chaparral
- Coastal Sage Scrub
- Grassland
- Oak Woodland
- Riparian
- SCRMP Boundary
- County



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Map 3-14
Vegetation Types
 San Diego County Management Area

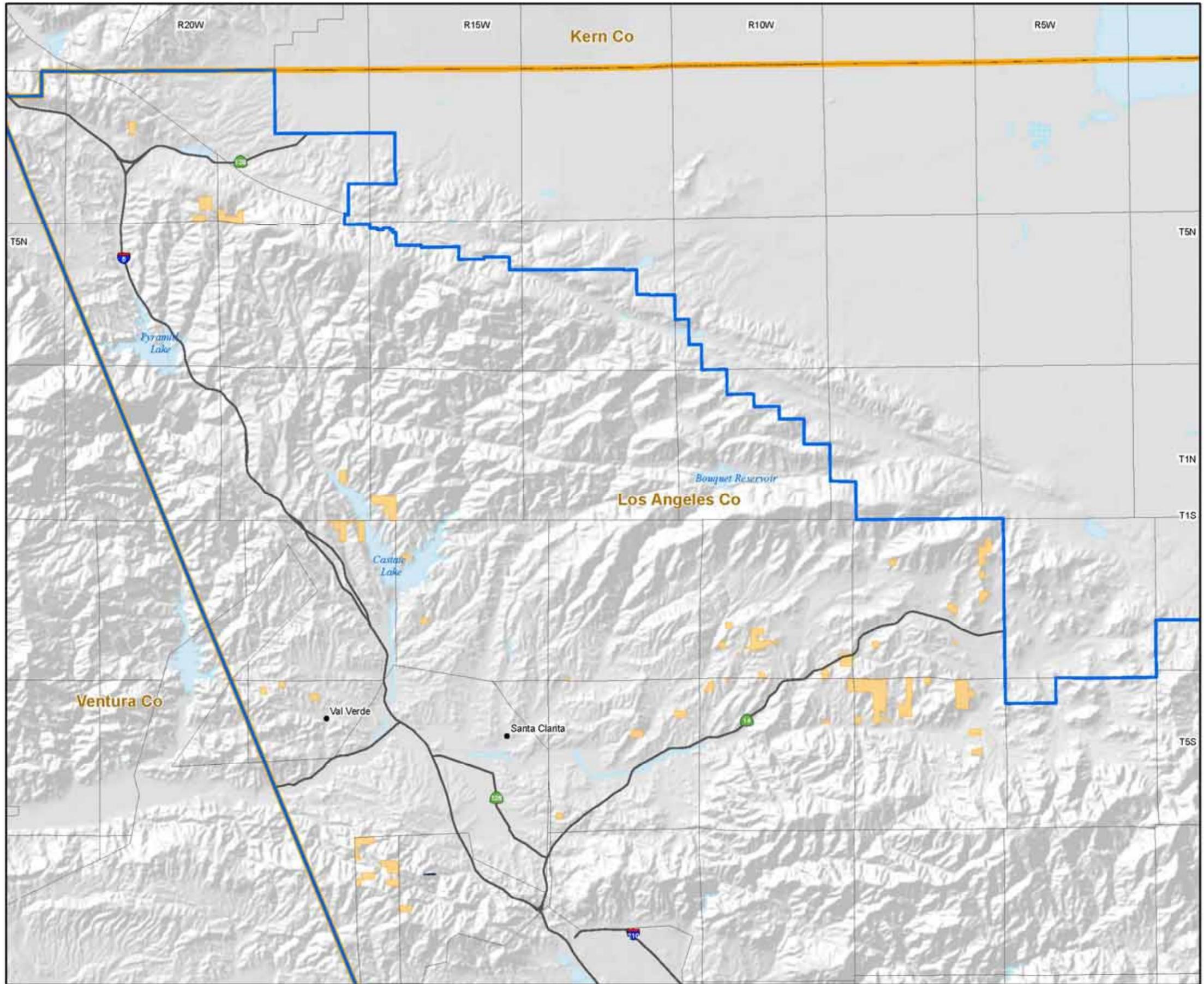
- Chaparral
- Coastal Sage Scrub
- Grassland
- Oak Woodland
- Riparian
- Southern Interior Cypress
- SCRMP Boundary
- County



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Map 3-15 USFWS Critical Habitat

Los Angeles/Orange County
Management Area

-  Coastal California Gnatcatcher
-  SCRMP Boundary
-  Other BLM lands
-  County



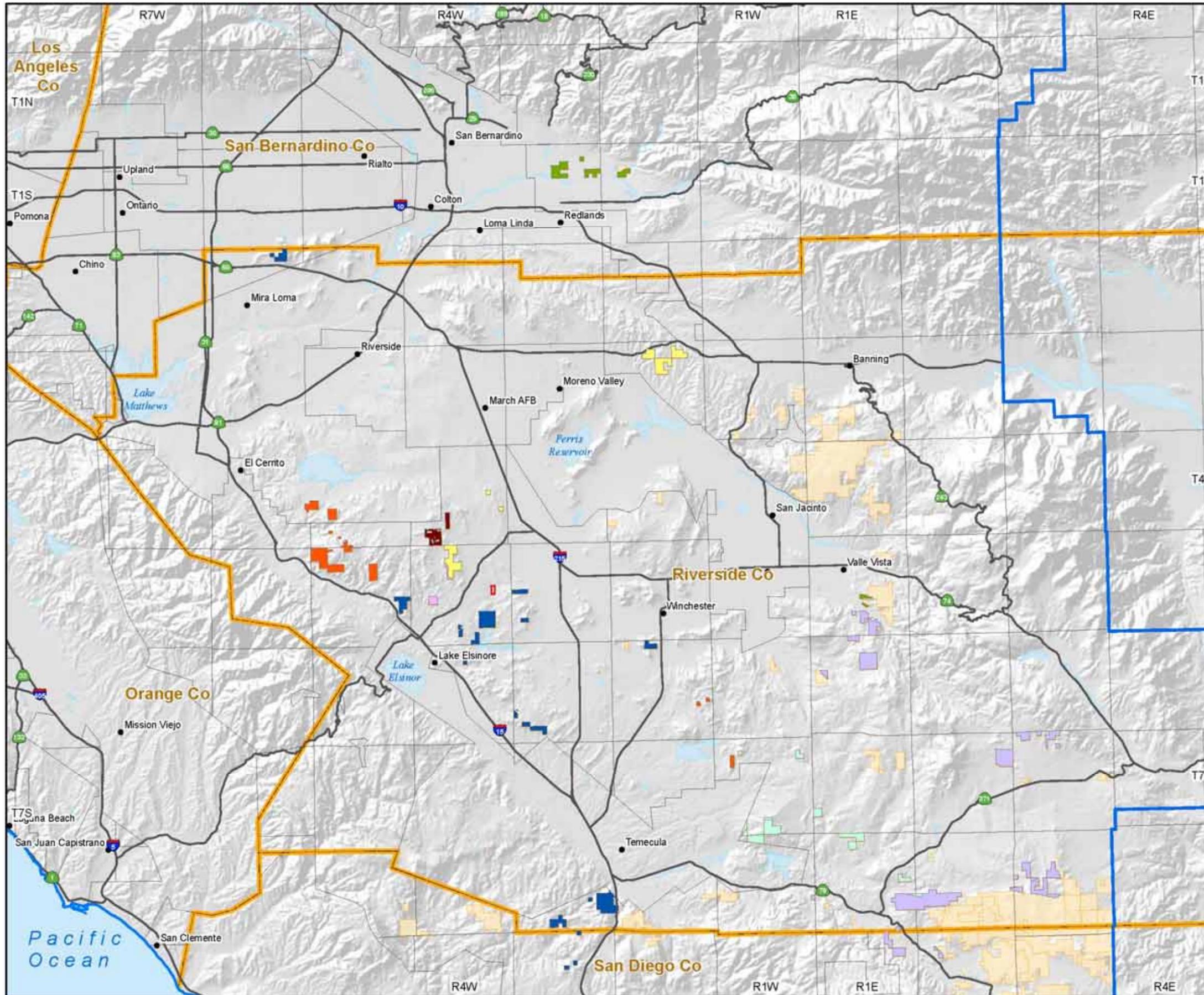
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Map 3-16 USFWS Critical Habitat

Riverside/San Bernardino County Management Area



- CAGN
- CAGN BRFI
- QCB
- QCB CAGN
- SBKR
- SKR
- SKR CAGN
- SKR QCB
- SKR QCB CAGN
- SCRMP Boundary
- Other BLM lands
- County

CAGN = Coastal California Gnatcatcher
 BRFI = Thread-leaf brodiaea
 FRME = Mexican Flannelbush
 QCB = quino checkerspot butterfly
 SBKR = San Bernardino kangaroo rat
 SKR = Stephens' kangaroo rat
 SWFL = southwestern willow flycatcher



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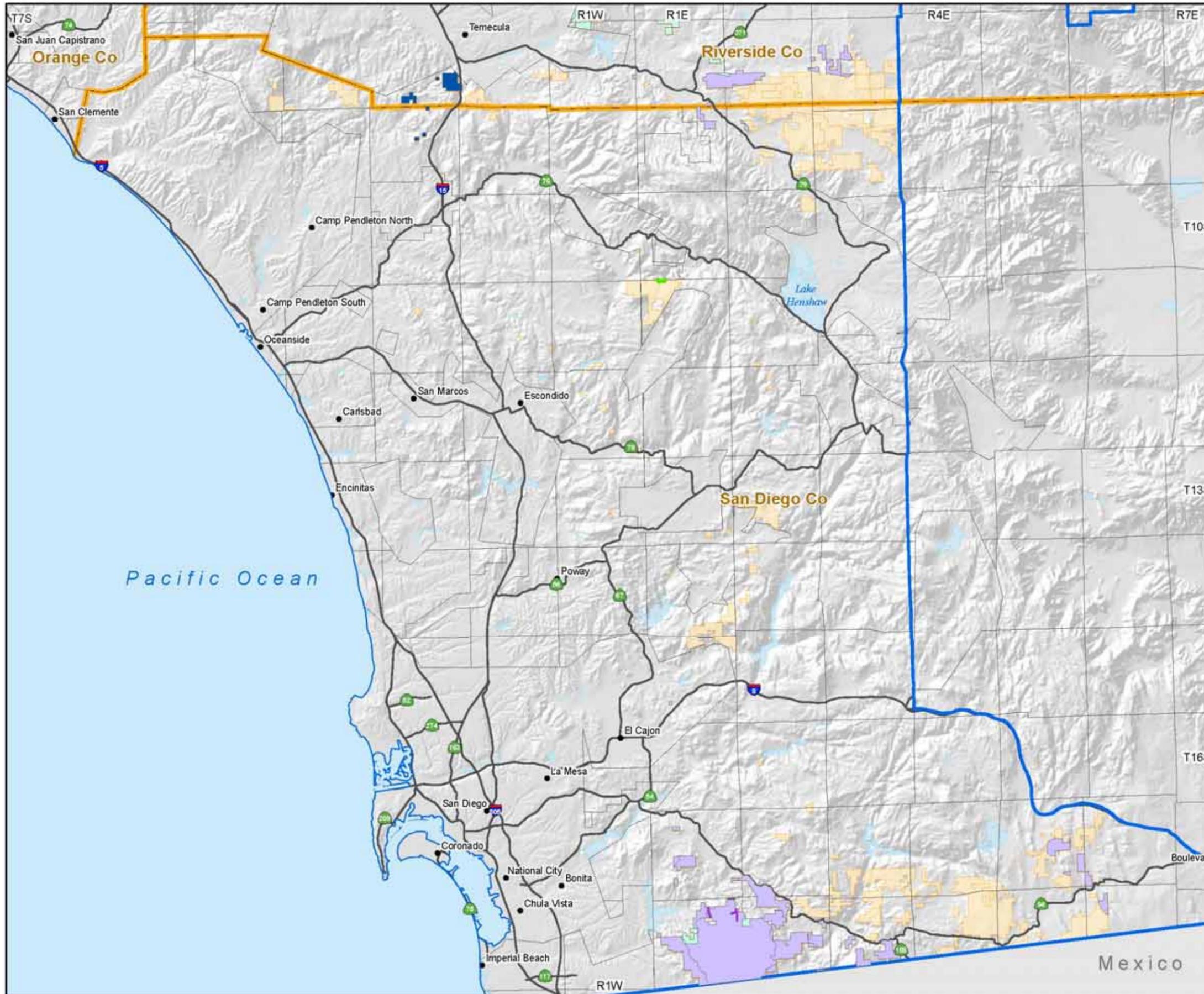
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Map 3-17

USFWS Critical Habitat

San Diego County Management Area



- CAGN
- FRME
- QCB
- QCB CAGN
- QCB FRME
- SWFL
- SCRMP Boundary
- Other BLM lands
- County

CAGN = Coastal California Gnatcatcher
 FRME = Mexican Flannelbush
 QCB = quino checkerspot butterfly
 SWFL = southwestern willow flycatcher



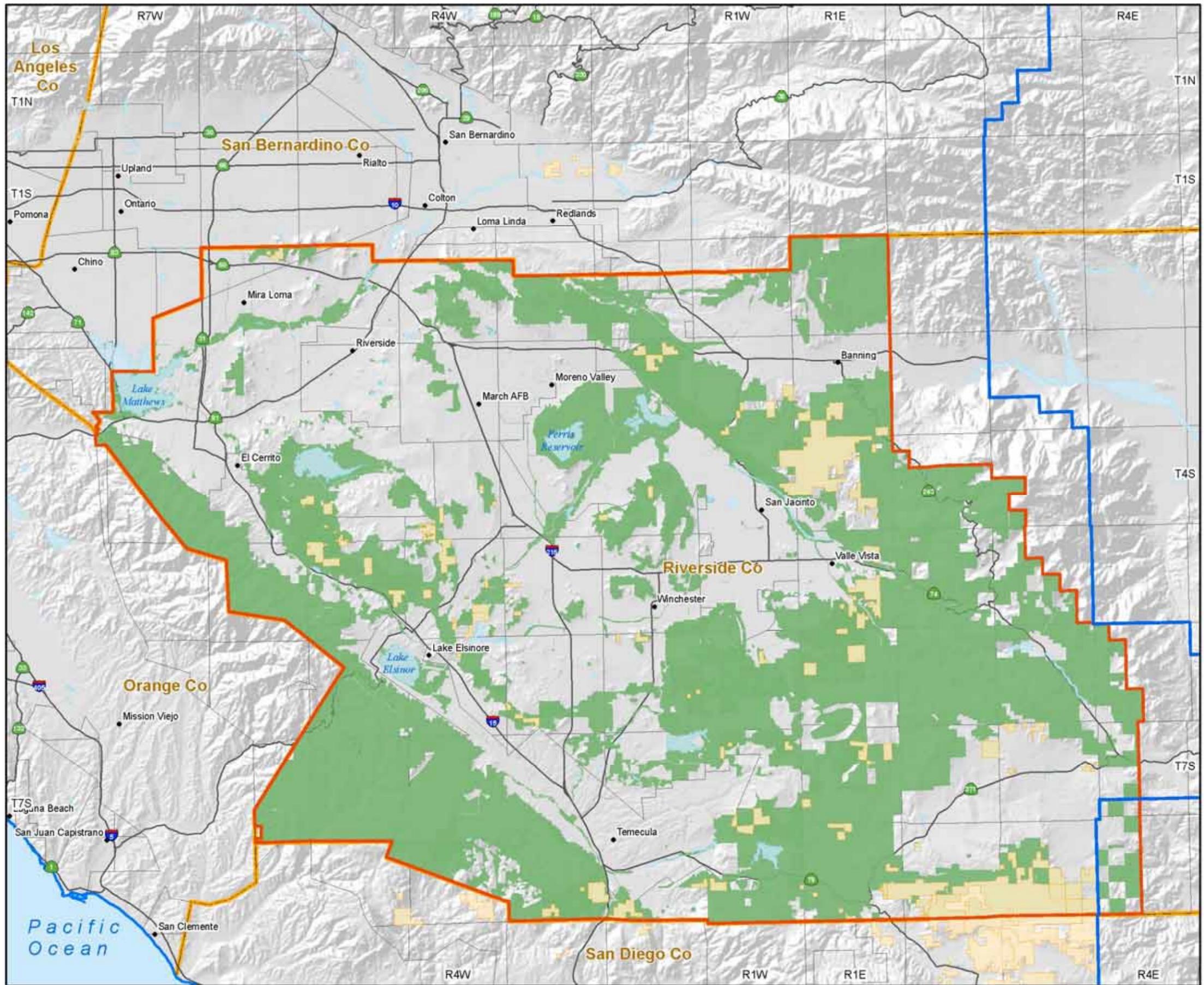
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Map 3-18
Western Riverside
Multiple Species
Habitat Conservation Area
 Riverside/San Bernardino County
 Management Area

-  MSHCP Boundary
-  Conservation Areas
-  SCRMP Boundary
-  BLM
-  County

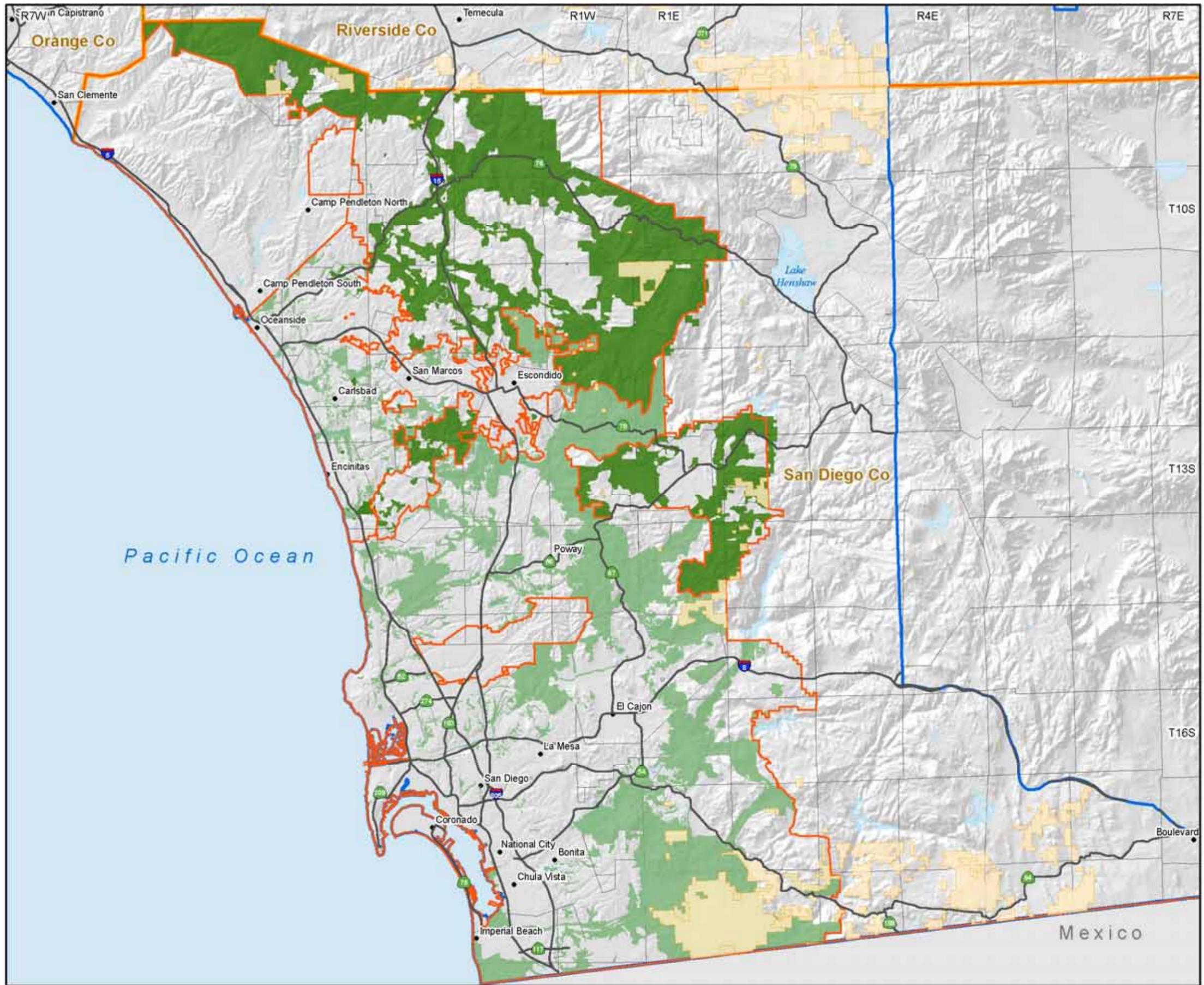
Conservation Area boundaries are approximate



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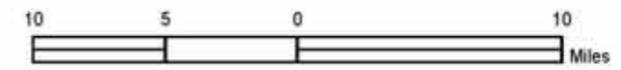


Map 3-19

San Diego County Multiple Species Conservation Plan

San Diego County Management Area

-  MSCP Boundaries
-  Conservation Area Boundaries
-  Proposed Conservation Area Boundaries
-  SCRMP Boundary
-  BLM
-  County



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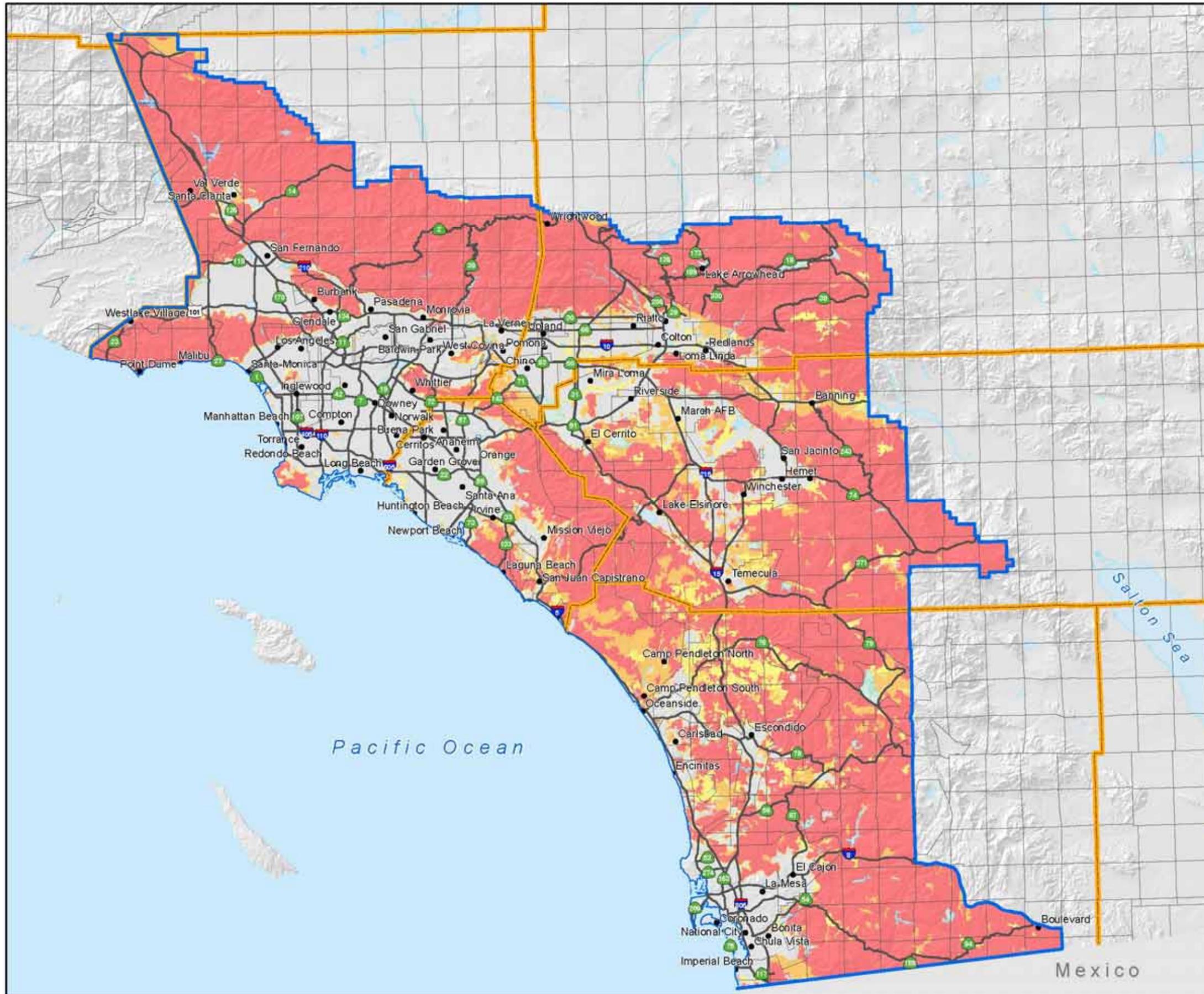


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Map 3-20

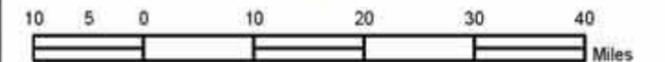
Fire Hazard Severity Zones

South Coast Resource Management Area



Fire Severity

- Moderate
- High
- Very High
- SCRMP Boundary
- County



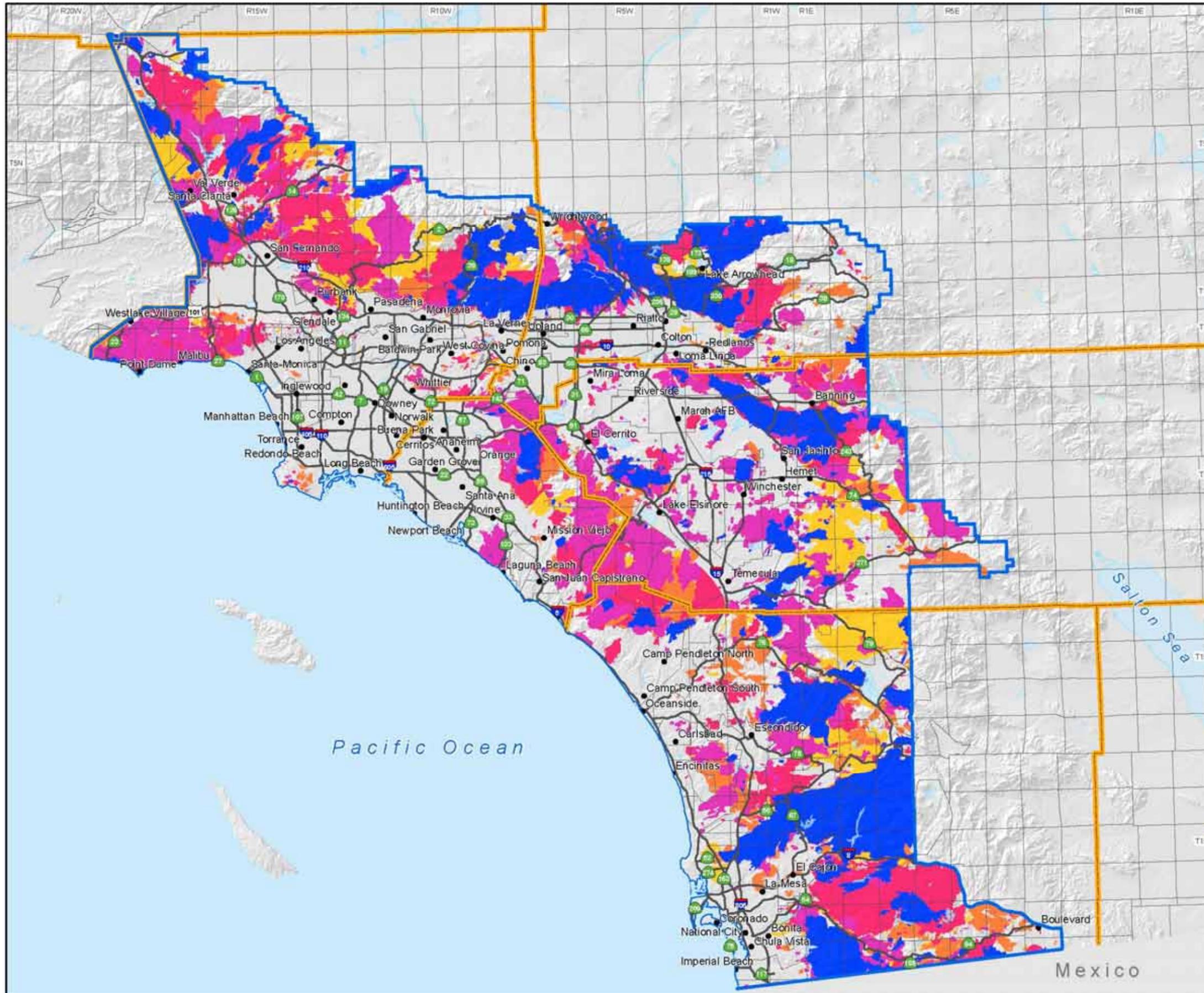
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Map 3-21

Fire History South Coast Resource Management Area



Fire History

Year of Last Fire

- 1878 - 1936
- 1937 - 1956
- 1957 - 1976
- 1977 - 1996
- 1997 - 2006
- SCRMP Boundary
- County

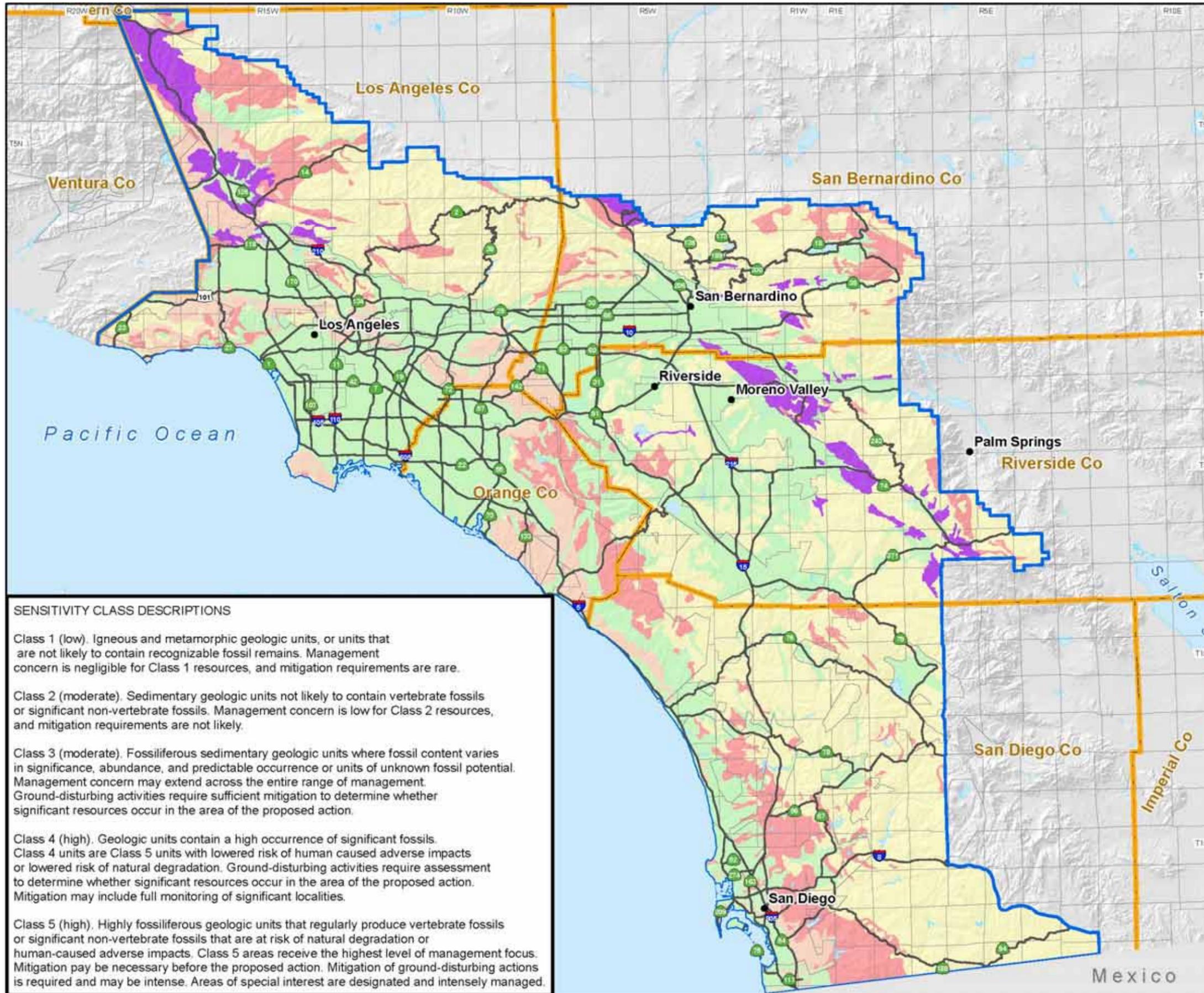


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Map 3-22 Paleontological Sensitivity South Coast Planning Area



Sensitivity Classes

- 1
- 2
- 3
- 4
- 5
- SCRMP Boundary
- County

SENSITIVITY CLASS DESCRIPTIONS

Class 1 (low). Igneous and metamorphic geologic units, or units that are not likely to contain recognizable fossil remains. Management concern is negligible for Class 1 resources, and mitigation requirements are rare.

Class 2 (moderate). Sedimentary geologic units not likely to contain vertebrate fossils or significant non-vertebrate fossils. Management concern is low for Class 2 resources, and mitigation requirements are not likely.

Class 3 (moderate). Fossiliferous sedimentary geologic units where fossil content varies in significance, abundance, and predictable occurrence or units of unknown fossil potential. Management concern may extend across the entire range of management. Ground-disturbing activities require sufficient mitigation to determine whether significant resources occur in the area of the proposed action.

Class 4 (high). Geologic units contain a high occurrence of significant fossils. Class 4 units are Class 5 units with lowered risk of human caused adverse impacts or lowered risk of natural degradation. Ground-disturbing activities require assessment to determine whether significant resources occur in the area of the proposed action. Mitigation may include full monitoring of significant localities.

Class 5 (high). Highly fossiliferous geologic units that regularly produce vertebrate fossils or significant non-vertebrate fossils that are at risk of natural degradation or human-caused adverse impacts. Class 5 areas receive the highest level of management focus. Mitigation may be necessary before the proposed action. Mitigation of ground-disturbing actions is required and may be intense. Areas of special interest are designated and intensely managed.



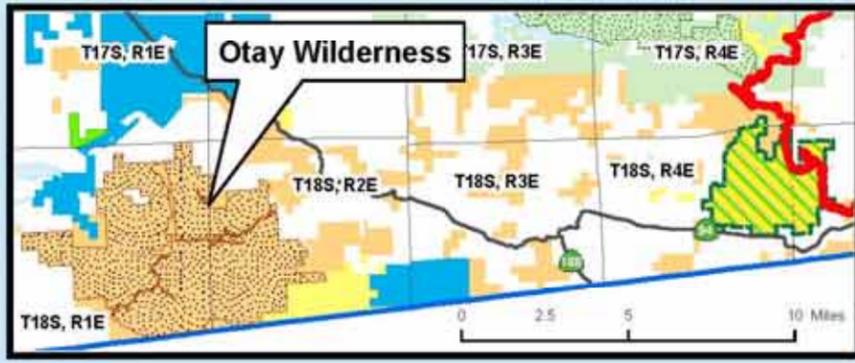
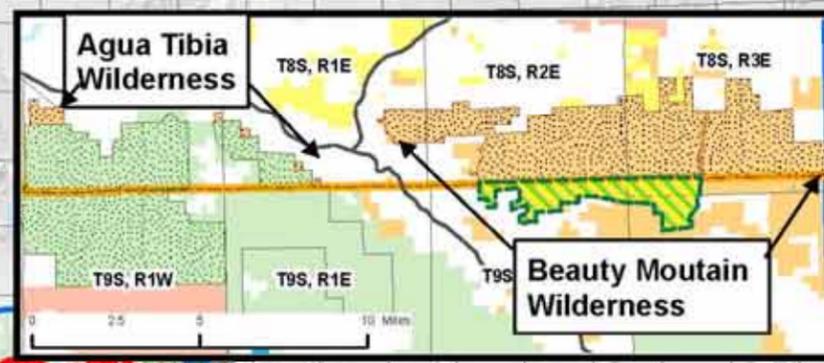
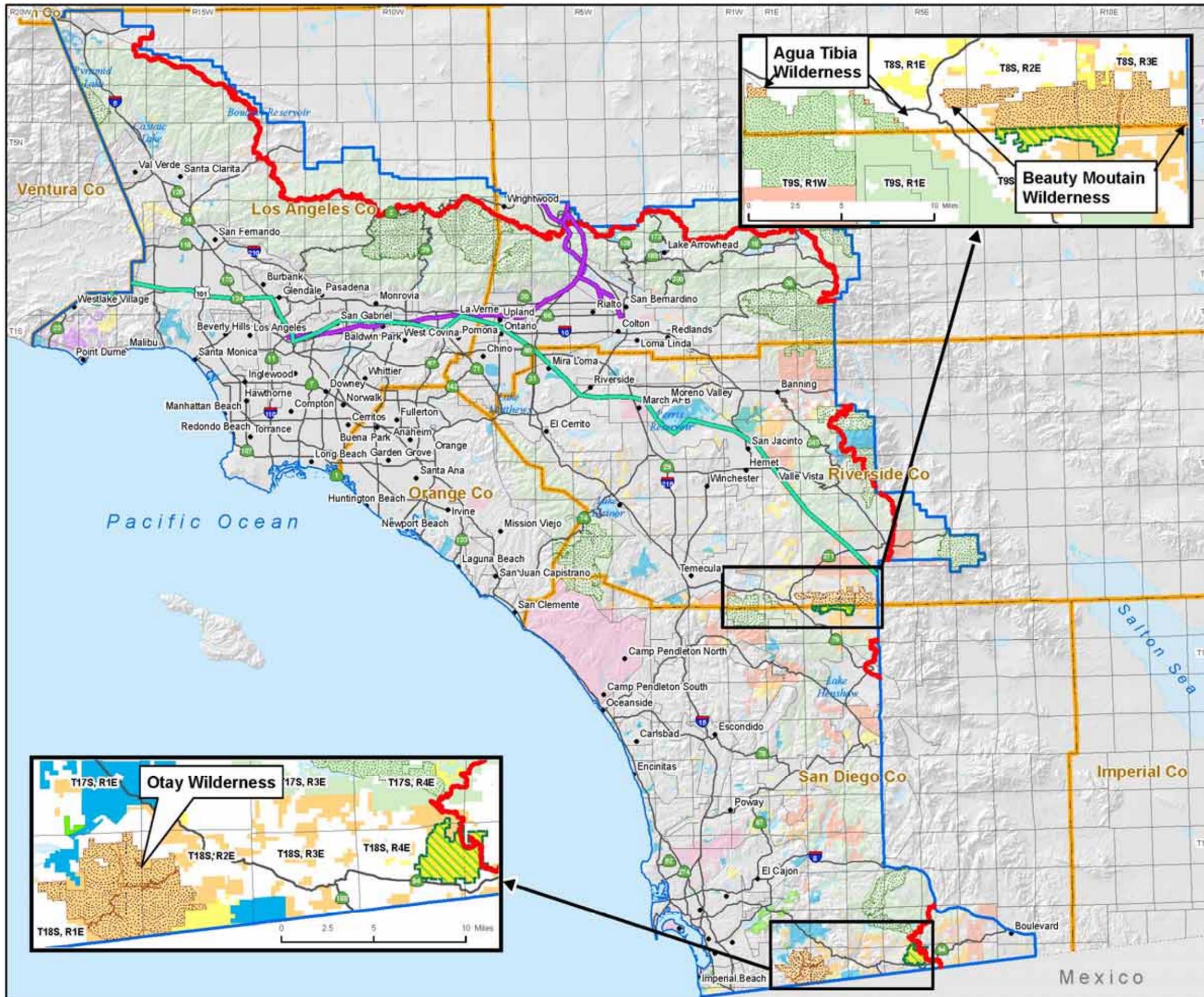
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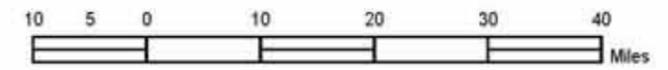
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Map 3-23

Special Designations South Coast Resource Management Planning Area



- SCRMP Boundary
 - Pacific Crest National Scenic Trail
 - Juan Bautista de Anza National Historic Trail
 - Old Spanish National Historic Trail
 - Wilderness Study Area
- SCRMP Land Status**
- Bureau of Land Management
 - US Forest Service
 - National Park Service
 - Military
 - Other Federal
 - State
 - County/State/Regional
 - Private/Other
 - Indian Land or Reservation
 - BLM Wilderness
 - USFS Wilderness
 - National Wildlife Refuges
 - County

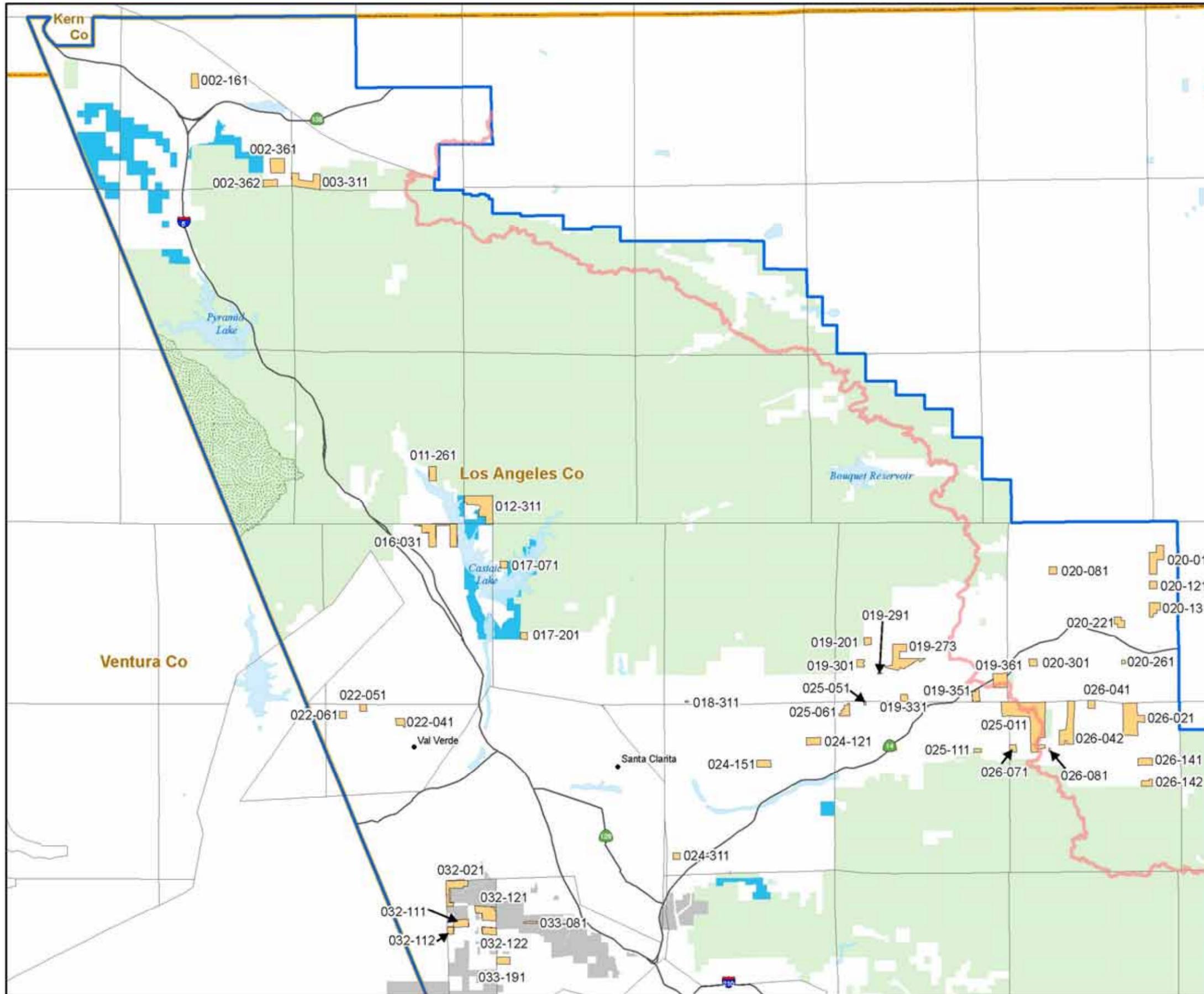


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Map 3-24 BLM Parcels Los Angeles Management Area



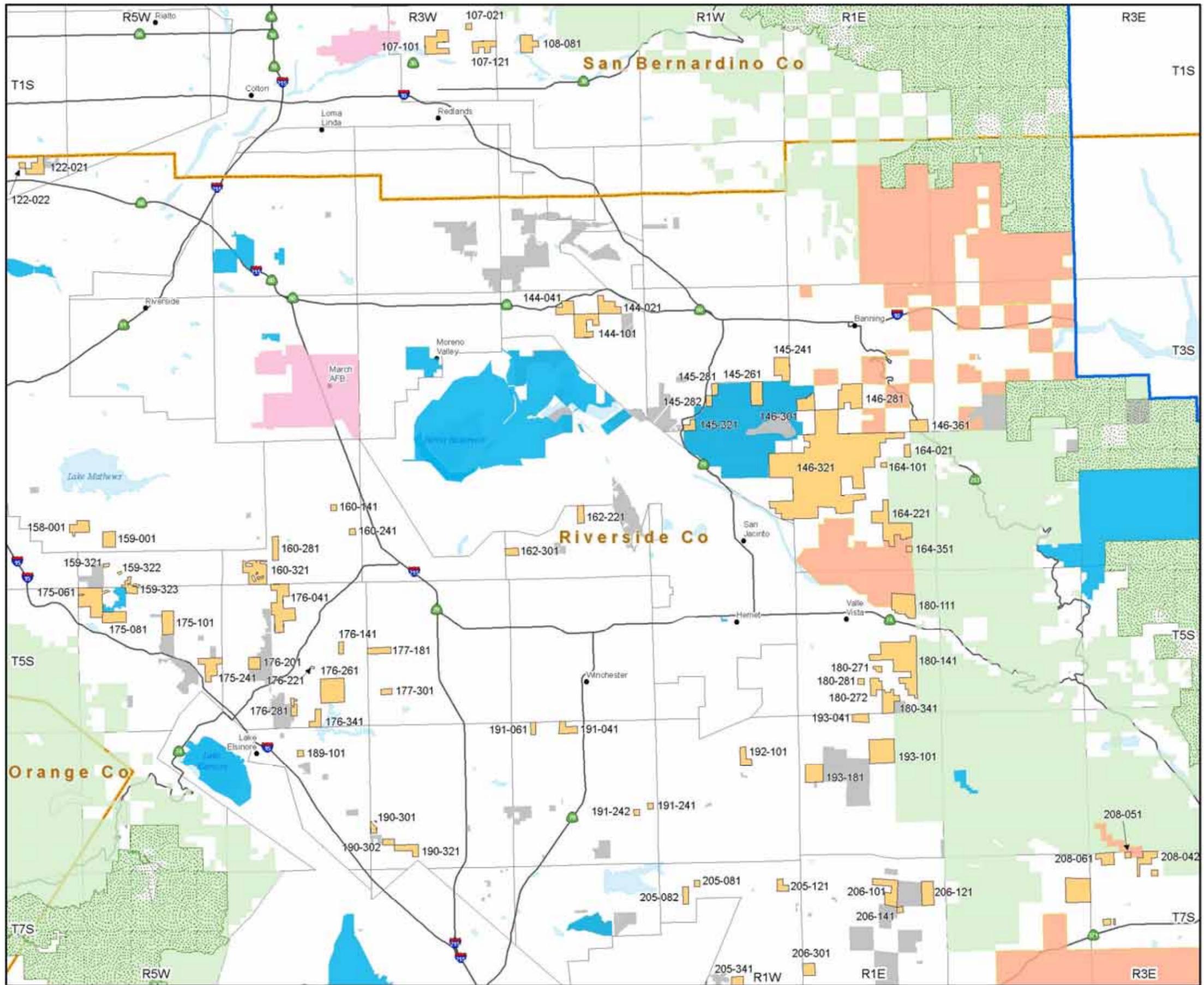
- SCRMP Boundary
- National Trails
- SCRMP Land Status**
- Bureau of Land Management
- US Forest Service
- State
- County/State/Regional
- Private/Other
- USFS Wilderness
- County



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Map 3-25
BLM Parcels
 San Bernardino & North Riverside
 County Management Area

- SCRMP Boundary
- SCRMP Land Status**
- Bureau of Land Management
- US Forest Service
- Military
- Other Federal
- State
- County/State/Regional
- Private/Other
- Indian Land/Reservation
- National Wildlife Refuges
- BLM Wilderness
- USFS Wilderness

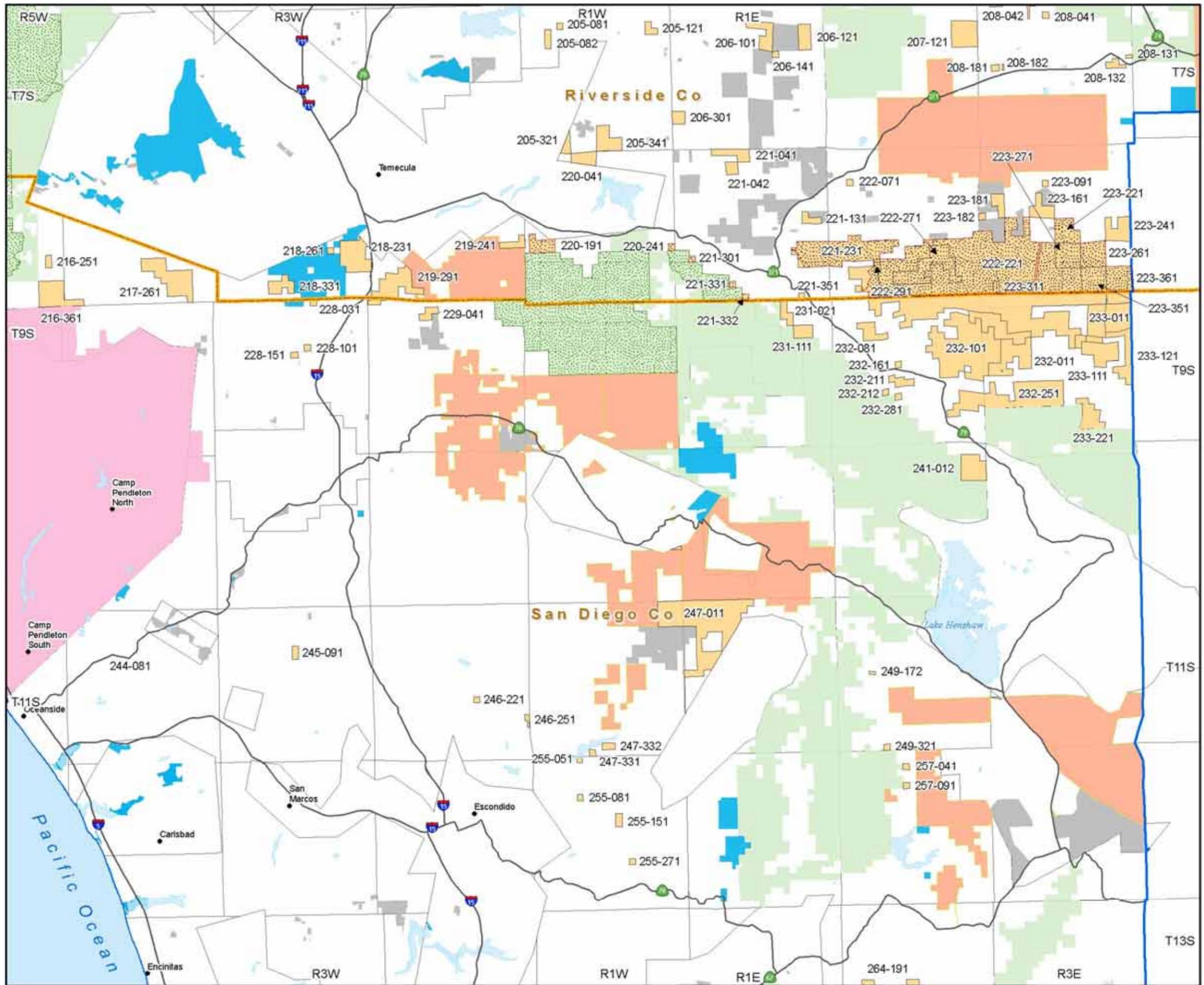


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Map 3-26 BLM Parcels South Riverside & North San Diego County Management Area



- SCRMP Land Status**
- SCRMP Boundary
 - Bureau of Land Management
 - US Forest Service
 - National Park Service
 - Military
 - Other Federal
 - State
 - County/State/Regional
 - Private/Other
 - National Wildlife Refuges
 - Indian Land/Reservation
 - BLM Wilderness
 - USFS Wilderness



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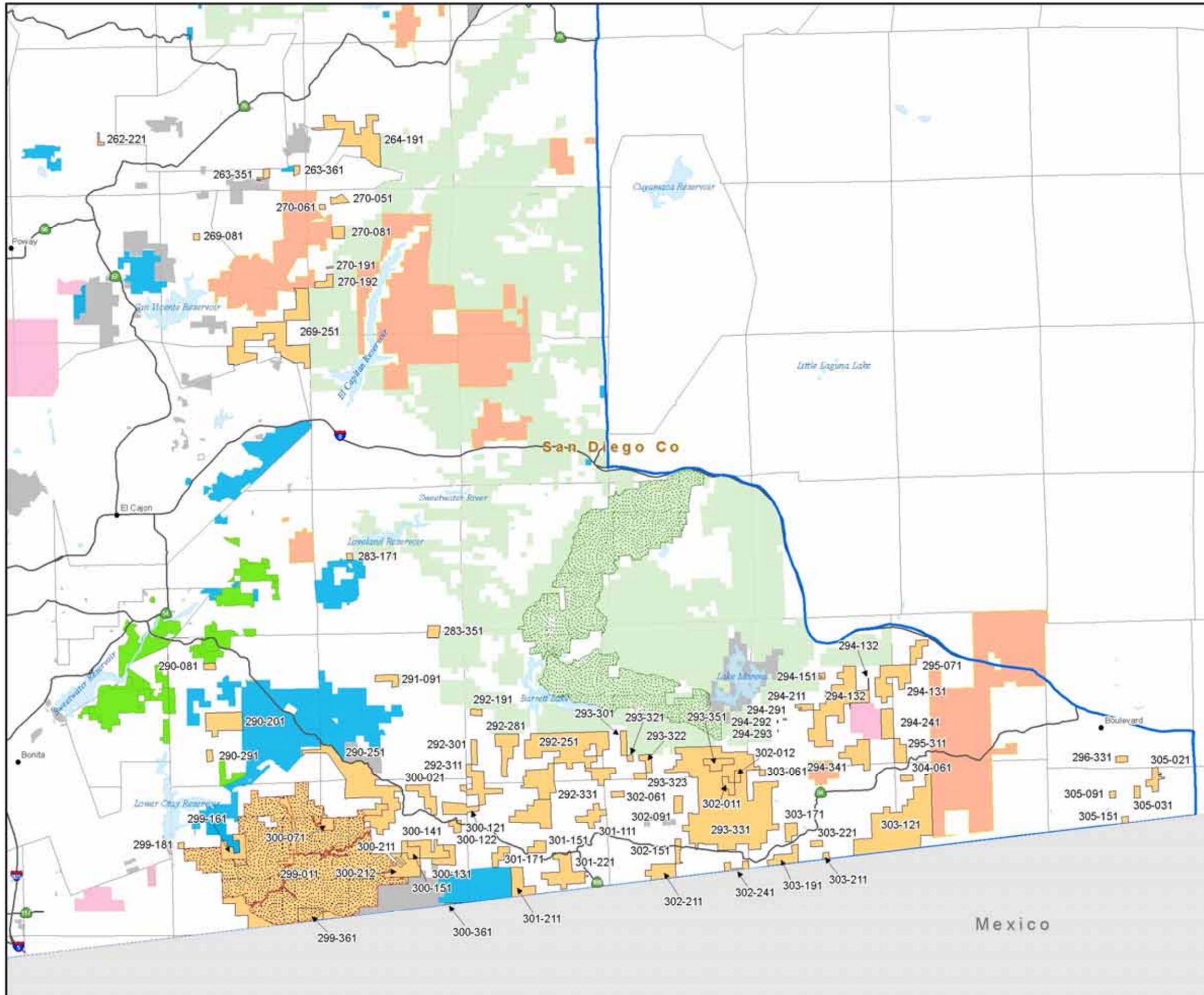


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Map 3-27

BLM Parcels

South San Diego County . Management Area



- SCRMP Boundary
- SCRMP Land Status**
- Bureau of Land Management
- US Forest Service
- National Park Service
- Military
- Other Federal
- State
- County/Regional
- Private/Other
- National Wildlife Refuges
- Indian Land/Reservation
- BLM Wilderness
- USFS Wilderness

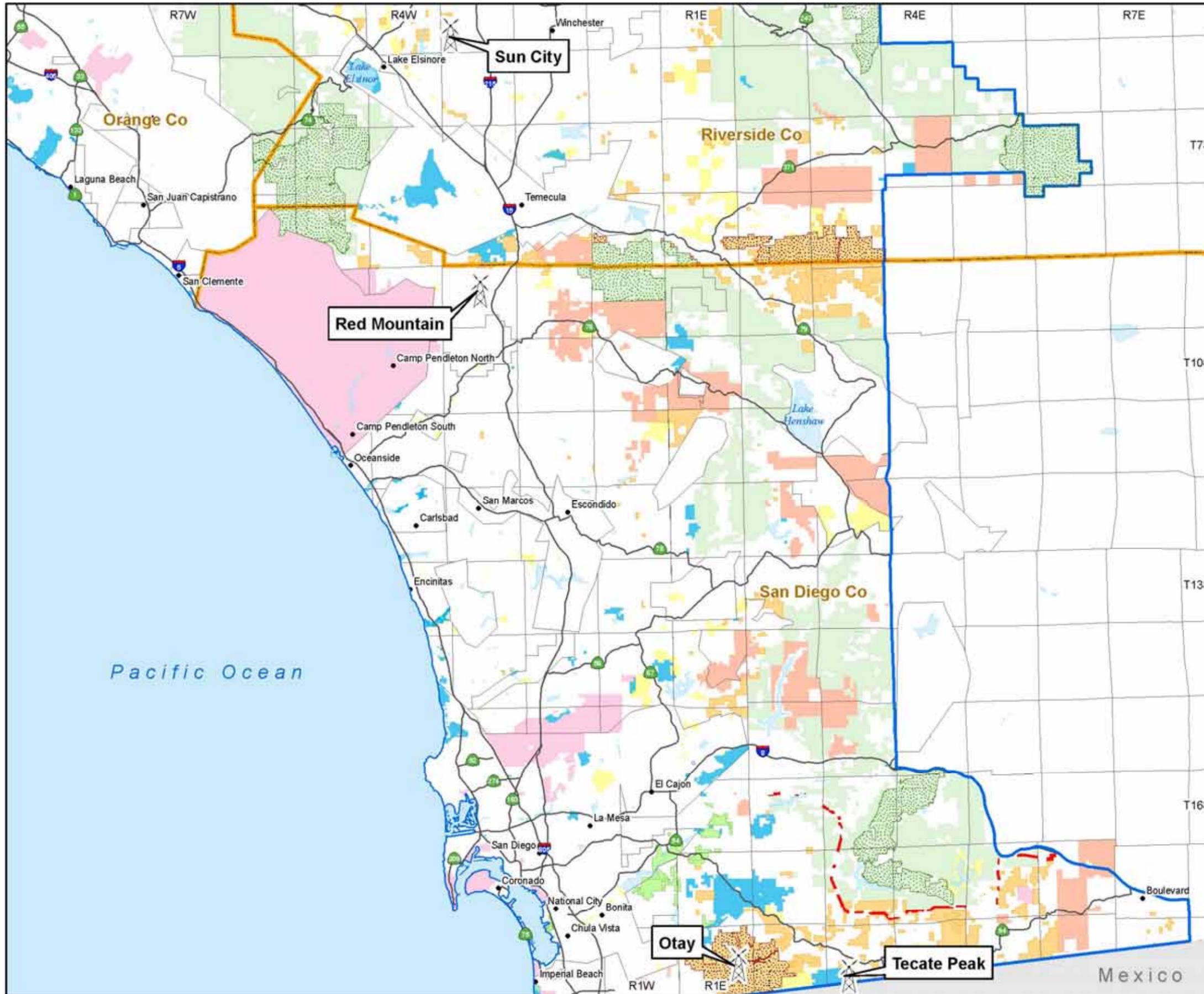


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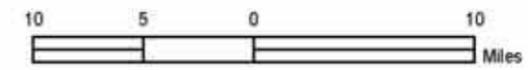


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Map 3-28 Communications & Energy Corridor Riverside & San Diego County



- Comm Sites
- Western Energy Corridor
- SCRMP Boundary
- SCRMP Land Status**
- Bureau of Land Management
- US Forest Service
- National Park Service
- Military
- State
- County/State/Regional
- Private/Other
- Indian Land or Reservation
- BLM Wilderness
- USFS Wilderness
- National Wildlife Refuges
- County



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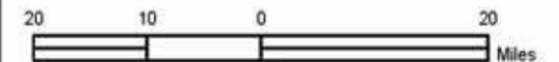


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Map 3-29 Active Mining Claims South Coast Management Area



- Active Mining Claims
 - SCRMP Boundary
 - ▨ Split Estate Land Management
 - ▨ Wilderness Study Area
- SCRMP Land Status**
- Bureau of Land Management
 - US Forest Service
 - National Park Service
 - Military
 - Other Federal
 - State
 - County/State/Regional
 - Private/Other
 - Native American Land/Reservation
 - ▨ BLM Wilderness
 - ▨ USFS Wilderness
 - National Wildlife Refuges
 - County

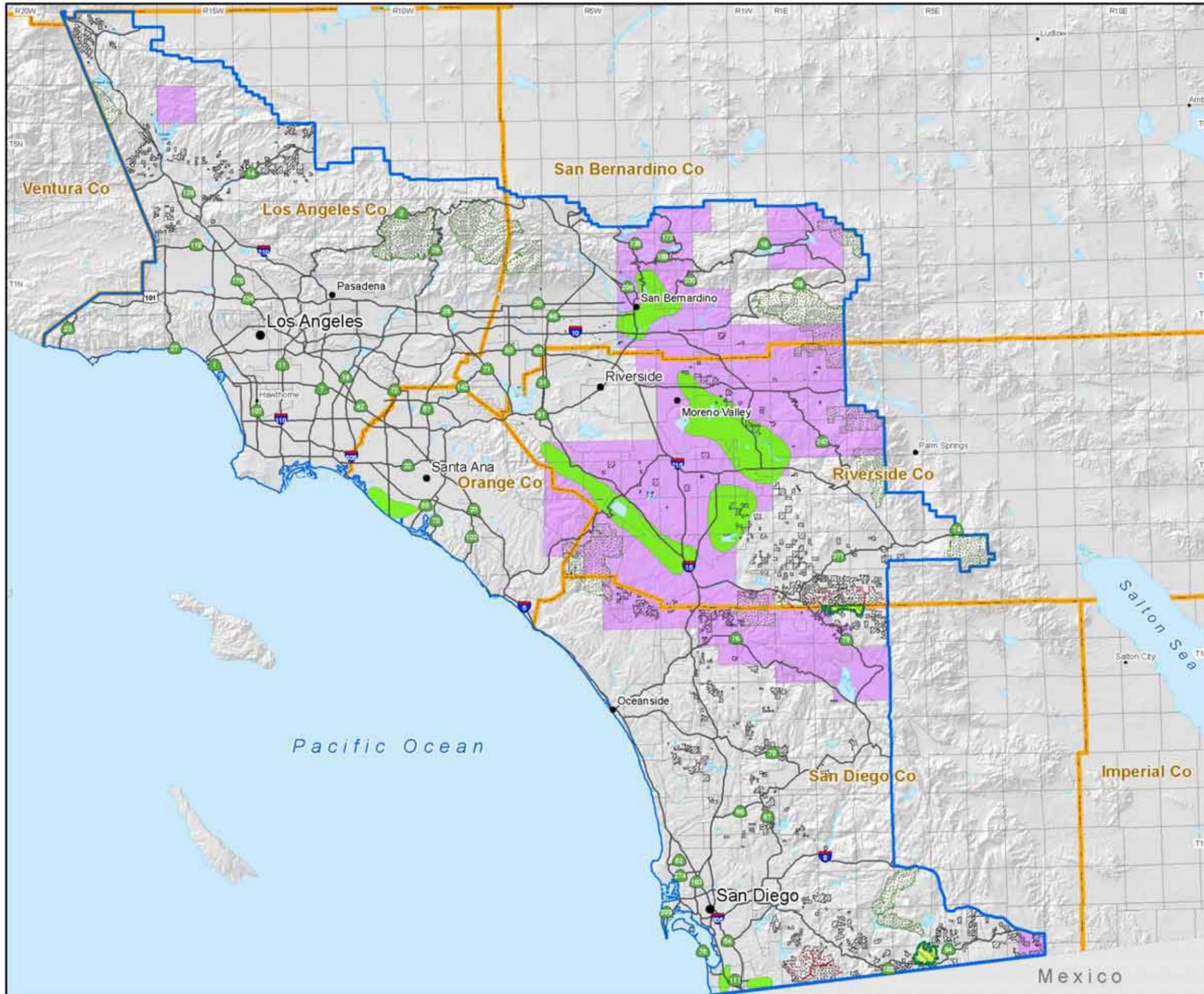


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Map 3-30 Geothermal Mineral Potential South Coast Management Area



- Geothermal High Potential
- Geothermal Moderate Potential
- SCRMP Boundary
- Split Estate Land Management
- Wilderness Study Area
- BLM Wilderness
- USFS Wilderness
- County



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