

Top left: A California newt. Top right: Control panel in the 25-foot Space Simulator facility. Bottom: Monkeyflower and dudleya in the Simi Hills. Photos: NPS (top), M.Fellows/NASA (lower).

Chapter 3: New National Park Unit Criteria Analysis

This chapter presents analyses required by Congress for areas that may be candidates for designation as a new unit of the national park system.

Introduction

Units of the national park system are managed under mandates differing from those guiding many other federal, state, and local agencies. The National Park Service (NPS) is responsible for managing certain areas to provide for public enjoyment in such a way that will leave resources “unimpaired for the enjoyment of future generations.” Since the establishment of the first national park in 1872 and the National Park Service in 1916, the national park system has grown to include over 400 areas. However, the areas managed by the NPS are a small part of the broader system for protecting important places. Addition to the national park system is only one of many alternatives, and the NPS also operates several programs that help others preserve natural, cultural, and recreational areas outside of the System.

To be eligible for favorable consideration as a unit of the national park system, a property must meet four criteria. As established through The National Park System New Area Studies Act (P.L. 105-391, 16 U.S.C. Sec.1a-5) (*Appendix B*), an eligible area must meet all of the following conditions:

- possess nationally significant natural, cultural, or recreational resources
- be a suitable addition to the system
- be a feasible addition to the system
- require direct NPS management instead of protection by some other governmental agency or by the private sector

This chapter presents an evaluation of the study area based on these four criteria.

Geographic Scope

Because the study area includes an existing national park unit, the new unit criteria analysis focuses primarily on the portions of the study area outside of the existing SMMNRA boundary. However, the national significance of SMMNRA is referenced in both the significance and suitability analyses to provide con-

text for evaluating how resources within the Rim of the Valley Corridor relate to resources protected in SMMNRA. For the portions of the study area that were previously evaluated in the San Gabriel Watershed and Mountains Special Resource Study (the San Gabriel Mountains and foothills and the Upper Santa Clara River watershed), this evaluation adopts those findings which are referenced where relevant throughout the criteria analysis.

National Recreation Areas

Some of the first national recreation areas designated in the national park system were units surrounding reservoirs impounded by dams built by other federal agencies. National recreation areas now encompass other lands and waters set aside by acts of Congress and since the 1970s have included areas close to urban centers. The National Park Service manages some of these areas under cooperative management agreements, in partnership with other agencies and organizations. The Santa Monica Mountains National Recreation Area is an example of a cooperatively managed national recreation area in an urban center. Given the complexity of ownership and management in the study area, the cooperative management approach of a national recreation area would be an appropriate model for consideration of a new national park unit.

National Significance

The National Park Service (NPS) uses four basic criteria to evaluate the national significance of proposed areas. These criteria, listed in the *NPS Management Policies 2006*, state that a resource is nationally significant if it meets all of the following conditions:

- It is an outstanding example of a particular type of resource
- It possesses exceptional value or quality in illustrating or interpreting the natural or cultural themes of our nation’s heritage
- It offers superlative opportunities for public enjoyment, or for scientific study

SMMNRA features some of the best remaining examples of the Mediterranean biome, a land type that is among the rarest on earth....Rich and diverse cultural resources are represented in the Santa Monica Mountains. Some 1,000 archeological sites provide insight into more than 10,000 years of Native American history.

- It retains a high degree of integrity as a true, accurate, and relatively unspoiled example of a resource

The NPS evaluates national significance for cultural resources by applying the national historic landmarks (NHL) criteria for national significance contained in 36 CFR Part 65 (*Appendix E: National Historic Landmark Criteria Sec 65.4*).

In addition to the criteria above, National Park Service professionals consult with subject matter experts, scholars, and scientists in determining whether a study area is nationally significant. Natural and cultural resource experts and scholars, locally and within the NPS, contributed expertise and documentation towards this preliminary statement of significance. In 2011 and 2012, the study team consulted local resource experts, NPS regional staff, and Santa Monica Mountains National Recreation area staff to identify resources of national significance. The following analysis describes how resources within the study area meet the national significance criteria described above.

Recognized Nationally Significant Resources

A substantial portion of the study area resources have been identified as nationally significant through previous study or designation. This includes national park or trail system designations, NPS special resource study evaluation, and national historic landmark designations (*Figure 3-1: Nationally Significant Resources*).

Santa Monica Mountains National Recreation Area

Santa Monica Mountains National Recreation Area (SMMNRA), the nation's largest urban national park, comprises approximately 153,000 acres or 25% of the study area. Congress established the national significance of Santa Monica Mountains and portions of the Simi Hills in 1978 through the enabling legislation of the national recreation area (Public Law 95-625). It recognizes the Santa Monica Mountains and adjacent coastline as an area of national significance because of its combination of natural, cultural, recreational, and aesthetic resources, and further states that, "... there is a national interest in protecting

and preserving these benefits." Other values, such as air quality, the preservation of beaches, coastal uplands, historic setting, and the protection of the many undeveloped stream drainages justified establishment of the national recreation area. SMMNRA's nationally significant resources were further defined in the *General Management Plan* (NPS 2002) and more recently refined through development of a foundation document (currently underway). *Chapter 1: Introduction* provides a description of SMMNRA's park purpose and significance as defined in the foundation document.

SMMNRA features some of the best remaining examples of the Mediterranean biome, a land type that is among the rarest on earth. The mild and pleasant climate makes this biome ideal for human occupation, a significant reason why only 20% of the world's Mediterranean biomes remain intact. With one of the highest concentrations of rare species in the United States, the Santa Monica Mountains' ecosystem provides habitat for hundreds of species of plants and wildlife. Natural communities include coastal sage scrub, chaparral, oak woodlands and savannas, native grasslands, and two of the last remaining salt marshes on the Pacific coast. The Santa Monica Mountains have a particularly high diversity of fauna, particularly for birds and reptiles. SMMNRA is also notably the only national recreation area located within a mega-city (defined as metropolitan areas with a population of over ten million), that supports a reproducing population of a large carnivore (mountain lion).

Rich and diverse cultural resources are represented in the Santa Monica Mountains. Some 1,000 archeological sites provide insight into more than 10,000 years of Native American history. The Santa Monica Mountain's varied coastal and mountain landscapes, in close proximity to Hollywood, played a significant role in the film industry's transition from studio production to on-location filming. Paramount Ranch is one of the best remaining examples of the early movie ranch. The significance of the motion picture industry in the 20th century stretches beyond the borders of the United States and affects contemporary culture worldwide. Recently the significance of the high concentration of fossils contained in Santa Monica Mountains geologic formations has been recognized (Tweet 2012a).

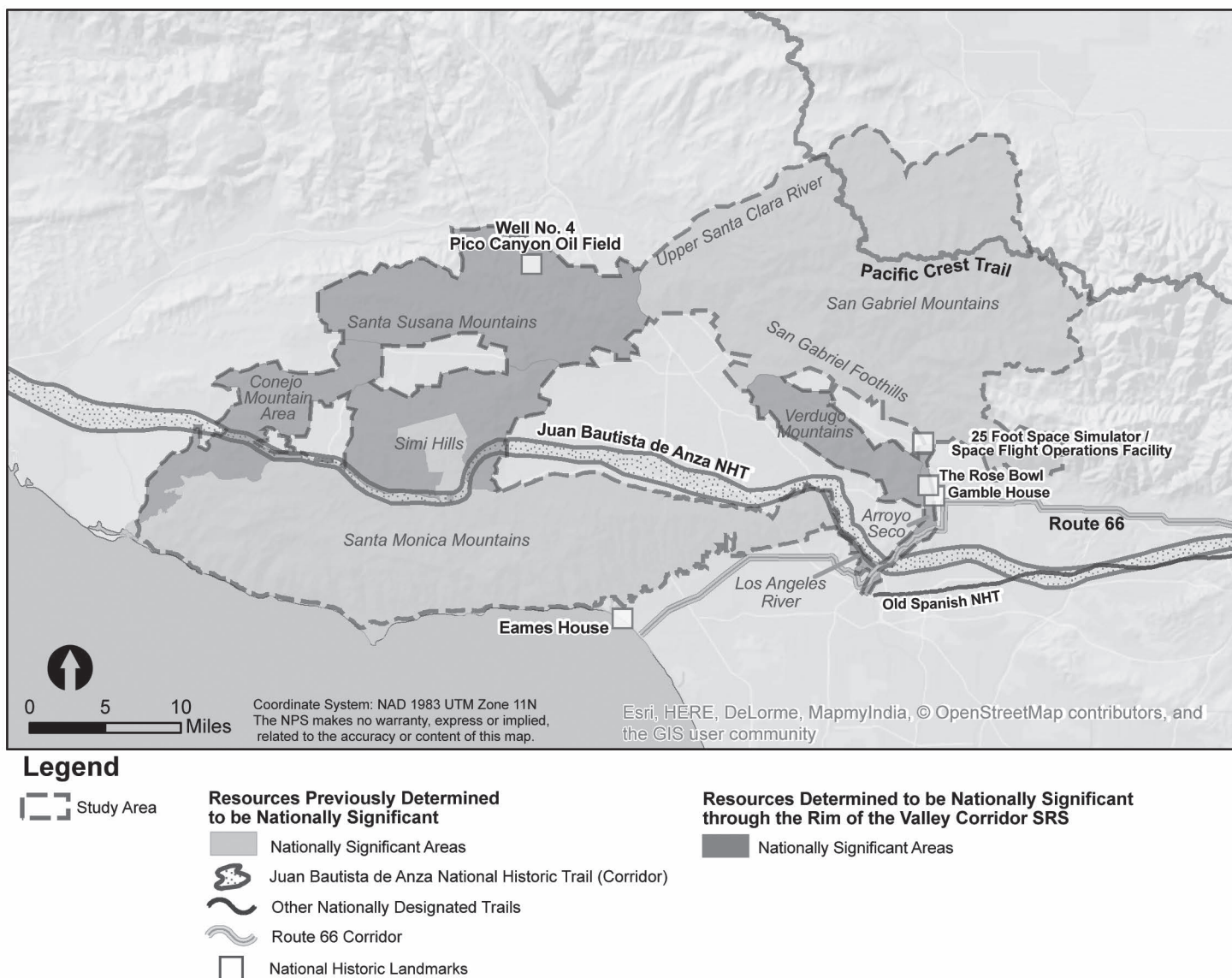


Figure 3-1: Nationally Significant Resources

One of the most geologically diverse mountain ranges in southern California, the San Gabriel Mountains are comprised of rock units from all of the major geologic eras.

San Gabriel Mountains

Through the recently completed *San Gabriel Watershed and Mountains Special Resource Study* (2013f), the NPS found the San Gabriel Mountains and foothills, including portions of the Upper Santa Clara River watershed, to be of national significance for their geologic resources and high levels of biodiversity (NPS 2013f). One of the most geologically diverse mountain ranges in southern California, the San Gabriel Mountains are comprised of rock units from all of the major geologic eras. Within the western San Gabriel Mountains this includes the most extensive, best-exposed, and most completely studied exposures of the San Gabriel Mountains anorthosite massif and the Mount Lowe plutonic suite. Some of the oldest rocks (more than one billion years old) on the west coast of the United States are located in the San Gabriel Mountains.

Within a short distance, the San Gabriel Mountains and foothills feature coastal, desert, montane, and subalpine ecological communities. This diverse landscape provides habitat for an abundance of rare and endemic plants and wildlife. In addition, the central and eastern San Gabriel Mountains contain significant waterways and riparian areas, some of which are eligible National Wild and Scenic River segments. Nationally significant cultural resources include the Mount Wilson Observatory, which includes large telescopes that were used in significant astronomical discoveries.

National Trails

Three nationally designated trails cross the study area: the Juan Bautista de Anza National Historic Trail; the Old Spanish National Historic Trail; and the Pacific Crest National Scenic Trail (Pacific Crest Trail). The Juan



Two national historic trails are included within the study area. These trails are administered by the NPS.

Bautista de Anza National Historic Trail was designated in 1990 to commemorate the 1775-76 expedition where Anza led more than 240 men, women and children on an epic journey from Nogales, Arizona to establish a settlement at San Francisco Bay. The study area includes 22 miles of the 1,200 mile long national historic trail from the Los Angeles River in the east following the northern slope of the Santa Monica Mountains west of Cahuenga Pass.

In 2002, Congress established the Old Spanish National Historic Trail to commemorate the first overland link to California for the east coast markets served by the Santa Fe Trail and the trade hungry markets of Mexico and New Mexico. The 2700-mile trail crosses New Mexico, Colorado, Arizona, Utah, Nevada, and California, and traverses the Los Angeles region paralleling the Juan Bautista de Anza National Historic Trail and terminating in downtown Los Angeles at the El Pueblo de Los Angeles Historical Monument.

Established in 1968, the Pacific Crest National Scenic Trail spans 2,650 miles from Mexico to Canada through three western states, revealing the beauty of the desert, the Sierra Nevada, the Transverse Range, and the Cascade Range Provinces. In the study area, the trail traverses San Gabriel Mountain ridgelines eventually descending to Highway 14 at Agua Dulce where it enters the Sierra Pelona.

The NPS is currently conducting a special resource study of the Butterfield Overland Trail and has determined that the trail is nationally significant, primarily for its role in linking western territories with portions of the U.S. east of the Mississippi River. Prior to September 1858, transportation and communication between the Mississippi River valley (or the east coast) and the Pacific Coast – for passengers, mail, express, and other forms of freight – took place on a twice-monthly basis via a sea route that connected to the Pacific Coast via the Isthmus of Panama. The implementation of the Butterfield route brought the disparate parts of the country together by providing twice-weekly stages to and from California; just as important, it satisfied the long-expressed need to have an overland route that ran entirely within the country's borders (NPS 2013e). The route passes through the study area at El Pueblo de Los Angeles Histori-

cal Monument, Cahuenga Pass in the eastern Santa Monica Mountains, and Newhall Pass between the Santa Susana Mountains and the San Gabriel Mountains. A separate special resource study is underway to determine the feasibility and suitability of designating the Butterfield Overland Trail as a national historic trail.

National Historic Landmarks

Six national historic landmarks (NHLs) are located within or adjacent to the study area representing topics such as architecture, space exploration, recreation, and oil production. The Gamble House NHL location in Pasadena and Eames House NHL, adjacent to the study area in Pacific Palisades, each represent outstanding examples of architecture. The Jet Propulsion Laboratory, also in Pasadena, is the location of two national historic landmarks related to innovations in space exploration (Twenty-five Foot Space Simulator NHL and Space Flight Operations Facility NHL). Nearby, the Rose Bowl NHL in Pasadena has outstanding significance in the field of recreation as the site of the oldest and most renowned post-season college football "bowl" game. Well No. 4, Pico Canyon Oil Field NHL in the Santa Susana Mountains was the first commercially successful oil well on the west coast of the United States. Finally, the Saddle Rock Ranch Pictograph site in the Santa Monica Mountains, although not formally designated, was determined eligible for national historic landmark designation by the Secretary of the Interior in 1990.

Route 66 Corridor Program

The study area includes portions of the 2,400 mile long U.S. Highway 66 which terminated in Santa Monica. Widely known as "Route 66," this historic corridor is significant as the nation's first all-weather highway linking Chicago and Los Angeles. The NPS Route 66 Corridor Program administers cost-share grants to preserve and interpret the Route 66 corridor, and provides technical assistance to public and private entities to address Route 66 preservation needs.

These nationally significant sites and areas do not need to be evaluated for national significance in this special resource study. However, their significance is referenced in the criteria analysis as it relates to resources in the remainder of the study area.

The mild climate of the Los Angeles region which supports a high diversity of species has also made the region attractive to a diversity of cultures from all over the world.

Through this process, the NPS determined that the remainder of the study area also contains nationally significant resources, many of which magnify the importance of resources previously identified as nationally significant. As such, the study area as a whole has national significance. The following analysis describes how the study area resources meet the national significance criteria.

Summary of National Significance of the Rim of the Valley Corridor Study Area

The topographically and geographically complex study area contains a mosaic of natural communities that span coastal and montane ecosystems and support high levels of biodiversity. Plant communities range from coastal sage scrub in the coastal valleys and foothills, to unique woodland habitats in the Santa Susana Mountains, alluvial scrub habitat of Tujunga Wash, rich riparian habitat of the Santa Clara River, and marine ecosystems along the Santa Monica Mountains coast. The region also has a long history of human use with a wide range of historical and archeological resources.

Due to extensive urbanization in the Los Angeles region, many native plant communities and their associated wildlife are now rare, threatened or endangered. The intersection of biological resources and urbanization has made the southern California coastal region the most-threatened biologically diverse area in the continental United States (CDFG 2007). Southern California has been identified as a “hotspot” for biodiversity due to the high diversity of imperiled species (Stein, Kutner and Adams 2000).

In 1973, the National Park Service conducted a comprehensive survey of natural history in California and identified sites with national significance that would be eligible for National Natural Landmark designation. This survey found that for areas in the Transverse and Peninsular Ranges, “*Much of the mountainous areas lack intensive agriculture or dense urbanization, unlike the lowland valleys and floodplains of this area.*” These upland sites are in many cases the sole remnant of the pristine landscape” (NPS 1973). This statement remains true today.

The mild climate of the Los Angeles region which supports a high diversity of species has also made the region attractive to a diversity of cultures from all over the world. More than 10,000 years of human habitation are represented in the cultural resources found within the study area. Climate and landscape inspired significant migration to southern California, in the 19th and 20th centuries and plays an important role in the cultural significance of the study area. Great engineering feats were undertaken to transform the physically isolated Los Angeles area into a growing metropolis. As described by Sam Hall Kaplan in his architectural history of Los Angeles, “*tourism and health brought many to the region, transport of water allowed it to grow, oil production spurred progress, transportation systems gave it its shape, and the movie industry propelled it into the consciousness of the world*” (Kaplan 1987). The study area contains an impressive collection of cultural resources of varying degrees of significance – from local to national historic landmarks. More than 1,700 archeological sites and hundreds more historic sites and features are located within the study area.

The nationally significant resources of the study area fall into five broad subject areas:

1. mountain building and geologic resources;
2. diverse record of paleontological resources including a complete, intact record of fossils from the Cenozoic Era;
3. biodiversity of Mediterranean ecosystems;
4. archeological resources representing more than 10,000 years of human occupation, including Chumash rock art from the era of first European contact; and
5. nationally significant historical sites representing a wide range of cultural themes.

Criterion 1: Outstanding Example of a Particular Type of Resource

Mountain Building and Geology: The Transverse Ranges Province

Although most mountain ranges in the continental United States trend north-south, the

mountain ranges in the study area trend east-west. The Transverse Ranges are the result of a unique ninety degree rotation caused by the land block getting stuck under the North American Plate and pushed clockwise by the Pacific Plate.

The geologic resources of the study area that best tell the Transverse Ranges “twist” story include the Conejo Volcanic complex rocks surrounding the Conejo Valley, and the rock formations in the Santa Monica Mountains that were used for the paleomagnetic testing that confirmed the 90° rotation. The east-west trending Simi Hills, the Santa Susana Mountains, the San Gabriel Mountains, and the Verdugo Mountains also contribute to this unique geologic story.

The San Gabriel Mountains are among the fastest growing mountains in the world. The San Gabriel Mountains are nationally significant as an outstanding location to research or study mountain building. Forces from the San Andreas Fault to the north and a series of thrust faults on the south are causing the San Gabriel Mountains to rise an average of 2 inches a year. Because they are one the youngest mountain systems on the west coast, the Santa Susana Mountains further contribute to understanding active mountain building in the region.

Paleontological Resources

Paleontological resources are fossilized remains of non-human organisms. Most paleontological sites include remains of species that are now extinct. Southern California has important paleontological (fossil) resources that are sought by collectors, universities, and museums.

As described in *Chapter 2: Resource Description*, the study area contains a remarkably diverse assemblage of paleontological resources. As a collection, the marine and terrestrial specimens collected from Los Angeles and Ventura County sites within the study area and now curated at the Los Angeles County Museum of Natural History and other locations provide the most diverse and complete record of the paleo-ecology of the Southwest Pacific Rim during the Cenozoic Era. Due to their location at the edge of the continent and their formation in a warmer more southerly climatic

zone, these sites alternated between deep and shallow marine and terrestrial environments and include some of the most productive and diverse fossil sites in the United States in terms of the quality, quantity, diversity of species found and geologic eras represented.

High Levels of Biodiversity

The topographically and geologically diverse study area contains exceptionally high levels of biodiversity including outstanding examples of Mediterranean-type plant communities, rare and sensitive plant and animal species, and endemic species that occur nowhere else (*Table 3-1: Species Endemism within the California Floristic Province*).

Table 3-1: Species Endemism within the California Floristic Province

	Species	Endemic Species
Plant species	4426	2125
Vertebrate species	584	71
Bird species	341	8
Mammal species	145	30
Reptile species	61	16
Amphibian species	37	17

Source: Myers et al. 2000

Since the 1980s, the concept of biodiversity hotspots has become an essential tool for setting conservation priorities throughout the world. These hotspots are defined as areas harboring exceptional concentrations of living species especially those found nowhere else on Earth (i.e. endemic species) and which are undergoing exceptional loss of habitat. Based on these criteria, the area defined as the California Floristic Province has been identified by leading ecologists as one of 25 global biodiversity hotspots that collectively support more than 60% of the Earth’s total biodiversity (Myers et al. 2000, CBI 2001).

The California Floristic Province is one of five floristic provinces in the world defined by the Mediterranean-type climate. All five of these provinces, including the California Floristic Province, and those found in the Cape Region of South Africa, central Chile, southwestern Australia, and the Mediterranean basin are considered global biodiversity hotspots, each with an exceptionally high proportion of endemic plants.

Of these five Mediterranean-type climate influenced areas, the California Floristic Prov-



The diversity in elevation, microclimates, and microhabitats has resulted in a diverse mosaic of vegetation and habitats in the study area. In the upper Santa Clara River basin (above) elements of vegetation found in the San Gabriel Mountains and foothills, and species associated with the Mojave Desert are found. Photo: NPS.

With their intact, species-rich Mediterranean shrubland communities, the upland areas of Ventura and Los Angeles Counties harbor some of the region's most intact concentrations of biological diversity.

ince has the greatest diversity of soil types and moisture regimes and supports one of the richest plant assemblages in the world, including about 25% of all plant species occurring north of Mexico, approximately half of which are endemic to the province (Stebbins and Major 1965; Raven and Axelrod 1978, Mittermeier et al. 1999). Today, less than 25% of the original vegetation in the floristic province remains (Myers et al. 2000).

A closer look at biogeographic patterns shows southern California to be a hotspot within a hotspot. The largest number of endemic species in the California Floristic Province occurs within southern California (Ornduff 1974). The region supports more than 30% of California's native plant species while comprising less than 10% of the land area (CDFG 2008). More endemic plant and animal species occur in this ecoregion than any other ecoregion in the country (Stein, Kutner and Adams 2000). At a national level, the south coastal area of California has been identified as a hotspot for nearly every group of species, including plants, invertebrates, birds, mammals, and

reptiles (Wilcove et al. 1998). Since the government began listing species as threatened and endangered in the 1970s, the south coastal area of California is the only region to meet the criteria of a hotspot during that entire period of time (Rutledge et al. 2001).

As described in *Chapter 2: Resource Description*, this species richness and high endemism is contained within and supported by a comparable diversity of vegetation assemblages. With their intact, species-rich Mediterranean shrubland communities, the upland areas of Ventura and Los Angeles Counties harbor some of the region's most intact concentrations of biological diversity. Conservation of these upland areas is the key to regional habitat connectivity, especially for species-rich, but increasingly isolated areas such as the Santa Monica Mountains.

The native plant and animal species found in the Rim of the Valley Corridor study area demonstrate the biodiversity of this Mediterranean climate, southern California hotspot. Elevations within the study area vary from sea level on the coast of Malibu to Mount Gleason (6,540 feet) in the San Gabriel Mountains. As a result, the study area includes a broad range of elevation, microclimates, and microhabitats that results in a diverse mosaic of vegetation and habitats. Spatially complex environmental factors, such as diverse topography, geology, soils, precipitation, and temperatures, coupled with dynamic fire and land use history, create a broad range of vegetation and habitat types that are unique to the region, many of which also support federally listed plant and animal species (Conservation Biology Institute 2001, Barbour et al. 2007, Keeler-Wolf et al. 2007, Keeler-Wolf et al. 2010).

In addition to containing rare habitat and sensitive plant and animal species, the study area also includes sites identified as being evolutionary hotspots for multiple species, where the potential for evolutionary processes that control levels of biodiversity is high (Vandergast et al. 2008). Of the five "evolutionary hotspots" identified, the Sierra Pelona area, adjacent to the northern edge of the study area, and portions of the San Gabriel Mountains that connect to the Rim of the Valley Corridor, highlight the importance of connectivity for these biological resources.

The wide range of cultural sites and landscapes reflect the area's unique history and development which has been shaped and influenced by its geography, natural resources, varied landscapes, and Mediterranean climate.

Diversity of Cultural Resources

As described in *Chapter 2*, the study area contains every major prehistoric and historic theme associated with human interaction and development in the western United States. Historical themes range from California's earliest exploration and settlement by Spain, to its subsequent administration by the Republic of Mexico, as well as the course of Los Angeles' urbanization, from citrus groves to tract homes by way of oil development, motion pictures, innovations in space exploration and defense, and freeways. The wide range of cultural sites and landscapes reflect the area's unique history and development which has been shaped and influenced by its geography, natural resources, varied landscapes, and Mediterranean climate. Modern-day residents continue to make unique cultural contributions to the nation as a result of their special relationship to the climate and landscapes of southern California. *Tables D-8 through D-11* in *Appendix D: Resource Inventories* contain a comprehensive listing of these resources. Numerous cultural resources within the study area have been previously identified as nationally significant through national historic landmark (NHL) designation or evaluation or through national park or national historic trail designation. These recognized resources are referenced to provide context for the overall cultural significance of the area. The following section describes outstanding examples of cultural resources within the study area.

Native American Archeology

Archeological resources in the study area boast a rich and colorful history with a record of more than 10,000 years of human occupation. This record is contained in some 1,700 archeological sites that provide excellent opportunities to understand cultures that have lived in the area. Over time, the complex and advanced cultures that inhabited the area developed large villages, which included extensive trading and monetary systems, astronomical knowledge, exquisite basketry, stone and wood carvings, and a legacy of sacred pictographs (NPS 2002). Today, one of the largest Native American Indian populations in the world, representing virtually every tribe, lives within easy access of the study area.

Regional archeologists have noted that the study area as a whole has some of the oldest

discovered sites in California (Barbara Tejada, pers. comm., 2012), which contributed to the definition of prehistoric chronologies used today. Although the Channel Islands contain some of the region's most pristine sites, many of the study area sites are better preserved and represent successive periods of history. For example, the oldest known reference of rock art in the study area was documented by J.P. Harrington in 1917 and the first published discussion of rock art in California by Alfred Kroeber in 1925 mentioned a site in Los Angeles County (Knight 2001). The Tank Site (CALAN-1), located within Topanga State Park, is one of the oldest identified sites in the region (1946) and defined the milling stone period in this area. This site is used by archeologists as the defining location for early archaic cultures in southern California. The Little Sycamore Shellmound, located within Leo Carrillo State Park, is also important as a defining site for early archaic cultures (NPS 2002). The analysis of these resources can provide valuable information relative to the cultural heritage of the region.

Archeological resources in the Santa Monica Mountains are nationally significant and feature one of the highest densities of archeological sites found in any mountain range in the world. Many archeological sites in the Santa Monica Mountains have been listed or determined eligible for listing in the National Register of Historic Places. Of particular note is the area's Chumash rock art, considered to be some of the most interesting and spectacular in the United States (Heizer and Sturtevant 1981). The Saddle Ranch Pictograph Site, in the Santa Monica Mountains was determined to be potentially eligible for designation as a national historic landmark in 1990 by the Secretary of the Interior (NPS 2012b). These resources are described in more detail in *Chapter 2: Resource Description*.

Numerous significant sites determined eligible for listing in the national register are located in U.S. Forest Service managed areas in the western San Gabriel Mountains and foothills. These sites provide strong evidence of long-term occupation, seasonal encampment, resource procurement, and processing and storage sites, and regional trade networks (USFS 2005). The Simi Hills and Susanta Susana Pass area also contain archeological resources of



One of the largest Native American Indian populations in the world, representing virtually every tribe, lives within easy access of the study area. Satwiwa Native American Culture Center in SMMNRA serves as a destination for a broad range of American Indian groups from across the nation. Satwiwa is a learning center for all people to share traditional and contemporary indigenous lifeways. Photo: NPS.

note, particularly with regard to rock art displays at the Burro Flats site.

Areas that are still largely undeveloped and have not been extensively surveyed provide great potential for scientific discovery. These areas include the Santa Susana Mountains, Upper Santa Clara River, portions of the Simi Hills, and Conejo Mountain/Las Posas. Despite the lack of formal survey and evaluation, several hundred archeological sites have been documented in these areas. Sites listed or determined eligible for listing in the National Register of Historic Places in these areas are described in more detail in *Chapter 2: Resource Description*.

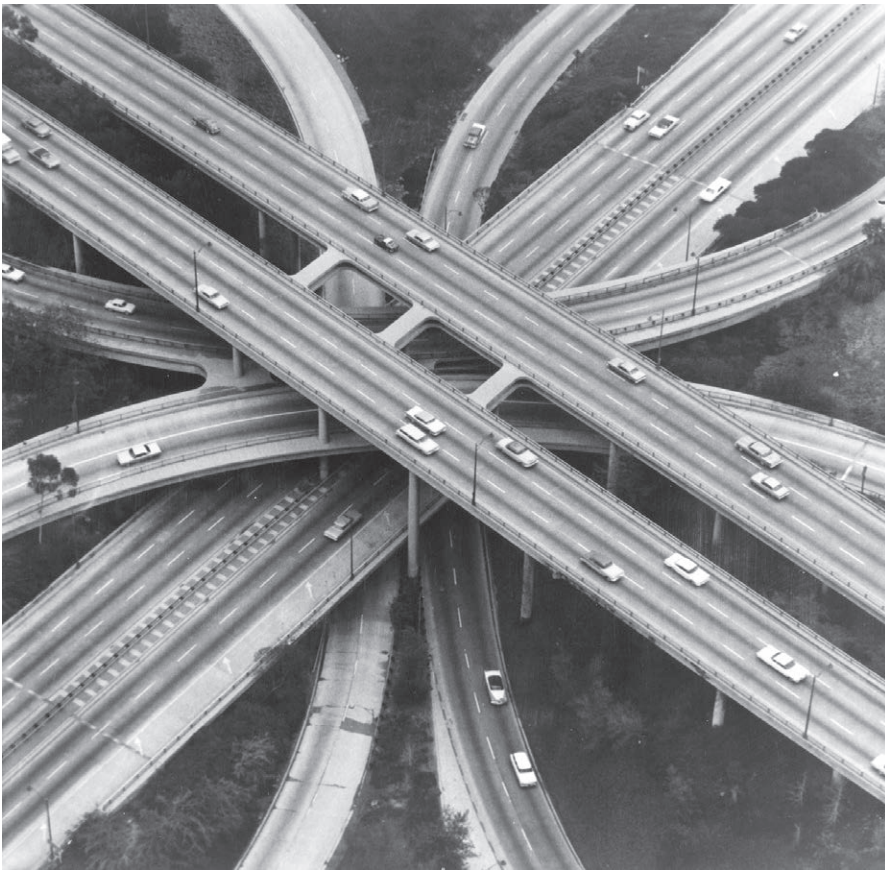
Migration and Settlement

Historic trails and migration routes played a significant role in the settlement of the region. Most routes used by early Europeans in California followed existing Native American transportation corridors. In part, this reflected the natural geography of the region, bounded by several mountain systems, which provided only a limited number of practical alternatives for Indigenous people and Europeans settlers alike. Several of these important routes have already been designated national historic trails. The Juan Bautista de Anza National Historic Trail, managed by the NPS, is significant for its role in the early settlement of California by the Spanish. The Old Spanish National Historic Trail, also managed by the NPS, terminated in Los Angeles and was important to developing the economy of the Mexican Southwest.

Route 66 was determined significant through a National Park Service special resource study as the nation's first all-weather highway linking Chicago to Los Angeles, underscoring the importance of the automobile and unprecedented mobility of Americans. The portion of U.S. Highway 66 within the study area is primarily the Arroyo Seco Parkway whose significance as it relates to transportation and engineering is described below.

Transportation, Communication, and Civil Engineering

Although today airplanes and automobiles have made travel to and from Los Angeles practically effortless, natural barriers once posed such a substantial challenge that they effectively limited any significant immigration to the region until well into the nineteenth century. Inland, vast deserts extend for hundreds of miles beyond the wall of encircling mountains, confining much of southern California as if it were an island perched on the western edge of the continent. To the northeastward, a tangle of rugged coastal hills covered with dense brush made overland travel up or down the coast from other population centers difficult. To the southward, the ocean seemed to promise a better alternative for travel, but the region's coastline offered no natural harbors. The Los Angeles basin was also poorly supplied with one of the most essential resources needed by a populous civilization—fresh water. The inadequacy is not a matter of simple



The four-level interchange that is part of the Arroyo Seco Parkway was an innovation in highway engineering as the “world’s first freeway-to-freeway connector.” Photo: Modernage Photo Service, Inc., Security Pacific National Bank Collection/Los Angeles Public Library.

scarcity, however. Depending on the time of year, or the year itself, the region can even have too much water in one place and too little in another at the same time causing dramatic periods of flooding.

Great engineering works became necessary for the growth and development of Los Angeles. The city’s isolation was eliminated with the introduction of transcontinental railroads and highways, which connected Los Angeles to the rest of the country. The region’s arid environment, which supplied far too little water to sustain a major city, was overcome with the importation of water from distant sources. These interbasin transfers would eventually give Los Angeles an effective watershed comprising most of the American west. And finally, the floods which periodically inundate the Los Angeles basin, or bury it in sediments, would be channelized and confined within an elaborate system of dams, reservoirs, and concrete canals. All of this engineering would make it possible for one of the world’s most populous and cosmopolitan of cities to emerge and flourish.

Nationally significant resources related to this topic include Route 66 and the Butterfield Overland Trail. The implementation of the Butterfield Overland Trail route brought the disparate parts of the country together by providing twice-weekly stages to and from California and established an overland route that ran entirely within the country’s borders (NPS 2013e).

There are several resources related to this topic that may be nationally significant for innovations in transportation and engineering but warrant further analysis to determine eligibility for national historic landmark nomination. These resources include the Arroyo Seco Parkway and resources related to water conveyance and flood protection systems. Constructed between 1928 and 1953, the Arroyo Seco Parkway marked a significant turning point in the history of roadway design and development in the west. During the initial phase of the parkway’s construction, engineers incorporated landscaping and native plants into the overall design while implementing safety features designed for high speed traffic. The culmination of the freeway with its connection to the first four-level freeway interchange in the world appears to be nationally significant. The four-level interchange is a National Civil Engineering Landmark. Completed in 1949, the four-level interchange was the “world’s first freeway-to-freeway connector.” It is recognized by the American Society of Civil Engineers as the prototype “direct” or “freeflow” interchange. The structure’s completion was necessary for connection of the Arroyo Seco Parkway to the Los Angeles freeway system (Gruen and Lee 1999, California Department of Transportation 2006, Calpo 2011).

Currently, the four-level interchange is identified as a contributor to the historic district at the state level, but it is individually eligible for the National Register of Historic Places at the state and national level of significance (Scott and Calpo 2012). Additional evaluation is needed to determine if the Arroyo Seco Parkway with the innovation of the four-level interchange would be eligible for designation as a national historic landmark.

As described in *Chapter 2*, the study area contains a wide range of resources that reflect efforts to store and transport water, includ-



The Zanja Madre, conveying water from the Los Angeles River to the Plaza, was used for drinking water, irrigation, and washing (shown, ca. 1900). Portions of the Zanja Madre remain today. Photo: Security Pacific National Bank Collection/Los Angeles Public Library.

ing sections of the historic Zanja Madre (the original water systems that supplied El Pueblo de Los Angeles and continued to transport water regionally through the American Period), key components of the California Aqueduct, and numerous dams and reservoirs created for water storage (e.g. Franklin Canyon Dam, Chatsworth Dam, Encino Reservoir). Portions of the Los Angeles Aqueduct and associated infrastructure that carry and store water from the Owens Valley are also located throughout the study area.

Resources associated with the Los Angeles County Flood Control System, a comprehensive and coordinated flood control system constructed by the U.S. Army Corps of Engineers and the Los Angeles County Flood Control District, are located throughout the study area. The Los Angeles County system was the first and largest program to receive funding under the Flood Control Act of 1936. The system includes dams, debris basins, spreading grounds, diversion tunnels, outlets, inlets, guide walls, gates, and spillways. A U.S. Bureau of Reclamation theme study on large federal dams determined that the Los Angeles County Flood Control System might be nationally significant for its impact on the history and development of the greater Los Angeles metropolitan area (Billington, Jackson, and Melosi

2005). Further study is needed to identify which resources contribute to the national significance of the water conveyance and flood protection systems and to document the integrity of contributing resources. *Tables D-12 and D-13 in Appendix D* contain a description of related resources within the study area.

Energy Development

Energy development is an important aspect of the economic development of southern California. Southern California's abundant supplies of oil would support its rapid economic growth through the twentieth century, shifting the balance of population and political power within the state from north to south.

Well No. 4, Pico Canyon Oil Field in the Santa Susana Mountains was designated as a national historic landmark in 1966. As the first commercially successful oil well on the west coast of the United States, Pico Well No. 4 represents the thematic topic of extraction and production. Because of training in the Pico Canyon field, oil industry pioneers made California the second oil-producing state in the United States in the first two decades of the 20th century (Snell 1963).

Innovation in Science and Technology

The Los Angeles region has been the center of technological innovations related to space exploration, aeronautical engineering, cold war-era missile systems, and astronomical discoveries. The climate of the region favored aeronautical advancements because the weather conditions made it possible to fly at nearly any time of the year. By the end of the World War II, southern California would be an important center not only for advanced aeronautical design, but also for rocketry and guided missile technologies, which would play an important role in the emerging Cold War. Having high altitude mountain systems in close proximity to a large urban area with research institutions such as the California Institute of Technology (Caltech) created excellent opportunities for the construction and use of observatories. The study area contains a number of nationally and potentially nationally significant sites related to innovations in space exploration, defense, and astronomy.

Man in Space National Historic Landmarks

The *Man in Space National Historic Landmark*



The Jet Propulsion Laboratory (JPL) campus, located along the Arroyo Seco at the base of the San Gabriel Mountains, is home to two national historic landmarks and continues to serve as a major NASA site operated in partnership with the California Institute of Technology. Photo: City of Pasadena.

Theme Study (NPS 1984) identified 24 surviving facilities which best represented the most important efforts in space exploration since the American Space Program was initiated in 1958. The American manned space program was an expression of Cold War values and emerged out of the competition between the United States and the Soviet Union for dominance—both literal and symbolic—of near-Earth space. It also used technologies which were developed specifically for military applications during World War II and later deployed against the nation’s perceived communist adversaries during the early years of the Cold War. At the same time, the American manned space program is also related to the theme of “Astronomy and Astrophysics” because of its direct contribution to the furtherance of knowledge within these scientific disciplines and because of its indirect contribution, through technological advancement, to future scientific discoveries which would result, for example, from the numerous deep space probes developed and managed by National Aeronautics and Space Administration (NASA) and the Jet Propulsion Laboratory (JPL) in Pasadena (Butowsky 1984).

Many associated resources have long since been destroyed, abandoned or altered to meet the changing demands of the space program. Two of the 24 surviving facilities are located within the study area in the Arroyo Seco cor-

ridor, the Space Flight Operations Facility and the Twenty-five Foot Simulator, both located at JPL in the Arroyo Seco corridor. From the beginning of its association with NASA in 1958, JPL has served as the primary NASA center for the unmanned exploration of the planets.

The Space Flight Operations Facility is the hub of the communications network through which NASA controls its unmanned spacecraft flying in deep space. This facility is where spacecraft tracking and scientific data are received and processed from JPL’s Deep Space Network. The Twenty-five Foot Space Simulator was built in 1961 and is the only NASA facility capable of producing high-quality space simulation for testing spacecraft under conditions of extreme cold; high vacuum; and intense, highly uniform, solar radiation. Both of these sites are national historic landmarks, and are described in greater detail in *Chapter 2: Resource Description*.

Cold War Historic Resources

A recently completed theme study on Cold War defensive sites found that because the Cold War era (1945–1991) is so recent, and the universe of potentially related properties is so vast, relatively few such properties have been identified, designated as national historic landmarks, or listed in the National Register of Historic Places. The majority of properties are fewer than fifty years old, and many have been demolished as sites have been deactivated or have been so altered as to be lacking in sufficient integrity for designation or listing. Although a few surveys have been made and several historic contexts have been written, there is an urgent need for more study and documentation because the resources are disappearing (Salmon 2011).

Santa Susana Field Laboratory Sites

The site known as the Santa Susana Field Laboratory (SSFL) comprises 2,850 acres in the Simi Hills, and was used for research and testing throughout the entire span of the Cold War era. *Chapter 2: Resource Description* includes a history and detailed description of the site. Recent surveys at NASA’s SSFL have identified nine individual sites and three historic districts related to the Cold War era as eligible for listing in the National Register of Historic Places (NASA 2009). The three eligi-



Nine sites and three districts at Santa Susana Field Laboratory have been identified as eligible for listing in the National Register of Historic Places. The three districts include the Alfa, Brava and Coca Test Areas that include rocket engine test stand structures and may be eligible for national historic landmark status upon further investigation (NASA 2009). The Alfa (shown left) and Brava test stands are proposed for possible retention, while the Coca test stands (shown right) are proposed for demolition due to contamination (NASA 2014). Photos: NPS.

ble historic districts would comprise the Alfa, Bravo, and Coca Test Areas are significant in association with the historic contexts of the Cold War and space exploration. The relevant properties and districts may be eligible for designation as national historic landmarks upon further evaluation (NASA 2009). Two (Alpha and Brava) are proposed for possible retention in NASA's recent *Record of Decision* regarding environmental cleanup activities at the Santa Susana Field Lab, while the third (Coca), is proposed for demolition due to contamination (NASA 2014).

Other Study Area Cold War Sites

The study area contains other recognized resources that relate to science and technology, including Nike missile sites and the Thompson-Ramo-Wooldridge laboratory in Solstice Canyon (SMMNRA), an important site of early pioneering space research. These resources are described in more detail in *Chapter 2: Resource Description*.

Astronomical Research

The Mount Wilson Observatory in the San Gabriel Mountains is the site of significant astronomical achievements, particularly with the use of the 100 inch Hooker telescope, as described in *Chapter 2: Resource Description*. The observatory was identified in a 1989 national historic landmark theme study as one

of several sites potentially eligible nationwide under the theme of "Astronomy and Astrophysics". Although a nomination was submitted at that time, the site has not been listed in the National Register of Historic Places or designated a national historic landmark. The Griffith Observatory in the Hollywood Hills, inspired by the Mount Wilson Observatory, has also been determined eligible for listing in the National Register of Historic Places.

Architecture and Urban Design

The mild climate, topography, and diverse mix of people and cultures in the Los Angeles region inspired varied styles and new innovations in architectural styles and structures. The study area reflects a wide range of properties associated with significant examples of architecture, landscape architecture, and urban design, containing hundreds of structures and historic districts listed, or eligible for listing, in the National Register of Historic Places and two national historic landmarks. Many more national historic landmarks designated for their architectural significance are located very near the study area. The City of Los Angeles is in the process of conducting a survey of historic resources. The survey process (Survey L.A.), which is nearly complete, has identified hundreds of structures with architectural significance.



The Santa Monica Mountains have been the venue for hundreds of films, including "Beau Geste" (1939) shown being filmed above. Photo: Bison Archives.

The Santa Monica Mountains and adjacent foothills alone contain 600 of the more than 2,000 architecturally significant buildings identified in Gebhard and Winter's book *Architecture in Los Angeles* (1985). Frank Lloyd Wright, Richard Neutra, Paul Williams, Charles Eames, and Wallace Neff are just a few of the architects with significant design accomplishments in the Santa Monica Mountains (NPS 2002). The impressive collection of architecture throughout the study area provides an excellent opportunity to express how the region's climate, landscape, fascination and reliance on the automobile, and diverse population influenced architecture on a national scale.

As described in *Chapter 2: Resource Description*, particularly notable properties in the study area include the Gamble House National Historic Landmark in Pasadena, known for its Arts and Crafts architecture, and houses associated with the Case Study House Program which is significant for its efforts to introduce modern domestic architecture the broader public following World War II. The most iconic examples of the Case Study House Program were the Eames House (Case Study House #8) in Pacific Palisades and Pierre Koenig's Case Study House #22 (Stahl House) in the Hollywood Hills. These steel-framed houses were widely publicized by pho-

tographer Julius Shulman. Shulman's dramatic photo of Case Study House #22 (the Stahl House), cantilevered atop a hill overlooking Los Angeles, made this house the recognizable image symbolizing the entire program (Moruzzi 2013). The Eames House National Historic Landmark is adjacent to the study area, while another seven Case Study Program houses within the study area, including the Stahl House, have been listed in the National Register of Historic Places.

Film Industry

The study area is primarily significant for its role in the transition from studio to location filming as the growing film industry took advantage of the area's mild climate and wide range of landscapes and architectural styles. *Chapter 2: Resource Description*, the section "Historic Context" includes a brief overview of the history of film in the Los Angeles area. When the film industry began to export the Hollywood version of American culture to the world, the Santa Monica Mountains became the venue for hundreds of films. The continued use of the Santa Monica Mountains for film production preserves a 75-year tradition of film-making at Paramount Ranch (determined eligible for listing in the National Register of Historic Places). This site in SMMNRA is held by some historians to be the nation's best remaining example of a film production facility from Hollywood's 'Golden Era of Motion Pictures.' Other portions of the study area, particularly in the Simi Hills, Santa Susana Mountains, and the Santa Clarita Valley were also used extensively for film production. For example, Corriganville Ranch, now a regional park, was a working film studio and movie ranch from 1937 to 1965. *Chapter 2* describes the range of resources related to this theme.

Recreation

In 1986, the NPS completed a theme study to evaluate sites that represent the most outstanding examples of properties associated with the history of recreation in America. Two sites in or near the study area, the Rose Bowl Stadium and the Santa Monica Looff Hippodrome, were identified as outstanding examples with national significance in the theme study which also analyzed sites such as amusement parks, ballparks, yacht clubs, resorts, racetracks, zoos and aquariums. Both of

The National Park Service uses a series of natural and cultural themes to categorize the important resources protected by national park units. The themes are used to evaluate whether resources in a study area would broaden and diversify resources protected by the national park system.

these sites are national historic landmarks, and are described in detail in *Chapter 2: Resource Description*. Griffith Park, one of the largest urban parks in the United States, has been determined eligible for listing in the National Register of Historic Places (Gonzalez and Anderson 2013).

Criterion 1 Conclusion

The Rim of the Valley Corridor provides outstanding examples of geologic resources, paleontological resources, native plant communities, wildlife, and free flowing rivers and streams. Nationally significant cultural resources include national historic landmarks and national historic trails related to the first European contact with Native Americans, historic settlement and migration, transportation, communication, and engineering, space exploration, astronomical research, oil production, recreation, and architecture. Other resources may also have national significance but warrant more study. These include the Arroyo Seco Parkway, water conveyance and storage infrastructure, and Santa Susana Field Laboratory structures. The Rim of the Valley Corridor study area meets criterion 1.

Criterion 2: Possesses Exceptional Value or Quality in Illustrating or Interpreting the Natural or Cultural Themes of our Nation's Heritage

Every unit of the national park system preserves important aspects of our nation's natural and/or cultural heritage. The National Park Service uses a series of natural and cultural themes to categorize the important resources protected by national park units. The themes are used to evaluate whether resources in a study area would broaden and diversify resources protected by the national park system.

Natural Resource Themes

For natural resources, the publication *Natural History in the National Park System and on the National Registry of Natural Landmarks* (NPS 1990) describes national regions and a series of natural history themes.

The geologic resources associated with the Transverse Ranges Province, diverse paleontological resources, and examples of biodiversity are exemplary. These resources represent the following NPS natural themes.

Landforms of the Present

The "Landforms of the Present" theme describes the character of the landscape as a physical and scenic entity as it exists today, as well as present and past geologic events and processes. Principal features of the natural landscape such as mountain systems, river systems and lakes are included in this theme. Each landform possesses certain distinguishing qualities and characteristics which set it apart from others. The following subtheme related to Landforms of the Present is represented in the study area:

- **Mountain Systems (Geology/Transverse Ranges).** The Santa Monica Mountains, Simi Hills, Conejo Mountain Volcanic complex, Santa Susana Mountains, San Gabriel Mountains and the Verdugo Mountains possess exceptional value in illustrating and interpreting mountain building, and plate tectonics. Specifically, these mountain ranges illustrate the geologic story of the Transverse Ranges Province. Over the past hundred and sixty million years, the rock formations and mountain ranges in the Western Transverse Ranges have been formed by the forces of weathering, erosion, sedimentation, compaction and pressure as well as seismic activity (earthquakes, uplift) and volcanism creating spectacular scenery, geologic formations, and topography.

Geologic History (Paleontological Resources)

The theme "Geologic History" represents the geologic history of the earth as found in rocks. These records of geologic history may be read from the composition, structure and relationships of rocks and fossils they contain.

Collectively, the Santa Monica Mountains, Simi Hills, Conejo Volcanic complex, the Santa Susana Mountains, and the westernmost San Gabriel Mountains contain rock formations with fossils from the Jurassic Period through the Holocene Epoch. The following subthemes related to "Geologic History" are represented in the study area:

- **Triassic – Cretaceous Periods:** The Santa Monica Slate and Tuna Canyon formations in the Santa Monica Moun-

tains, and the Chatsworth formation in the Simi Hills and Santa Susana Mountains, contain a range of fossil species from these geologic periods. A number of new species are described from the Tuna Canyon formation.

- **Paleocene – Eocene Epochs:** Four geologic formations, including the Santa Susana (Coal Canyon), Simi Conglomerate, Las Virgenes Sandstone, and Lajas formations represent geologic history of these epochs. These formations are found in SMMNRA, as well as the Simi Hills and Santa Susana Mountains. Many new species were described from the Santa Susana (Coal Canyon) and Lajas formations.
- **Oligocene – Recent Epochs:** The majority of fossiliferous formations in the study area represent these geologic epochs, which represent the mid-upper Cenozoic Era. Fossiliferous formations from these epochs are found in SMMNRA, the Simi Hills, the Santa Susana Mountains, the Conejo Mountain area, and the San Gabriel Mountains.

Land Ecosystems

The theme “Land Ecosystems” represents vegetation types as well as the animal populations and physical environmental features which are often important elements in identifying and evaluating sites. Land ecosystem themes represented by plant communities in the Rim of the Valley Corridor study area provide a unique opportunity to interpret the rich mosaic of native southern California habitats. Within a relatively short distance, visitors can experience excellent examples of coastal, riparian, montane, desert and subalpine habitats.

The following subthemes related to Land Ecosystems, as defined in the publication “Natural History in the National Park System,” (NPS 1990) are represented in the study area. It should be noted that the themes are defined more broadly than current vegetation classification systems that are referenced in biological resources description in Chapter 2:

- **Grassland:** Less than one percent of California’s native grassland is still intact today. Outstanding examples of native grassland within the study area

include Laskey Mesa in the Simi Hills, a 200-acre plateau that contains on the best remaining examples in southern California. Smaller areas of native grassland are found in several sites within SMMNRA (Point Mugu State Park, Deer Creek, Yellow Hill, Cheeseboro Canyon) and on Oat Mountain where it is associated with extensive oak savanna.

- **Chaparral (shrubs and woodland including evergreen forest trees such as oak and tanbark):**
 - *Shrub-dominated:* Outstanding examples of coastal sage scrub and chaparral are found throughout the mountains and hills of the study area. These habitats harbor numerous rare, threatened, and endangered species as well as endemic species not found anywhere else.
 - *Woodland:* Outstanding examples of coast live oak woodland, valley oak woodland, montane hardwood forest, riparian forest are located in SMMNRA, the Simi Hills and Santa Susana Mountains, the Verdugo Mountains, and the San Gabriel Mountains. The Santa Susana Mountains contain a particularly high diversity of oak woodlands including valley oak, canyon live oak, interior live oak, and coast live oak.
 - *Dry Coniferous Forest:* The San Gabriel Mountains and foothills, Upper Santa Clara River, and Santa Susana Mountain contain outstanding examples of montane-hardwood conifer, juniper woodland, pinyon-juniper woodland, and Sierran mixed conifer woodlands.

Aquatic Ecosystems Themes

The theme “Aquatic Ecosystems” is based on geomorphic and other physical aspects of aquatic ecosystems. The subtheme “Streams” represents aquatic ecosystems with flowing waters. The following subtheme related to Aquatic Ecosystems is represented in the study area:

- **Streams:** Some of the best remaining examples of alluvial fan sage scrub are

located in the foothill canyons of Santa Susana Mountains and San Gabriel Mountain as well as the Santa Clara River, providing an exceptional opportunity to preserve and interpret rare remnants of southern California natural heritage. River and stream systems in the Santa Monica Mountains, Santa Susana Mountains, Verdugo Mountains, San Gabriel Mountains and the Santa Clara River valley contain high quality riparian habitat which support numerous rare, threatened, and endangered species.

Cultural Themes

In evaluating the significance and suitability of cultural resources within or outside the national park system, the NPS uses the publication *NPS Thematic Framework (Cultural Resources)* for history and prehistory (*Appendix F*). The framework is an outline of major themes and concepts that help to conceptualize American history. It is used to assist in the identification of cultural resources that embody America's past and to describe and analyze the multiple layers of history encapsulated within each resource. Through eight concepts that encompass the multi-faceted and interrelated nature of human experience, the thematic framework reflects an interdisciplinary, less compartmentalized approach to American history.

As documented in *Chapter 2*, the study area contains a wide range of cultural resources representing all of the themes identified in the cultural thematic framework. The following section identifies those themes represented by resources of national or potential national significance as described under Criterion 1.

Peopling Places

The theme "Peopling Places" examines human population movement and change through prehistoric and historic times. It also looks at family formation; at different concepts of gender, family, and sexual division of labor; and at how they have been expressed in the American past. The "Peopling Places" theme includes such topics as family and the life cycle; health, nutrition, and disease; migration from outside and within; community and neighborhood; ethnic homelands; encounters, conflicts, and colonization. Distinctive and

important regional patterns join together to create microcosms of America's history and to form the "national experience." Topics under this theme represented by nationally significant resources within the study area include:

- **Ethnic Homelands:** Thousands of archaeological sites found within the study area depict more than 10,000 years of human occupation.
- **Migration from Outside and Within:** The Juan Bautista de Anza National Historic Trail and Route 66 are significant for the role they played in the settlement of the Los Angeles region and the western United States.
- **Encounters, Conflicts, and Colonization:** Juan Bautista de Anza National Historic Trail played a significant role in Spanish colonization of Alta California and the resultant displacement of indigenous cultures and societies that resulted from colonization efforts.

Expressing Cultural Values

This theme covers expressions of culture—people's beliefs about themselves and the world they inhabit. This theme also encompasses the ways that people communicate their moral and aesthetic values. Topics that help define this theme relevant to the study area include:

- **Visual and Performing Arts:** Paramount Ranch and other sites related to the film industry throughout the study area convey the significance of film-making in southern California. The film industry, along with oil, helped to propel the economic development and growth of Los Angeles. The significance of the motion picture industry in the 20th century stretches beyond the borders of the United States and affects contemporary culture worldwide.
- **Architecture, landscape architecture, and urban design:** In the field of architecture, the nearby Eames House and the Gamble House national historic landmarks have both been designated national historic landmarks and both reflect nationally significant examples of architecture born out of the region's landscape and mild climate. Many other

structures within the study area collectively reflect significant examples of architecture.

- **Popular and Traditional Culture: Recreation and Culture, Sports Facilities:** The Rose Bowl National Historic Landmark has outstanding significance in the field of recreation. The Rose Bowl's renown, while primarily linked to college football, has been enhanced by its use for World Olympics and other national and international sporting events.

Developing the American Economy

This theme reflects the ways Americans have worked and materially sustained themselves by the processes of extraction, agriculture, production, distribution, and consumption of goods and services. In examining the diverse working experiences of the American people, this theme encompasses the activities of farmers, entrepreneurs, and managers, as well as the technology around them.

Topics under this theme represented by nationally significant resources within the study area include:

- **Extraction and Production:** Well No. 4, Pico Canyon Oil Field National Historic Landmark was the first major producer of southern California oil. Oil had the greatest impact on the regional economy and shifted the population and political power within California from north to south.
- **Transportation and Communication**
 - *Juan Bautista de Anza National Historic Trail.* The colonists of the Anza expedition helped broaden the agricultural base of Alta California and introduced some skilled trades.
 - *The Old Spanish Trail National Historic Trail* had wide-ranging effects on the economy of the Mexican southwest. The route was later used for the alignment of Route 66, which facilitated western migration to the region in the 20th century.
 - *The Butterfield Overland Stage Route* was authorized by Congress in 1857 to improve communication between the eastern United States and Califor-

nia, which became a more significant component of the U.S. economy following the gold rush.

Expanding Science and Technology

This theme focuses on science, which is modern civilization's way of organizing and conceptualizing knowledge about the world and the universe beyond. Technology is the application of human ingenuity to modification of the environment in both modern and traditional cultures. Topics under this theme that are represented by nationally significant resources within the study area include: 1) experimentation and invention, 2) technological applications, 3) scientific thought and theory:

- **Experimentation and Invention:**
 - *Jet Propulsion Laboratory* experimentation and invention has played a significant role in scientific innovation in the areas of astrophysics, rocket science, and deep space exploration.
 - *Mount Wilson Observatory:* Astronomy questions, including the nature of sunspots, the temperature and composition of stars, and the structure and origin of the universe were addressed by some of the greatest astronomers in the world using the telescopes and other equipment at the Mount Wilson Observatory.
- **Technological Applications:**
 - Technological innovations at the *Jet Propulsion Laboratory* include the creation of a communications network through which NASA controls its unmanned space craft and development of a high quality space simulation facility for testing spacecraft under the extreme conditions of deep space. Both of these played a crucial role in the development of NASA's interplanetary and deep space probes.
- **Scientific Thought and Theory:**
 - The *Jet Propulsion Laboratory* NHLs associated with the exploration of deep space have contributed directly to the advancement of scientific knowledge within the fields of astronomy and astrophysics.

- Research efforts at the *Mount Wilson Observatory* have shaped current scientific thought and theory in astronomy.

Themes Related to Resources of Potential National Significance

Shaping the Political Landscape

Topics under this theme represented by resources of potential national significance within the study area include:

- **Military Institutions and Activities:** *The Cold War* is the subject of a Congressionally mandated national historic landmark theme study (Senate Bill 2561). Among the resources which Congress recommended for consideration in this theme study were Intercontinental Ballistic Missiles and manufacturing sites. These categories include several sites located within the study area such as the Jet Propulsion Laboratory at Pasadena, and the Santa Susana Field Laboratory in the Simi Hills. Cold War guided missile technology was researched, developed, and tested at all of these sites.

Developing the American Economy

Topics under this theme that are represented by resources of potential national significance within the study area include:

- **Transportation and Communication:** The *Arroyo Seco Parkway* is potentially nationally significant for its advancement of transportation engineering, particularly the modern freeway.

Expanding Science and Technology

Topics under this theme that are represented by resources of potential national significance within the study area include:

- **Experimentation and Invention:** The *Santa Susana Field Laboratory* is significant for the development and testing of rocket engines from the start of the Cold War in 1948. The site was used for research and testing throughout the entire Cold War era.
- **Technological Applications:** The *Santa Susana Field Laboratory* contributed

technological innovation related to rocket engines that supported missile development during the Cold War and initial deep space exploration. The Santa Susana Field Laboratory also contributed to the development of atomic energy through research programs developed in response to the Atoms for Peace initiative of 1953. This research led to the design of the first nuclear reactor designed specifically for civilian purposes.

Transforming the Environment

This theme examines the variable and changing relationships between people and their environment, which continuously interact. The environment is where people live, the place that supports and sustains life. The American environment today is largely a human artifact, so thoroughly has human occupation affected all its features. This theme acknowledges that the use and development of the physical setting is rooted in evolving perceptions and attitudes. Topics under this theme represented by resources of potential national significance include:

- **Manipulating the environment and its resources:** The isolated Los Angeles region required significant engineering feats to grow from an isolated pueblo to the second largest metropolitan area in the United States. The importation of water and elaborate flood protection systems that provide for growth are among the most elaborate in the United States.
- **Protecting and preserving the environment:** Despite dramatic alternatives to natural systems and native habitat, southern California is one the most biological diverse areas in the United States. Recently, numerous local and national initiatives have combined efforts the revitalize and restore the Los Angeles River, while simultaneously exploring ways to restore habitat while continuing to protect urban areas from periodic flooding.

Criterion 2 Conclusion

The Rim of the Valley Corridor study area possesses exceptional quality in illustrating or interpreting a wide range of natural and cultural history themes of the nation's heritage.



The study area includes some of the most productive and diverse fossil sites in the United States in terms of the quality, quantity, diversity of species found, and geologic eras represented, providing significant opportunities for scientific study. A 50 million year old *Turritella* fossil from the study area is shown. Photo: NPS.

Criterion 3: It Offers Superlative Opportunities for Public Enjoyment, or for Scientific Study

Scientific Study

Mountain Building and Geology

Scientific study of geological features in the study area continues to provide major contributions to our understanding of plate tectonics and the rotation of the Transverse Ranges Province. Paleo-magnetic studies in particular contribute to understanding of how the earth formed. Scientific studies in the San Gabriel Mountains continue to provide contributions to our understanding of plate tectonics along the San Andreas Fault.

Paleontological Resources

New fossil species are still being discovered and are furthering the study of paleoecology. The fossil record found within the study area includes specimens of terrestrial and marine flora and fauna from an incredible range of ecological zones and epochs from the Jurassic Period to the Holocene Epoch. The sedimentary rock layers deposited during the Cenozoic and now exposed in the northern half of the study area are estimated to be 35,000 feet thick, possibly the thickest Cenozoic deposits in North America and one of the thickest most complete records of the Cenozoic Era on earth. Study of the Miocene volcanic rocks (also known as the Conejo Volcanic complex) is providing valuable evidence of the great Miocene rotation and unearthing flora fossil specimens that provide a glimpse of the Miocene environment. Vertebrate fossils from the Sespe formation are shedding light on the exciting species that lived in North America at the height of the Age of Mammals. Excellent opportunities for scientific research of geologic processes and evolution, as well as paleoecology are available.

Some of these scientifically important fossil resources are being lost, rapidly deteriorating and decomposing when exposed on the surface and others are being lost to unauthorized collecting. Other fossil resources within the study area may be on land vulnerable to future development. Such development sometimes opens up short term opportunities for scientific discoveries of fossils such as the ongoing mitigation work at the Simi Valley landfill (Lander 2011). Once the development is underway, the fossils are removed from the site and added to collections such as those at the Natural History Museum of Los Angeles County where they can be accessed by future researchers. The sites themselves, however, are permanently altered and their value to future scientists may be compromised, depending on the extent of the mitigation.

Biodiversity

The potential for scientific discovery related to biodiversity is high in the study area. In addition to the wide range of sensitive species, are additional species considered rare enough to be eligible for formal designation as rare, threatened or endangered. Many more species have not yet been described or named, particularly plants and invertebrates. For example, although much is known about the biological resources of the Santa Susana Mountains, there are still new, previously undescribed species being discovered here, particularly invertebrates (pers. comm. David Magney 2011).

The study area also includes the northernmost or southernmost ranges for several plant species. For example, the Verdugo Mountains are the northernmost location for mission manzanita (*Xylococcus bicolor*), a shrub found in chaparral that can be found from the study area, south through San Diego County and



This panoramic view, west from the Verdugo Mountains (foreground) to Griffith Park (end of mountains near center of photo), illustrates the relationship between the eastern Santa Monica Mountains and the Verdugo Mountains and how they function as ecological stepping stones. Note the Glendale Narrows reach of the Los Angeles River flows between the two mountain ranges. Photo: NPS.



Nature centers throughout the study area, such as Audubon Center at Debs Park, located in a densely populated area of Los Angeles in the Arroyo Seco corridor, provide excellent opportunities for both recreation and connecting people to significant natural and cultural resources. Photo: NPS.

into Baja, Mexico. Because the Verdugo population is disjunct from the southern California population, this could indicate that the species has been more wide ranging in the past. Plant occurrences at the edges of their ranges are generally thought of as being important because they may be genetically critically different from the occurrences at the center of the species' range. The small genetic difference may be an evolutionary advantage that allows species to better cope with changing conditions. The confluence of several species' range edges provides a unique opportunity for study of plant evolution and potential response to climate change.

Although the study area is located within and adjacent to a large metropolitan area, not all portions of the study area have been assessed for biological resources. Studies that have taken place and yielded insights into the study area's high biodiversity and to previously undiscovered species, have largely been conducted in response to threats to undeveloped or relatively undisturbed areas. Given this pattern, it is likely that areas still undeveloped, or relatively undisturbed, could provide outstanding opportunities for scientific research, particularly given the large number of universities, colleges and other institutions in the region.

Locations such as Griffith Park and the Verdugo Mountains provide opportunities for important scientific study of genetic interchange between otherwise isolated populations such as the Santa Monica and San Gabriel Mountains. Because of their geographic location, Griffith Park and the Verdugo Mountains serve as potential stepping stones for gene flow and species movement between these larger areas (LADRP 2012a).

The dynamics between areas of exceptionally high biodiversity and human settlement and development, including highly urbanized areas, provide unique opportunities for scientific research related to the urban wildland interface, the effects of anthropogenic disturbance, and ecological enhancement and restoration.

Cultural Resources

The richness and concentration of archeological sites in the study area provides opportunities for scientific study of native culture's adaptation to the environment and their interactions with other coastal and interior groups. The study area can also be used to highlight exceptional opportunities for education and interpretation about cultural themes such as "Peopling Places", "Expressing Cultural Values", "Expanding Science and Technology", and "Developing the American Economy".

Opportunities for Public Enjoyment

More than 18 million people live in close proximity to the Rim of the Valley Corridor. Public open spaces and trails within the study area provide superlative opportunities for a wide range of recreational activities including hiking, biking, horseback riding, environmental education, and birding.

The study area is an excellent location for Angelenos to learn how the growth of Los Angeles has affected the environment. Opportunities for volunteerism and citizen science abound with the wealth of biodiversity in the study area. Several nature centers serve the study area on a limited basis. In addition, many of the geologic features of the Transverse Ranges Province are accessible to both scientists and visitors. Due to the proximity of the Transverse Ranges to the millions of people who live in and visit southern California, the interpretive value of this unique "tectonic story with a twist," would be of great interest.

Scenic vistas offer opportunities for wayside exhibits and ranger programs.

The Rim of the Valley Corridor study area includes interpretive opportunities and properties of differing levels of significance that represent successive periods of human history and culture, including pre-European, Spanish colonial, Mexican, and successive eras of economic and cultural development under the American period. Hundreds of sites listed in the National Register of Historic Places and numerous state and local historic parks and sites provide opportunities to further illustrate these themes. Many of these sites are located within existing parks or protected areas.

Criterion 3 Conclusion

The Rim of the Valley Corridor offers superlative opportunities for public enjoyment and scientific study. The Santa Monica Mountains and the San Gabriel Mountains have a long history of research in geology, paleontology, Mediterranean ecosystems, and archeology. Public access to specific rock formations such as those used for paleomagnetic testing could provide future geologists with scientific opportunities, and interpreters with opportunities to explain this unique geology to the public. Comparatively few studies have been published regarding the natural and cultural resources of the Simi Hills, Santa Susana Mountains, and the Verdugo Mountains, therefore creating high potential for scientific discovery.

Criterion 4: It Retains a High Degree of Integrity as a True, Accurate, and Relatively Unspoiled Example of a Resource

Despite extensive urbanization and development in the region, the study area contains nationally significant resources with a relatively high degree of integrity. Approximately 84% of the study area lands are protected recreation areas, conserved open spaces, or vacant undeveloped lands. Isolated pockets of significant resources also exist in portions of the study area where extensive urbanization has fragmented natural habitat.

The study area features large areas of open space that contain relatively undisturbed habitat occurring in varying sizes, configurations, environments, and levels of integrity. Because

of the high degree of biodiversity and range of biological communities in the study area, even smaller, fragmented habitat areas can be significant as ecological stepping stones and as habitat for sensitive species, particularly more mobile species such as birds. At the regional scale, this network of habitat areas comprised of larger and smaller areas contributes to the ecosystem health and biodiversity of the region. Given the study area's significant land use changes over time, agricultural uses (both ranching and irrigated agriculture) and later urbanization, the study area retains remarkably high biodiversity.

Numerous open spaces, historical parks and sites have preserved cultural resources within the study area, many of which have high levels of integrity as depicted by the number of national historic landmarks and sites listed in the National Register of Historic Places. There are many open spaces and undeveloped lands in the Simi Hills, Santa Susana Mountains, and Conejo Mountain area that have not been surveyed and have high potential for finding archeological resources.

San Gabriel Mountains

Early conservation of the San Gabriel Mountains in 1891 has largely preserved its natural, cultural, and scenic integrity. Although some areas have been altered for flood control and recreational facilities, as a whole, the native plant communities and river systems remain intact and provide a refuge for plants and wildlife. Areas with significant resources retain a high degree of integrity and are acknowledged as relatively unspoiled examples of their type.

Santa Monica Mountains

The Santa Monica Mountains and parts of the Simi Hills have been protected by a consortium of national, state and local agencies under the umbrella of Santa Monica Mountains National Recreation Area since 1978. The sites with significant resources retain a high degree of integrity and are relatively unspoiled examples of their type of resource.

Conejo Mountain Area, Simi Hills, and Santa Susana Mountains

There are numerous open space and park lands within these areas that retain a high degree of integrity and are relatively unspoiled

The study finds that the Rim of the Valley Corridor contains resources of national significance, many of which have been recognized through previous studies or designations.

examples of natural and cultural resources. Examples of such locations include Rocky Peak, Pico Canyon, Towsley Canyon, Santa Clarita Woodlands, Santa Susana Pass State Historic Park, Burro Flats, Upper Las Virgenes Open Space Preserve, open space and parklands in Thousand Oaks, and Wildwood Park.

Los Angeles River and Arroyo Seco

The urban fabric of the Los Angeles River and Arroyo Seco corridors contain well-preserved and significant cultural resources related to the settlement of the region and architectural and urban design. This includes four national historic landmarks (Gamble House, Rose Bowl and the two Jet Propulsion Laboratory sites). Numerous historic districts along the Arroyo Seco corridor preserve entire neighborhoods that are excellent examples of the Arts and Crafts movement in the region. The Gamble House National Historic Landmark is the most significant example of this style of architecture and retains a high degree of integrity.

Upper Santa Clara River

Most of the region's rivers have been altered for flood protection or water resource development resulting in the loss of approximately 96% of historic riparian communities. However, the Santa Clara River has remained largely natural and as such, retains a relatively high level of integrity.

Wildlife Corridors and Ecological Connectivity

Despite the high levels of urban development in the region, the high biodiversity of the study area has largely been retained due to the integrity of ecological corridors that allow species movement and interchange. One of the most significant wildlife corridors for the Santa Monica Mountains is the Santa Monica – Sierra Madre wildlife corridor. This wildlife corridor connection is one of the few coastal to inland connections remaining in the South Coast Ecoregion, stretching from the rugged Santa Monica Mountains at the coast to the gently sloping Simi Hills, and on to the jagged peaks of the Santa Susana Mountains, and the Sierra Madre Ranges of Los Padres National Forest. A rich mosaic of natural communities occur in this area, from coast live oak woodland, valley oak savanna, and walnut woodlands, to chaparral, coastal sage scrub, grasslands, and diverse riparian forests and

woodlands. The Santa Monica Mountains as a physically isolated geographic area is insufficient to provide long-term persistence of mountain lions dependent on larger scale habitat ranges without this connectivity. Ecological connectivity studies have identified linkages that represent a range of species and the key habitats needed to support them long-term. Overall, the ecological integrity of the Santa Monica Mountains and other habitat rich portions of the study area are dependent on long-term physical connectivity (Riley et al. 2014). Another important regional wildlife corridor is the link between the San Gabriel Mountains to the Sierra Pelona (Spencer et al. 2010).

Criterion 4 Conclusion

Nationally significant resource areas within the study area retain a high degree of integrity and contain relatively unspoiled examples of significant resources, despite extensive land use changes over time associated with agriculture and urbanization.

Overall Conclusions – National Significance

The study finds that the Rim of the Valley Corridor contains resources of national significance, many of which have been recognized through previous studies or designations. This includes national park or trail system designations, NPS special resource study evaluation, and national historic landmark designations.

Nationally significant natural resources include outstanding examples of geologic history including the evolution of the Transverse Ranges Province and a diversity of well-preserved marine and terrestrial paleontological resources. The study area contains a high level of biodiversity including outstanding examples of native grasslands, coastal sage scrub, chaparral, dry coniferous forests, and alluvial fan sage scrub. Nationally significant cultural resources represent a wide range of themes related to human use and settlement in the region. The high concentrations of archaeological resources provide insight into more than 10,000 years of Native American history. Outstanding examples of cultural resources also include national historic landmarks representing topics such as architecture, recreation, space exploration, and oil extraction, as well as national historic trails that mark important

To be considered suitable for addition to the national park system, an area must represent a natural or cultural resource type that is not already adequately represented in the national park system, or is not comparably represented and protected for public enjoyment by other federal agencies; tribal, state, or local governments; or the private sector.

national events related to migration and commerce. Additionally, the study area features cultural resources identified as significant through national historic landmark theme studies in areas such as astronomy and astrophysics.

The landscapes and resources of the study area offer superlative opportunities for public enjoyment and scientific study. More than 18 million people live within a two hour drive of the study area. Existing public open spaces, recreation areas, and trails provide superlative opportunities for hiking, biking, equestrian activities, outdoor education, and birding. The varied topographic features provide highly scenic landscapes including seashore, mountain views, and verdant canyons. Cultural resources depict a wide range of historical themes and provide opportunities to interpret the region's rich cultural heritage.

The dynamics between areas of exceptionally high biodiversity and long history of human settlement provide unique opportunities for scientific research and study. The Santa Monica Mountains and the San Gabriel Mountains have a long history of research in geology, Mediterranean ecosystems, and astronomy. Comparatively fewer studies have been published on the natural and cultural resources of the Simi Hills, Santa Susana Mountains, and Verdugo Mountains, which have high potential for scientific study.

The study area retains a high degree of integrity and contains relatively unspoiled examples of significant resources, despite impacts in some areas from agriculture, urban development, and associated infrastructure. Approximately 84% of the study area lands are protected recreation areas, conserved open spaces, or vacant undeveloped lands. Isolated pockets of both nationally significant natural and cultural resources are also present in the more urbanized portions of the study area.

Suitability

To be considered suitable for addition to the national park system, an area must represent a natural or cultural resource type that is not already adequately represented in the national park system, or is not comparably represented and protected for public enjoyment by other

federal agencies; tribal, state, or local governments; or the private sector.

Adequacy of representation is determined on a case-by-case basis by comparing the potential addition to other comparably managed areas representing the same resource type, while considering differences or similarities in the character, quality, quantity, or combination of resource values. The comparative analysis also addresses rarity of the resources, interpretive and educational potential, and similar resources already protected in the national park system or in other public or private ownership. The comparison results in a determination of whether the proposed new area would expand, enhance, or duplicate resource protection or visitor use opportunities found in other comparably managed areas.

For the purposes of this analysis, only those resources determined nationally significant are evaluated for suitability. Nationally significant resources within Santa Monica Mountains National Recreation Area (SMMNRA) are already represented in the national park system and are not analyzed for suitability. The San Gabriel Mountains, foothills, and Upper Santa Clara River areas within the study area were recently evaluated in the *San Gabriel Watershed and Mountains Special Resource Study (San Gabriel Study)* and found to be suitable for addition to the national park system (NPS 2013f). Therefore, the other portions of the study area are the focus of this suitability analysis.

NPS Thematic Framework – Natural and Cultural Themes

Every unit of the national park system preserves important aspects of our nation's natural and/or cultural heritage. The National Park Service (NPS) uses a series of natural history and cultural themes to categorize the important resources protected by national park units. The themes are used to evaluate whether resources in a study area would broaden and diversify resources protected by the national park system. Nationally significant cultural and natural resources in the study area are organized by these themes as described in the previous section, "National Significance".

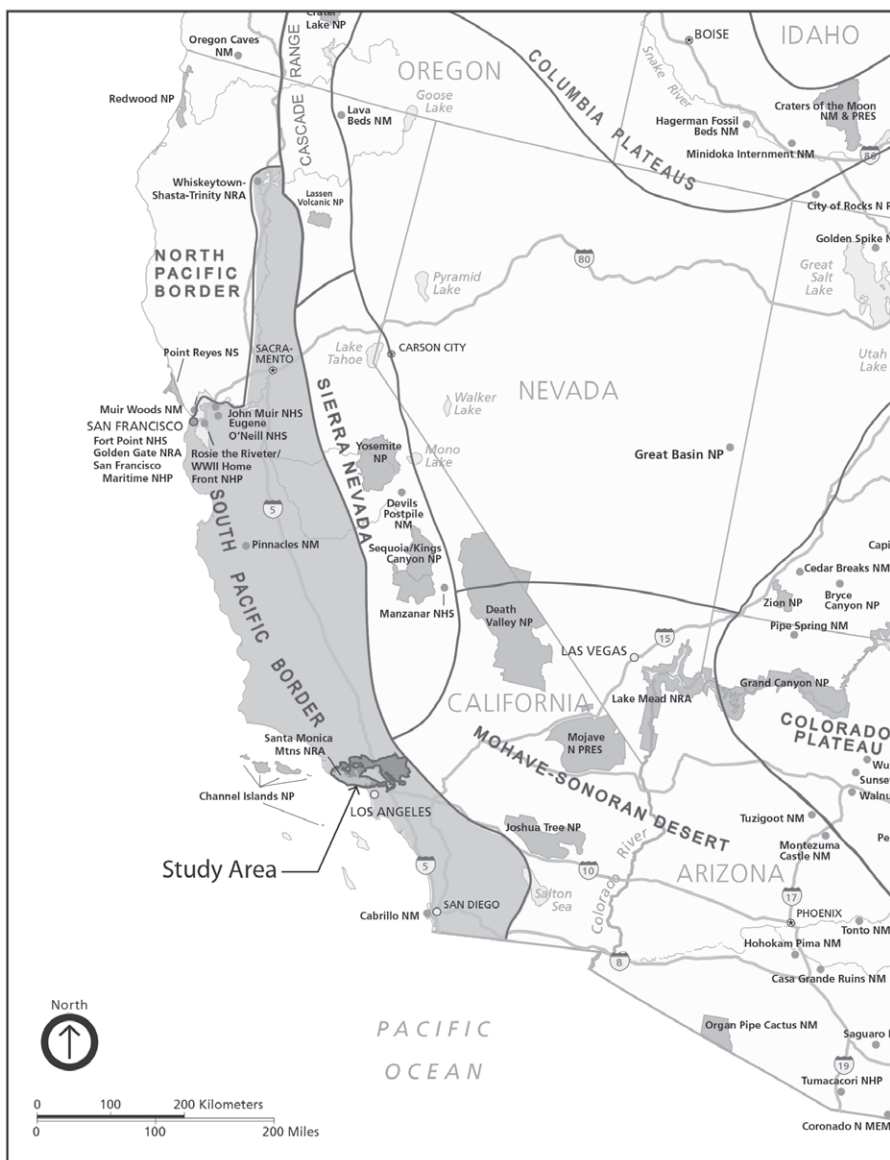


Figure 3-2: South Pacific Border Region

For natural resources, the publication, *Natural History in the National Park System and on the National Registry of Natural Landmarks* (NPS 1990) describes national regions and a series of natural history themes. The study area lies within the South Pacific Border region, which includes coastal California from the San Francisco Bay area to the Mexico border, and the San Joaquin Valley (Figure 3-2: Southern Pacific Border Region). The South Pacific Border region provides the context for determining whether nationally significant natural resources within the study area are adequately represented in the national park system or other comparably managed areas.

For cultural resources, the cultural resources thematic framework describes overarching themes and subthemes (Appendix F: NPS Thematic Framework (Cultural Resources)).

Evaluation of Themes Represented in the Rim of the Valley Corridor Study Area

The following analysis is organized by natural and cultural history themes represented in the study area. Many of the natural and cultural resource themes represented in the study area are already represented in the area's existing national park and trail system designations including SMMNRA, the Juan Bautista de Anza National Historic Trail, and the Old Spanish National Historic Trail. The Route 66 Corridor Program is another NPS designated program that seeks to protect the nationally significant resources associated with the Route 66 Corridor.

Some natural and cultural themes represented by nationally significant resources in the study area are not currently represented in the national park and trail system. This analysis evaluates whether these resources would expand, enhance or duplicate resource protection or visitor use opportunities in other national park units or comparably managed areas.

Table 3-2: *Natural and Cultural Resource Themes Represented in the Rim of the Valley Corridor Study Area* outlines the themes represented in existing national park and trail designations within the study area and then identifies which of those themes are represented by nationally significant resources in the remaining portions of the study area. Those study area resources previously determined suitable in the San Gabriel Watershed and Mountains Special Resource Study are also outlined in Table 3-2.

Natural Resource Themes

Landforms of the Present: Mountain Systems

The "Landforms of the Present" theme describes the character of the landscape as a physical and scenic entity as it exists today, as well as present and past geologic events and processes. Principal features of the natural landscape such as mountain systems, river systems and lakes are included in this theme. Each landform possesses certain distinguishing qualities and characteristics which set it apart from others. The following subthemes related to "Landforms of the Present" are represented in the study area:

Table 3-2: Natural and Cultural Resource Themes Represented in the Rim of the Valley Corridor Study Area

Theme	Represented in Existing National Recreation Area and/or National Trails	Represented in San Gabriel Study portion of Rim of the Valley Corridor (Western San Gabriel Mountains and Foothills, Upper Santa Clara River)	Represented in Study Area (outside of SMMNRA and San Gabriel Study Area and excluding National Trails)
<i>Landforms of the Present</i>			
Cuestas and Hogbacks	Yes - SMMNRA	No	No
Mountain Systems	Yes - SMMNRA	Yes - the San Gabriel Mountains contain diverse geologic features and provide an excellent example of mountain building as a result of plate tectonics.	Yes - the Conejo Mountains, Simi Hills, Santa Susana Mountains, and Verdugo Mountains-San Rafael Hills all contain geologic features that further depict mountain building as a result of plate tectonics.
Seashores, Lakeshores, and Islands	Yes - SMMNRA	No	No
Caves and Springs	Yes - SMMNRA	No	No
<i>Geologic History</i>			
Triassic-Cretaceous Periods	Yes - SMMNRA	No	Yes - Fossil bearing formations include: Chatsworth formation (Simi Hills, Santa Susana Mountains)
Paleocene – Eocene Epochs	Yes - SMMNRA	No	Yes - Fossil bearing formations include: Las Virgenes formation (Simi Hills, Santa Susana Mountains)
Oligocene-Recent Epochs	Yes - SMMNRA	No	Yes - Fossil bearing formations include: Conejo Volcanic complex (Simi Hills, Santa Susana Mountains, Conejo Mountain area); Towsley formation (Simi Hills, Santa Susana Mountains)
<i>Land Ecosystems</i>			
Grassland	Yes - SMMNRA	No	Yes - High quality perennial grasslands at Laskey Mesa and Oat Mountain (Simi Hills and Santa Susana Mountains)
Dry Coniferous Forest	No	Yes - Sierran mixed conifer forest, ponderosa pine forest, montane hardwood-conifer (San Gabriel Mountains) and juniper woodland (Upper Santa Clara River)	Yes -Sierran mixed conifer forest (Santa Susana Mountains)
Chaparral (shrubs and woodland including evergreen forest trees)	Yes - SMMNRA	Yes – Mixed chaparral, chamise-redshank chaparral, montane such as oak and tanbark) chaparral, coastal sage scrub, coast live oak woodlands, montane hardwood forest, riparian forest (throughout area)	Yes – Mixed chaparral, chamise-redshank chaparral, coast live oak woodlands, riparian forest (throughout area), valley oak woodlands (Santa Susana Mountains)
<i>Aquatic Ecosystems</i>			
Marine Environmental	Yes - SMMNRA	No	No
Estuaries	Yes - SMMNRA	No	No
Streams	Yes - SMMNRA	Yes -High quality riparian habitat (throughout area) and alluvial fan sage scrub (Upper Santa Clara River, Tujunga Wash)	Yes - Riparian habitat (throughout area)
<i>Peopling Places</i>			
Ethnic Homelands	Yes - SMMNRA	No	Yes - Over 500 recorded archeological sites
Migration from Outside and Within	Yes - Juan Bautista de Anza National Historic Trail; Old Spanish National Historic Trail; Route 66	No	No

Table 3-2: Natural and Cultural Resource Themes Represented in the Rim of the Valley Corridor Study Area (continued)

Theme	Represented in Existing National Recreation Area and/or National Trails	Represented in San Gabriel Study portion of Rim of the Valley Corridor (Western San Gabriel Mountains and Foothills, Upper Santa Clara River)	Represented in Study Area (outside of SMMNRA and San Gabriel Study Area and excluding National Trails)
<i>Peopling Places (continued)</i>			
Encounters, Conflicts and Colonization	Yes - Juan Bautista de Anza National Historic Trail, SMMNRA (Saddle Rock Ranch Pictograph)	No	No
<i>Expressing Cultural Values</i>			
Architecture, landscape architecture urban design	No	No	Yes - Gamble House National Historic and Landmark, Eames House National Historic Landmark
Popular and Traditional Culture	No	No	Yes - Rose Bowl National Historic Landmark
Visual and Performing Arts	Yes – SMMNRA (Paramount Ranch)	No	No
<i>Developing the American Economy</i>			
Transportation and Communication	Yes - Juan Bautista de Anza National Historic Trail; Old Spanish National Historic Trail; Route 66	No	Yes. Butterfield Overland Trail
Extraction and Production	No	No	Yes - Well No.4, Pico Canyon Oil Field National Historic Landmark
<i>Expanding Science and Technology</i>			
Experimentation and Invention	No	Yes - Mt. Wilson Observatory (potentially NHL eligible)	Yes – Jet Propulsion Laboratory sites (Space Flight Operations Facility National Historic Landmark, Twenty-five Foot Simulator National Historic Landmark)
Technological Applications	No	No	Yes - Jet Propulsion Laboratory sites (Space Flight Operations Facility National Historic Landmark, Twenty-five Foot Simulator National Historic Landmark)
Scientific Thought and Theory	No	Yes - Mt. Wilson Observatory	Yes - Jet Propulsion Laboratory sites (Space Flight Operations Facility National Historic Landmark, Twenty-five Foot Simulator National Historic Landmark)

- Cuestas and Hogbacks
- Mountain Systems
- Seashores, Lakeshores, and Islands
- Caves and Springs

These four subthemes are represented in SMMNRA, and of these, the subtheme of Mountain Systems is represented elsewhere in the study area. The story of the Transverse Ranges Province is represented in SMMNRA as well as the adjacent portions of the range including the Conejo Mountain area, Simi Hills, Santa Susana Mountains, and Verdugo Mountains-San Rafael Hills. The research conducted on the Conejo Volcanic complex was instrumental in constructing the current

model/theory of the Transverse Range rotation. Together, the Santa Monica Mountains and Conejo Volcanic complex best tell this unique geologic story while the Simi Hills, Santa Susana Mountains, and Verdugo Mountains-San Rafael Hills contribute.

In the *San Gabriel Study* (NPS 2013f), the San Gabriel Mountains were found to be a suitable addition to the national park system as a representation of the subtheme “Mountain Systems” (NPS 2013f). The study identified that the significance of the San Gabriel Mountains as a mountain system lies in the evidence of active mountain building and the diverse array of geological features, both of which are directly associated with the tectonic setting of

Of the national park units and comparably managed areas that represent the theme mountain systems, in no other area does the visitor have an opportunity to observe the forces of the San Andreas Fault System and how it relates to active mountain building.

the San Andreas Transform Fault System. Of the national park units and comparably managed areas that represent the theme mountain systems, in no other area does the visitor have an opportunity to observe the forces of the San Andreas Fault System and how it relates to active mountain building. In addition, the San Gabriel Mountains contain a diversity of geological features that represent some of the oldest rocks on the west coast of California. These units have helped geologists to understand how the Earth's crust has evolved in the region. The San Gabriel Mountains could expand greatly on the story of the San Andreas Fault and plate tectonics in the national park system.

Conclusion: Landforms of the Present – Mountain Systems

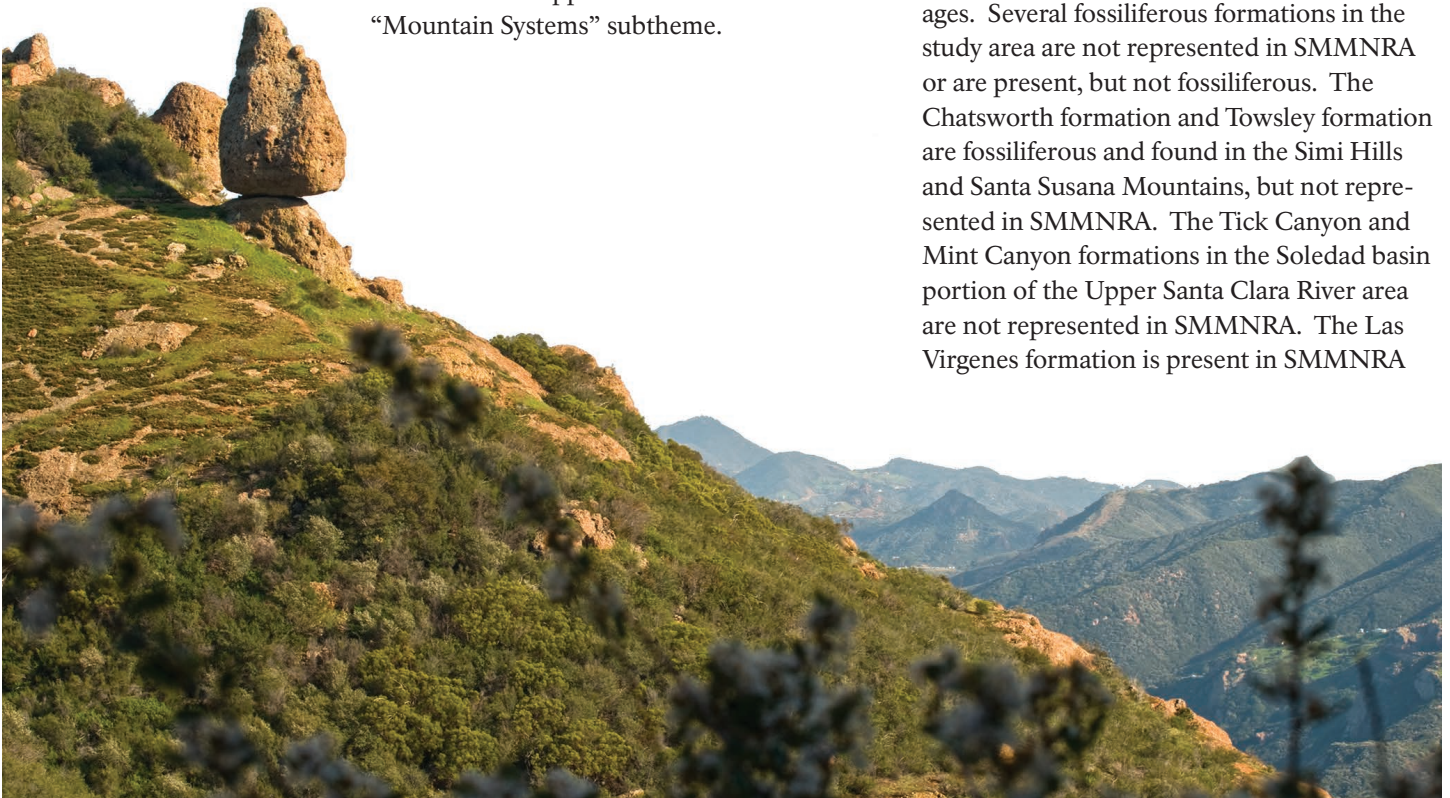
The subtheme “Mountain Systems” is represented by the Santa Monica Mountains within SMMNRA. Through the San Gabriel study process, the San Gabriel Mountains were found to be a suitable addition to the national park system, by expanding greatly on the story of the San Andreas Fault and plate tectonics in the national park system. The Conejo Volcanic complex, Simi Hills, Santa Susana Mountains, and Verdugo Mountains-San Rafael Hills expand and enhance resource protection and visitor use opportunities related to the “Mountain Systems” subtheme.

Geologic History: Paleontological Resources of the Triassic – Cretaceous Periods; Paleocene – Eocene Epochs; and Oligocene - Recent Epochs

The “Geologic History” theme describes the records of the geologic history of the earth as found in rocks. These records, which span a period of billions of years, may be read from the composition, structure, and relationships of rocks and the fossils they contain. The subthemes involve the location, identification, and evaluation of the more significant geologic records in terms of the value and usefulness in illustrating the history of the Earth and its life. The following subthemes related to “Geologic History” are represented in the study area:

- Triassic - Cretaceous Periods
- Paleocene - Eocene Epochs
- Oligocene - Recent Epochs

SMMNRA contains one of the most extensive and diverse assemblages of fossil material known in the national park system (Tweet 2012b). Although many of the rock formations in the Simi Hills and Santa Susana Mountains are the same as those in the Santa Monica Mountains, the fossil species represented there may be distinct due to the changing position of the coastline through the geologic ages. Several fossiliferous formations in the study area are not represented in SMMNRA or are present, but not fossiliferous. The Chatsworth formation and Towsley formation are fossiliferous and found in the Simi Hills and Santa Susana Mountains, but not represented in SMMNRA. The Tick Canyon and Mint Canyon formations in the Soledad basin portion of the Upper Santa Clara River area are not represented in SMMNRA. The Las Virgenes formation is present in SMMNRA



The story of the Transverse Ranges Province is represented in SMMNRA as well as the adjacent portions of the range including the Conejo Mountain area, Simi Hills, Santa Susana Mountains, and Verdugo Mountains-San Rafael Hills. Photo: NPS.

These areas outside of SMMNRA represent a continuum of land ecosystems that broadens the diversity and representation of Mediterranean-type ecosystem components found in SMMNRA.

but is not fossiliferous in the Santa Monica Mountains. The paleontological resources in the study area outside of SMMNRA contribute to this natural resource theme, by contributing resource types that are not represented in SMMNRA.

Conclusion: Geologic History

Fossil resources representing the “Geologic History” subthemes the Triassic - Cretaceous Periods, Paleocene - Eocene Epochs, and Oligocene - Recent Epochs are found in the study area, specifically in the Conejo Mountain – Las Posas Hills area, Santa Susana Mountains, Simi Hills and Upper Santa Clara River basin would enhance the protection of the area’s fossil resources by adding to the quantity and diversity of resources already present in SMMNRA.

Land Ecosystems: Grassland, Dry Coniferous Forest, Chaparral

The “Land Ecosystems” theme describes the characteristic groupings of some of the more common and conspicuous communities of land-dwelling plants and animals found in natural areas. Since the kind of community of plants and animals is intimately related to a kind of environment, the group of organisms plus their environment is referred to as an ecosystem. Since the vegetative components of ecosystems are generally more conspicuous than are the animal members and more stable with respect to location and population density, the names of land ecosystems stem from the types of vegetation which characterize them. The following subthemes related to “Land Ecosystems” are represented in the study area:

- Grassland
- Dry Coniferous Forest
- Chaparral

Types of land ecosystems represented in SMMNRA and the other portions of the study area include those categorized within the broad subthemes grassland, dry coniferous forest, and chaparral. These ecosystems are all part of the broader Mediterranean-type ecosystem which is represented by SMMNRA and considered one of the most biologically diverse and threatened areas in the continental United States.

Many of the vegetation types found in SMMNRA that represent these subthemes are also found throughout most of the remainder of the study area, including perennial grassland, chaparral, coastal sage scrub, and various types of woodlands. Beyond SMMNRA, the study area includes topographical, edaphic, and microclimatic conditions that are not found in the national recreation area. These conditions support vegetation communities not well represented in SMMNRA. Specific examples include bigcone Douglas-fir forest, canyon live oak, California walnut woodland and other vegetation types found in the Santa Susana Mountains. The uplifted sediments in the Simi Hills have resulted in conditions that support unique patterns of sensitive vegetation. The geology and resulting soil conditions in the Conejo Mountain area has resulted in the presence of many endemic dudleya plant species not found elsewhere. The location of the Verdugo Mountains-San Rafael Hills provides an ecological stepping stone between larger habitat areas such as the Santa Monica Mountains and the San Gabriel Mountains. These habitat areas throughout the study area also support many sensitive plant and animal species. These areas outside of SMMNRA represent a continuum of land ecosystems that broadens the diversity and representation of Mediterranean-type ecosystem components found in SMMNRA.

Grassland

In the NPS’ natural resource thematic framework, the “grassland” theme as represented in the South Pacific Border Region is described as native grassland dominated by purple needlegrass (*Nassella pulchra*). Much of interior California originally supported native grassland, and in the San Fernando Valley and Los Angeles basin areas, prairie ecosystems likely were present in the flat areas above the floodplains of the Los Angeles River and its tributaries. Areas of grassland were likely associated with oak savanna, which historically would have included native grassland species, interspersed with single oak trees. Over time, introduced grass and forb species have converted native grassland to annual grassland. Remnant native grassland is very rare and typically is only found in scattered patches.

Within SMMNRA, scattered patches of native grassland have been documented at La Jolla



Laskey Mesa in the Simi Hills contains one of the most outstanding examples of native grasslands in southern California. Photo: NPS.

Valley in Point Mugu State Park, and on NPS-owned land near Deer Creek, Yellow Hill and Cheeseboro Canyon.

Beyond SMMNRA in the study area, Laskey Mesa, located in the Upper Las Virgenes Open Space Preserve in the Simi Hills contains one of the most outstanding examples of native grasslands in southern California. Although the 200-acre plateau was used for grazing and much of the area is disturbed, the unique loamy soil hosts native bunchgrasses, as well as one of the only known locations containing the federally endangered, San Fernando Valley spineflower (*Chorizanthe parryi* var. *fernandina*). Before it was re-discovered at Laskey Mesa in 1999, the San Fernando Valley spineflower was presumed to be extinct. In 2000, the same species was discovered near the Santa Clara River at Newhall Ranch, which is also partially within the study area in the Santa Susana Mountains. The San Fernando Valley spineflower is endemic to Los Angeles and Ventura Counties and is largely limited to the Chatsworth formation (pers. comm. David Magney 2011). Because its habitat is typically found on mesas with shallow soils, this species has been greatly diminished over time due to the desirability of these types of sites for human development and activity.

Native grassland is also found in other portions of the study area, including the high-

est area in the Santa Susana Mountains, Oat Mountain, which provides outstanding examples of oak savanna and a mosaic of native grassland (pers. comm. David Magney 2011, pers. comm. Suzanne Goode 2011).

Dry Coniferous Forest

In the NPS' natural resource thematic framework, the "Dry Coniferous Forest" subtheme as represented in the South Pacific Border Region is described as including belts of coniferous forest and woodland, where the climate is warmer and drier than higher elevation forest. This theme is currently not represented in the vegetation types in SMMNRA. However, the *San Gabriel Study* (NPS 2013f) identified several examples of vegetation that represent this subtheme in the San Gabriel Mountains and foothills including montane hardwood, montane hardwood-conifer, Sierran mixed conifer, eastside pine, Jeffrey pine, ponderosa pine, pinyon-juniper woodland, juniper woodland, and closed-cone pine-cypress vegetation types. The Upper Santa Clara River area also includes pinyon-juniper woodland, juniper woodland, and Joshua tree vegetation. The *San Gabriel Study* (NPS 2013f) concluded that no other national park unit in the South Pacific Border natural region or any other comparably managed sites contains the types of Dry Coniferous Forest habitat or unique and unusual subalpine species found in the San Gabriel Mountains.

Beyond the San Gabriel study area this subtheme is represented in some areas, most notably in the Santa Susana Mountains, which are home to a number of rare vegetation types and species occurrences that help to illustrate the distribution and evolution of flora, including bigcone Douglas-fir, an ancient relic.

Chaparral

In the NPS' natural resource thematic framework, the "Chaparral" subtheme as represented in the South Pacific Border Region is described as vegetation dominated by plants that are broad-leaved, mainly evergreen species of shrubs or low trees, including dense scrub and woodland. "Chaparral" is further divided into two categories, "shrub-dominated" and "woodland." In the study area, the latter includes mixed chaparral, chamise-redshank chaparral, montane chaparral, and coastal sage scrub, with "woodland" vegetation including

coast live oak woodland, valley oak woodland, montane hardwood forest, and riparian forest.

SMMNRA contains an extensive mosaic of vegetation dominated by coastal sage scrub and chaparral communities. Coastal sage scrub is one of the most threatened plant communities in California with only 15% of its historic range remaining in southern California, making this habitat a high priority for preservation (CBI 2001, Davis et al. 1998). In SMMNRA, some unusual communities of chaparral are present including those dominated by red shank (*Adenostoma sparsifolium*) (NPS 2002). In addition, coast live oak woodland on north facing slopes and shaded canyons and valley oak woodland (savanna) found at lower elevations on alluvial soils contribute to the diversity of land ecosystems represented in SMMNRA.

The San Gabriel study area also includes extensive chaparral related communities. The area's inland location and greater elevational range has resulted in vegetation types and patterns that differ from those characteristic of SMMNRA. The study concluded that of the national park units and comparably managed areas that contain significant chaparral ecosystems in the South Pacific Border natural region, no other site has been so significant for historical and contemporary research on chaparral ecosystems and watersheds as the San Dimas Experimental Forest located within the San Gabriel Mountains (note that the San

Dimas Experimental Forest is located outside of the Rim of the Valley Corridor study area).

Beyond SMMNRA and the San Gabriel Mountains, the study area includes a diverse range of vegetation representing the subtheme "chaparral." As described in *Chapter 2* and earlier in this chapter, the Conejo Mountain area, Santa Susana Mountain, Simi Hills, Verdugo Mountains-San Rafael Hills, and portions of the Santa Monica Mountains outside of SMMNRA all include a variety of shrub-dominated and woodland type vegetation communities, including many that support habitat for federally listed plant and animal species.

Conclusion: Land Ecosystems

The study area contains a high level of biodiversity and outstanding examples of Mediterranean-type plant communities, rare and sensitive plant and animal species, and endemic species that occur nowhere else. SMMNRA represents the theme "Land Ecosystems" through these communities and their associated high level of biodiversity.

As identified in the *San Gabriel Study* (NPS 2013f), the combination and quantity of significant chaparral ecosystems and dry coniferous forest resulting, in part, from the extreme elevation changes in the San Gabriel Mountains represent a wider diversity of habitats than is found in SMMNRA or comparably managed



Valley oak woodland and savanna contribute to the diversity of land ecosystems represented in the SMMNRA. Photo: NPS.



Riparian vegetation is found in several subareas in the Rim of the Valley corridor, including the Arroyo Seco corridor (left). Riparian habitat support a variety of vegetation types and diverse wildlife, including rare, threatened and endangered species, such as the Arroyo toad (right). Photo (left): NPS. Photo (right): USFWS.

areas. Because of their high elevation, the San Gabriel Mountains contain rare examples of southern California subalpine vegetation not represented by any other national park unit in the South Pacific Border Region.

Most of the resources in the study area representing the theme “Land Ecosystems” expand on those resources already represented in SMMNRA. However, the resources related to “Dry Coniferous Forest” subtheme in the Santa Susana Mountains are not represented in SMMNRA so would be suitable as a new national park unit, particularly when considered in combination with the native grassland and chaparral resources also present in this area.

Aquatic Ecosystems: Streams

The theme “Aquatic Ecosystems” is based on geomorphic and other physical aspects of aquatic ecosystems. “Streams,” a subtheme related to Aquatic Ecosystems is represented in the study area.

This subtheme represents aquatic ecosystems with flowing waters. Two types of aquatic ecosystems, riparian habitat and alluvial fan sage scrub represent this subtheme as well as within the broader Mediterranean-type ecosystem. As with land ecosystems, there are habitat types classified as “aquatic ecosystems” that are present outside of the park that are represented in SMMNRA including high quality riparian habitat, as well as habitat types that are not represented in the park, including alluvial fan sage scrub.

Riparian Habitat

High quality riparian habitat similar to that found in SMMNRA is also found in other parts of the study area. River and stream systems in the canyons and valleys of the study area support a variety of vegetation types which in turn support a high diversity of wildlife including rare, threatened and endangered species. Some of the highest quality riparian habitat outside of SMMNRA occurs in the Upper Santa Clara River watershed and the foothill canyons of the San Gabriel Mountains.

The *San Gabriel Study* (NPS 2013f) concluded that the riparian habitat evaluated within the San Gabriel Watershed and Mountains study area contains a high diversity of wildlife including threatened and endangered species such as the Santa Ana sucker, arroyo toad, unarmored threespine stickleback and the southwestern willow-flycatcher. Additionally, the study determined that although several national park units in the South Pacific Border natural region contains excellent representations of river and riparian habitat, the San Gabriel Mountain river systems differ significantly in geologic character and processes and diversity of river habitats and that of the comparably managed areas, the San Gabriel Mountain river systems differ in geologic character and geologic processes, habitat type, fisheries and opportunities for access and interpretation.

Beyond SMMNRA and the San Gabriel Mountains, the study area includes many examples of riparian habitat, including types not represent in SMMNRA. White alder riparian woodland and forest and California bay forest are found in places such as the Verdugo Mountains-San Rafael Hills and Griffith Park. In the Santa Susana Mountains, the numerous canyons contain sensitive natural communities that are riparian, such as black cottonwood forest and Fremont cottonwood forest are found. The Upper Santa Clara River area includes more sensitive plant community types (at least seventeen) than any other portion of the study area (LADRP 2012a). In addition to the variety of riparian vegetation types along the Santa Clara River corridor, tributaries that connect the Santa Clara River to the Santa Susana Mountains and San Gabriel Mountains illustrate some of the unique natural communities in the study area.

Alluvial Fan Sage Scrub

Alluvial fan sage scrub is a distinct and rare plant community found on alluvial fans and floodplains along the southern base of the Transverse Ranges and portions of the Peninsular Ranges in southern California. As discussed in the previous chapter on significance, alluvial fan sage scrub habitat is extremely rare and not found in SMMNRA. However, in the study area, the San Gabriel Mountain foothills, including those along the Upper Santa Clara River, contain some of the best remaining examples of alluvial fan sage scrub in the Los Angeles basin.

As determined through the *San Gabriel Study* (NPS 2013f), excellent examples of remaining alluvial fan sage scrub are not found in any national parks in the Transverse and Peninsular Ranges nor in national park units in the South Pacific Border Region which represent the theme “Streams.” An analysis of ten of the most well-developed alluvial fan vegetation stands in Los Angeles, Riverside and San Bernardino Counties found that Big Tujunga Wash and the Upper Santa Clara River, both in the study area, and San Antonio Canyon are the three sites which exhibit the most species diversity, and the San Gabriel River is among one of two sites that exhibits the greatest structural diversity (Hanes et al. 1989).

Beyond Big Tujunga Wash and the Upper Santa Clara River, the study area may include additional smaller sites containing alluvial fan sage scrub, such as the mouth of the Arroyo Seco canyon and other small drainages in the San Gabriel Mountain foothills may also support this vegetation type. The significant alluvial fan sage scrub areas within the study area are primarily privately owned or managed by local water districts. However, several of these areas are adjacent to public lands and trails providing potential interpretive opportunities. The Tujunga Wash area contains publicly accessible areas including Oro Vista Park and Hansen Dam Recreation Area.

As described in the *San Gabriel Study* (NPS 2013f), the remaining large, intact stands of alluvial fan sage scrub in southern California are mostly located on privately owned lands or lands not expressly managed for resource values or public enjoyment. Therefore there are no comparably protected areas containing this unique habitat.

Conclusion: Aquatic Ecosystems

The study area’s diverse and outstanding examples of aquatic ecosystems, which are part of the broader Mediterranean-type ecosystem, include a variety of vegetation types, some of which are considered imperiled and provide habitat for sensitive and rare plants and animals. As with the theme “Land Ecosystems,” SMMNRA represents the theme “Aquatic Ecosystems” through these communities and their associated high level of biodiversity.

Many of the high quality riparian habitat types in the study area expand upon the theme of “aquatic ecosystems” already represented in SMMNRA. As determined in the *San Gabriel Study* (NPS 2013f), no national park unit in the South Pacific Border Region contains the alluvial fan vegetation unique to the Transverse and Peninsular Ranges of southern California. Of the comparably managed areas, the San Bernardino National Forest is the only publicly accessible protected area with significant alluvial fan sage scrub. The *San Gabriel Study* (NPS 2013f) concluded that the San Gabriel foothills, including those areas in the study area along the Upper Santa Clara River, as well as the Tujunga Wash area, are suitable for inclusion in the national park system.

Cultural Resource Themes

As described in the previous section, “Summary of National Significance of the Rim of the Valley Corridor Study Area”, the NPS cultural resource thematic framework is an outline of major themes and concepts that help to conceptualize American history. The NPS Thematic Framework (2000) for historical themes provides guidance on:

- evaluating the significance of resources for listing in the National Register of Historic Places, for designation as national historic landmarks, or for potential addition to the national park system
- assessing how well the themes are currently represented in existing units of the national park system and in other recognized areas; and,
- expanding and enhancing the interpretive programs at existing units of the national park system to provide a fuller understanding of our nation’s past (NPS 2000)

Peopling Places

The theme “Peopling Places” examines human population movement and change through prehistoric and historic times. The following topics or subthemes related to the theme “Peopling Places” are represented in the study area:

- Ethnic Homelands
- Migration from Outside and Within
- Encounters, Conflicts, and Colonization

Ethnic Homelands

Archeological sites recorded within the study area depict more than 10,000 years of human settlement. In SMMNRA, some sites have been listed or determined eligible for listing in the National Register of Historic Places. The national recreation area also includes the Saddle Rock Ranch Pictograph Site, considered to be nationally significant and NHL eligible. Beyond SMMNRA, the study area includes several sites that are listed in the National Register of Historic Places, or determined eligible for listing, including Burrow Flats Painted Caves and Old Susana Stage Road (Prehistoric Village Site, Rockshelter and Petroglyphs), both of which are listed in the National Register of Historic Places. Another

twelve prehistoric resources in the U.S. Forest Service managed areas of the San Gabriel Mountains have been determined eligible for listing in the national register. Additionally, hundreds of other archeological sites have been identified throughout the study area, and while most have not been evaluated yet, these sites provide great potential for archeological discovery.

Migration from Outside and Within

The study area contains nationally significant historic trails and migration routes already represented in SMMNRA and national trails. The Juan Bautista de Anza National Historic Trail (Anza NHT) traverses both SMMNRA and other portions of the study area. Several sites within and outside of SMMNRA interpret the trail and reflect the character of the landscape and some associated structures that convey the significance of the historic period, including Los Encinos State Park at the base of the northern slope of the Santa Monica Mountains. Two other nationally significant resources representing the theme of “Migration” occur in the study area outside of SMMNRA, including the Old Spanish National Historic Trail (Old Spanish NHT), and U.S. Highway 66 (Route 66). The Old Spanish NHT represents the first attempt by Europeans to reach Alta California from the inland southwest since the Yuma uprising closed the Anza Trail nearly fifty years earlier. The route terminates in the study area at El Pueblo de Los Angeles Historical Monument, a historic district listed in the National Register of Historic Places and located in the oldest section of Los Angeles. Route 66, which is supported through a NPS program, is significant as the nation’s first all-weather highway linking Chicago to Los Angeles and has become a symbol of the American people’s heritage of travel and their legacy of seeking a better life. The route traverses the study area from Pasadena, along the Arroyo Seco corridor to downtown Los Angeles. Both the Anza Trail and Old Spanish NHT are part of the NPS’ national trails system, with the Anza Trail also traversing SMMNRA.

Encounters, Conflicts and Colonization

Similar to the subtheme of “Migration from Outside and Within,” the Anza NHT and Old Spanish NHT represented the theme, “Encounters, Conflicts and Colonization.” The

Anza NHT is represented in both SMMNRA and other portions of the study area, while the Old Spanish NHT occurs in the study area outside of SMMNRA. As national trails, these resources and subthemes are represented in the national park system. Saddle Rock Ranch rock art site (CA-LAN-717), determined eligible for designation as a national historic landmark by the Secretary of the Interior in 1990, is a rare example of a Chumash pictograph displaying mounted horsemen, considered to be representative of Chumash encounters with the 1769 Portola Expedition.

Given the hundreds of archeological sites throughout the study area that have not yet been evaluated for significance, there is potential for these sites to enhance the significance of archeological resources at SMMNRA. As an example, following a recent fire in SMMNRA, a glass bead was discovered that could only have become part of the Native American trade system after European contact. It was not previously known that this area of SMMNRA was occupied by Native Americans during the time of contact, and illustrates how future significant discoveries in the study area could enhance the area's significance in representing this subtheme of "Encounters, Conflicts and Colonization."

Conclusion: Peopling Places

Resources representing the theme "Peopling Places" are found in the study area as represented by two federally designated national historic trails (Anza NHT and Old Spanish NHT) and the Route 66 program. While there is high potential for future discovery of resources related to this theme in the study area beyond SMMNRA, there are no designated national historic landmarks that represent "Peopling Places," so there are no existing resources representing this theme that would be suitable as a new national park unit.

Expressing Cultural Values

The theme "Expressing Cultural Values" covers expressions of culture – people's beliefs about themselves and the world they inhabit. This theme also encompasses the ways that people communicate their moral and aesthetic values (NPS 2000). The following topics or subthemes related to "Expressing Cultural Values" are represented in the study area:

- Architecture: Gamble House, Case Study House Program 1945-1966
- Popular and Traditional Culture: Rose Bowl
- Visual and Performing Arts (Filmmaking): Paramount Ranch

Architecture

The subtheme "Architecture" is focused on the development and expression of building design within the United States. It highlights the careers and works of leading architects, structures of outstanding value in design, the evolution of significant architectural styles, and structures richly representative of particular types or geographical regions. The study area contains nationally significant examples of Craftsman Architecture (1890-1915), as represented by the Gamble House National Historic Landmark and Modern Architecture (1945-1966), as represented by the Case Study House Program within and around the study area.

The Gamble House National Historic Landmark in Pasadena has been identified as embodying the highest level of the California Bungalow style associated with the Arts and Crafts movement of the early 20th century. The house has been open to the public for tours since 1966 and also offers educational programs as stipulated by the Gamble heirs. The institutional mission is to preserve the house and educate the public about the vital role of historic architecture in understanding the richness of the past and the potential for the future. The property underwent an extensive exterior conservation effort in the 2000s.

Sites representing the Case Study House Program, particularly the Eames House which has been designated an NHL, have been determined to be significant for their association with a multi-year program of experimental housing which had a profound and enduring impact on Modernism. Of the 24 case study houses that were built, eight are within the study area, with another eleven within four miles of the study area (seven are within one-half mile of the study boundary). Nine of the 24 houses constructed as part of the Case Study Program are listed in the NRHP with the Eames House being the only NHL (Moruzzi 2013).



Both the Gamble House National Historic Landmark (left) and Case Study house #22 (Stahl House, right), listed in the National Register of Historic Places represent the theme of “Architecture” within the study area. While the Gamble House represents Craftsman architecture, both the Stahl House and the Eames House National Historic Landmark (not shown) are both representative of the Case Study House Program and examples of modern architecture. Photos: NPS.

As described in the previous section, National Significance, the Eames House National Historic Landmark (Case Study House #8) is considered one of the most significant experiments in American domestic architecture. The property is privately owned by the non-profit Charles and Ray Eames House Preservation Foundation, Inc. which was established in 2004 to preserve and protect the Eames House and to provide educational opportunities. The foundation provides opportunities for tours as well as educational exhibits at the property (Charles and Ray Eames House Preservation Foundation, 2014).

The Stahl House, designed by Pierre Koenig and built in 1960, is considered one of, if not the most iconic house constructed in the Case Study House program, and “among the most radical and reductive” (Seward 2013). Limited public viewing opportunities of the house with docents are made available by the owners. Besides the Stahl House, the four other Case Study houses in the study area listed in the national register are privately owned and not normally open for public visitation.

These properties associated with the Case Study House program illustrate the subtheme of “Modern Architecture”, possess historical integrity, and offer some opportunities for public visitation and enjoyment. However,

the Eames House stands apart as an NHL that possesses an extraordinarily high level of material integrity while providing for public access and enjoyment.

National Park Service Units

A national historic landmark theme study was prepared in 1986 that focused on architecture in national parks. The study identified a variety of buildings and districts throughout the history of national parks that meets the criteria for designation as a national historic landmark (NPS 1986a). Although several structures were identified that were constructed during the period identified for the “Craftsman Architecture” subtheme, none of them is a residential structure that reflects the same architectural style as the Gamble House.

Similarly, the study does not identify any national park resources comparable to the Eames House or other Case Study Program houses that reflect the theme of Modern architecture (NPS 1986a). In 1956, the National Park Service launched Mission 66, a ten-year park development and improvement program promoting modern architecture in the national parks, but none of the structures from this program reflects the residential architecture reflected in the case study houses, such as the Eames House.

National Historic Landmarks (NHLs)

Craftsman Architecture (1890-1915)

The Fonthill, Mercer Museum, and Moravian Pottery and Tile Works property in Doylestown, Pennsylvania is the only other NHL associated with the Craftsman architecture subtheme (designated 1985). These three sites are associated with Henry Chapman Mercer (1856-1930), designer of Arts and Crafts ceramics, and a visionary architect who was one of the first designers to work with reinforced concrete as a building material. Although associated with the subtheme Craftsman architecture, the Fonthill home is an eclectic mix of Medieval, Gothic and Byzantine architectural styles and is significant as an early example of poured reinforced concrete. The home also served as a showplace for Mercer's Moravian tiles which are associated with the American Arts and Crafts Movement. The site is privately owned and open to the public.

Although the Gamble House and the Fonthill, Mercer Museum and Moravian Pottery and Tile Works properties are both associated with the Craftsman architecture subtheme, the resources and associated stories of these properties are distinctly different due to their different architectural styles and associated stories related to the Arts and Crafts Movement.

Modern Architecture

In 2003, the publication *Modern Architecture in the United States of America: Skyscrapers, Houses, Churches, College Buildings and Campuses, and Museums, 1923-1966*, National Historic Landmark Theme Study identified a number of residences that reflect the "Modern Architecture" subtheme. Examples include a number of houses designed by Frank Lloyd Wright, primarily located in Illinois and Wisconsin where Wright lived in and practiced. Of 15 designated national historic landmarks representing this theme, only one is located in California, Hanna House ("Honeycomb House") in Palo Alto (Frank Lloyd Wright, 1937). Another nineteen modern houses have been identified as potentially meeting the criteria for national historic landmark designation, including nine in California:

- Roos House, San Francisco, California (Bernard R. Maybeck, 1909)

- Hollyhock (Barnsdall) House, Los Angeles, California (Frank Lloyd Wright, 1917)
- Textile Block Houses, Los Angeles, California (Frank Lloyd Wright, 1923)
- Lovell Beach House, Newport Beach, California (Rudolph Schindler, 1926)
- Lovell "Health House," Los Angeles, California (Richard Neutra, 1929)
- Kaufmann Desert House, Palm Springs, California (Richard Neutra, 1946)
- Tremaine House, Montecito, California (Richard Neutra, 1948)
- Moore House, Ojai, California (Richard Neutra, 1952)
- Sea Ranch, California (MLTW: Moore, Lyndon, Turnbull & Whitaker; 1965)

None of these houses reflects the story of the Case Study Houses Program that is represented by the Eames House or other Case Study Program houses listed in the National Register of Historic Places.

Comparably Managed Areas

Craftsman Architecture (1890-1915)

There is no other comparably managed area that represent Craftsman architecture illustrating principal achievements of the Greene and Greene Architects. There are three houses are listed in the National Register of Historic Places including the Robert R. Blacker House (Pasadena, CA), William R. Thorsen House (Berkeley, CA), and Charles M. Pratt House (Ojai, CA) related to Greene and Greene Architects and Craftsman architecture. The national register identifies the Blacker House and Pratt House as significant at the national level, but both are private residences and have limited public access and public enjoyment opportunities. The Thorsen House is identified as significant at the state level, but it is also privately owned, used as a residence, and has limited opportunities for public enjoyment.

Modern Architecture

Aside from the Eames House, there is no example of the Case Study House Program that is expressly managed for conservation and public enjoyment. Of the Case Study Houses listed in the National Register of Historic Places, all are privately owned and the major-

Both the Eames and Gamble houses are privately owned by organizations with missions dedicated to preserving these resources and making them available to the public.

ity is not available for public visitation. Only Case Study House #22 (Stahl House), located within the study area, is open to the public for visitation.

Conclusion: Architecture

The Gamble House and Eames House national historic landmarks represent stories and subthemes distinct from those already represented in the national park system. Although other sites listed in the National Register of Historic Places reflect similar subthemes and stories, none of these related sites embodies the same level of significance and integrity, while providing for public access and enjoyment. Both the Eames and Gamble houses are privately owned by organizations with missions dedicated to preserving these resources and making them available to the public. In this context, both the Gamble House and the Eames House stand alone as representatives of their respective subthemes and associated stories. Though not represented in the national park system, these cultural resources are comparably protected by other organizations.

Popular and Traditional Culture – Recreation and Culture, Sports Facilities

The Rose Bowl National Historic Landmark has outstanding significance in the field of recreation as the site of the oldest post-season college football “bowl” game, held annually at the start of very new year since 1916. It has been held at the Rose Bowl since its completion in 1922 (except for one year during World War II). The stadium currently functions as the home of the University of California, Los Angeles football team.

The Rose Bowl is owned by the City of Pasadena and managed by the Rose Bowl Operating Company, a non-profit organization whose role is to return economic and civic value to the City of Pasadena through management of the Rose Bowl stadium and the adjacent golf course complex. In addition to being open to the public for civic, entertainment and sporting events, the Rose Bowl recently began offering guided tours that highlight the stadium’s history and significance.

National Park Service Units

No national park units represent the subtheme of “Popular and Traditional Culture – Recreation and Culture, Sports Facilities.”

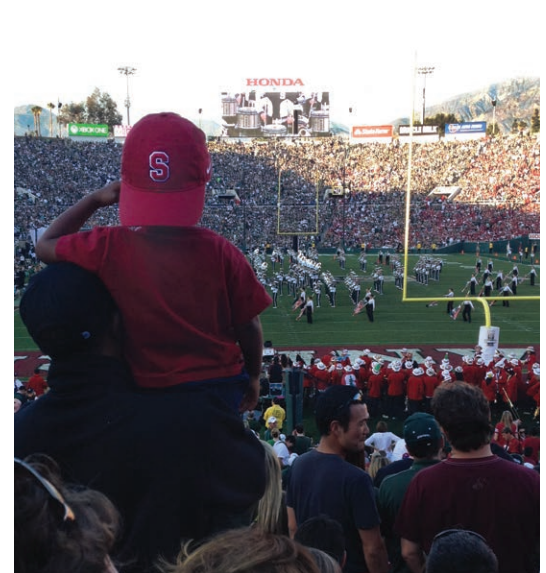
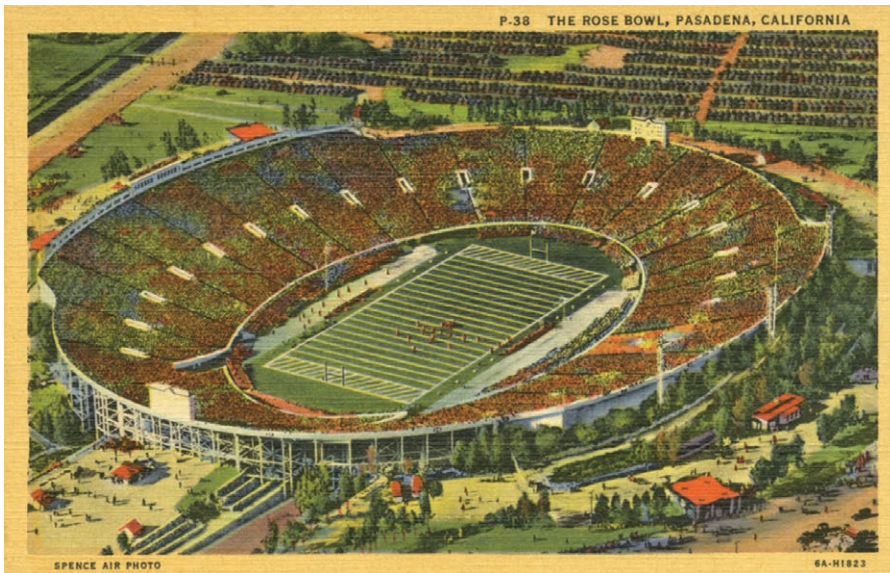
National Historic Landmarks (NHLs)

In 1986, the National Park Service prepared the *Recreation in the United States: National Historic Landmark Theme Study* which identified eight stadiums in the U.S. that had the potential to be designated as national historic landmarks. In addition to the Los Angeles Memorial Coliseum, which was already designated a national historic landmark at the time of this study, three additional sites were later designated national historic landmarks, including the Rose Bowl Stadium. The other two sites include Harvard Stadium and the Yale Bowl.

The Los Angeles Memorial Coliseum, constructed in 1921-23, possesses national and international historic significance as the focal site of the Xth Olympiad of the modern era, the Los Angeles Summer Games of 1932. It is also highly important as the scene of numerous other sporting and civic events, including the 1984 Olympic Games and as a key example of the architectural work of John and Donald Parkinson, two of the most prominent Los Angeles architects of the early 20th century (NPS 1984b). The Coliseum is publicly owned, but managed and operated via a lease agreement with the University of Southern California (USC) which uses the stadium as the home field for its football team. The facility continues to be actively used and open to the public for a diverse range of sports, entertainment, and civic events.

Erected in 1903, Harvard Stadium in Boston, Massachusetts was the first college stadium in the United States and remains the earliest still extant. Its design and its multipurpose use became a prototype for the design of college stadiums that were built by other universities in the United States in the 20th century (NPS 1987a). The stadium is privately owned by Harvard University and continues to be open to the public and used for athletic events.

The Yale Bowl in New Haven, Connecticut is the second oldest, active college stadium in the country and was the largest stadium when it was constructed (1914). The Yale Bowl is significant for its “bowl” shape which provided fine views for the spectators from all seats and was emulated by many other stadiums, as well as for Yale’s early influence in college football



The Rose Bowl stadium has continually hosted the post-season football game associated with the Tournament of Roses (ca. 1940s, left; 1914, right). Recently, tours of the site have been available to the public. Photos: Anne Dove (left), NPS (right).

In addition to being open to the public for civic, entertainment and sporting events, the Rose Bowl recently began offering guided tours that highlight the stadium's history and significance.

(NPS 1987b). Yale University owns the facility which continues to be used for public sporting events.

Comparably Managed Areas

In the *Recreation in the United States: National Historic Landmark Theme Study* (NPS 1986b), five additional sites were identified as having national significance. Of these, Grant Park Stadium (Soldier Field) in Chicago, Illinois, was designated a national historic landmark in 1987, but delisted in 2006 based on renovations that affected the stadium's historic integrity. Another stadium, Ohio Stadium at the campus of Ohio State University in Columbus, Ohio, was listed in the National Register of Historic Places in 1974. The remaining three stadiums identified in the theme study as eligible for NHL designation are the University of Illinois Memorial Stadium (Urbana, Illinois), University of Notre Dame Main and South Quadrangles Historic District and Stadium (South Bend, Indiana), and University of Michigan Stadium (Ann Arbor, Michigan) and are not listed in the national register. All of these stadiums have undergone extensive renovations since the 1986 theme study.

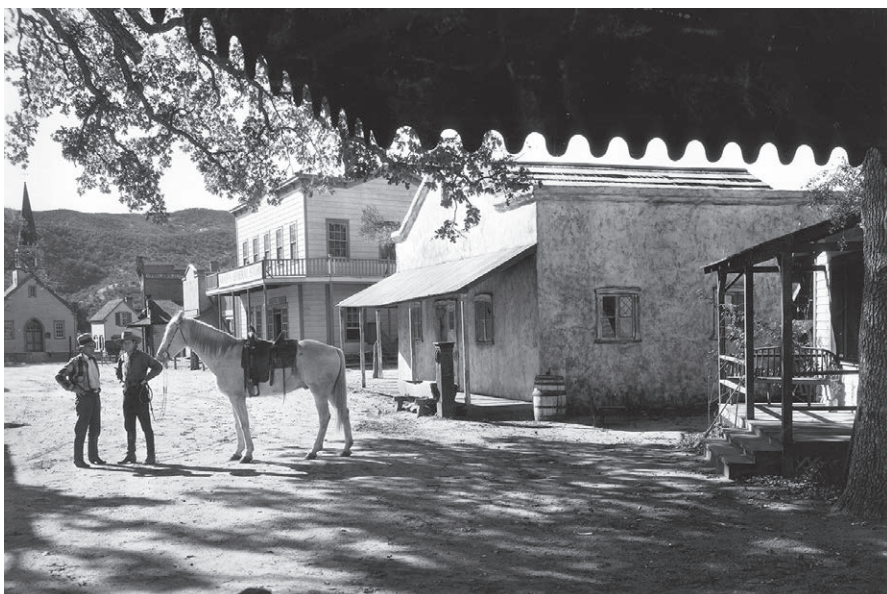
Conclusion: Popular and Traditional Culture – Recreation and Culture, Sports Facilities

In addition to the Rose Bowl, there are three other similar properties that reflect the same subtheme of "Recreation and Culture, Sports Facilities": Harvard Stadium, Los Angeles Memorial Coliseum, and the Yale Bowl. All three

of these sites, like the Rose Bowl, continue to be used for the purposes for which they were originally constructed. Harvard Stadium and the Yale Bowl are both privately owned facilities used primarily for university sporting events.

The Rose Bowl and Los Angeles Memorial Coliseum are also used for university sporting events, but both are publicly owned and also serve as sites for civic, cultural, and other diverse events for the public. Of the four stadiums, only the Rose Bowl offers regular opportunities for public access and enjoyment beyond participation at the stadiums' events as spectators.

Both the Rose Bowl and Los Angeles Memorial Coliseum represent additional stories related to the Olympic Games (the 1932 and 1984 games). Beyond these stories, the Rose Bowl's significance as the long-term site of the oldest and most renowned post-season college football "bowl" game, which is also tied to the civic work of the Pasadena Tournament of Roses Association, is not comparably reflected in the other three sites. Although the Rose Bowl is currently managed consistent with the historic significance of the site, preservation, interpretation and education are not the primary purposes of the Rose Bowl Operating Company and thus the Rose Bowl is not considered comparably managed. The themes represented by the Rose Bowl are not represented in the national park system.



Established in 1927 as a movie ranch, Paramount Ranch in SMMNRA has been used for a variety of filming activities. The top shows the original western town with actor Richard Arlen, 1943. The center photo shows production of the television show, "Dr. Quinn, Medicine Woman" (ca. 1990s), and the bottom image shows production of the television show, "Carnivale" (2003). Photos: Mike Malone (top), NPS (center and bottom).

Visual and Performing Arts (Filmmaking)

Within SMMNRA, Paramount Ranch represents the subtheme "Visual and Performing Arts" as related to filmmaking. As described in Chapter 2, the Los Angeles metropolitan region has a long, rich film and movie-making history dating back to 1909 with the establishment of the William Selig and Francis Boggs (Polyscope Company), the first permanent film studio. The eastern Santa Monica Mountains were used early on for location filming. Popular sites included Bronson Canyon, Runyon Canyon, the Griffith Observatory, the Hollywood Bowl, and the Hollywood Hills. The industry also moved to Malibu in 1926, establishing the Malibu Beach Motion Picture Colony (Kaplan 1987; Bible, Wanamaker, and Medved 2010). The Santa Monica Mountains and San Fernando Valley's ranches and inexpensive land also attracted major studios. Paramount Ranch (eligible for listing in the National Register of Historic Places), established in 1927 in what is now SMMNRA, is one of the best remaining examples of a movie ranch from this era. Other locations within the study area also attracted film production companies. Porter Ranch, a 500-acre site in the Santa Susana Mountains, was heavily used for filming, as was Iverson Ranch in Chatsworth, Corriganville in the Santa Susana Pass area, and Ahmanson Ranch in Upper Las Virgenes Canyon (Bible, Wanamaker, and Medved 2010).

SMMNRA is the only national park unit that includes resources reflecting the theme "Visual and Performing Arts" as it relates to filmmaking and there are no national historic landmarks that reflect this story. There are national historic landmarks relating to live theater, movie palaces, music recording, radio and popular culture (Graceland, Sun Record Company-Memphis Recording Service, Ryman Auditorium), but none that specifically relates to filmmaking. Three sites, Hollywood Boulevard Commercial & Entertainment District, Joel McCrea Ranch, and Will Rogers House, are national register listed properties related to this theme, while two others, Hollywood United Methodist Church and William S. Hart County Park have been determined eligible for listing. There is potential for other significant sites reflecting this filmmaking theme to be identified and evaluated for national historic landmark eligibility, and the potential exists for future preservation

SMMNRA is the only national park unit that includes resources reflecting the theme Visual and Performing Arts as it relates to filmmaking and there are no national historic landmarks that reflect this story.

and public enjoyment of significant resources related to this theme, but additional research would be needed. This theme has the potential for focused research, such as via a national historic landmark theme study. Should these resources be found to be nationally significant, they could contribute to expanding the significance of SMMNRA as it relates to the theme “Expressing Cultural Values, Visual and Performing Arts.”

Conclusion: Visual and Performing Arts (Filmmaking)

The subtheme “Visual and Performing Arts”, as it relates to filmmaking, is represented in SMMNRA. There is high likelihood that other significant resources related to this topic occur within the study area, but this determination would require additional study about their suitability for inclusion in the national register. However, at this time, there are no known national historic landmark-eligible resources reflecting this subtheme in the study area beyond SMMNRA that would be suitable as new national park areas.

Expanding Science and Technology

This theme focuses on science, which is modern civilization’s way of organizing and conceptualizing knowledge about the world and the universe beyond. Technology is the application of human ingenuity to modification of the environment in both modern and traditional cultures. The following topics or subthemes related to “Expanding Science and Technology” are represented by nationally significant resources in the study area:

- Experimentation and Invention: Jet Propulsion Laboratory (JPL), Mount Wilson Observatory
- Technological Applications: JPL, Mount Wilson Observatory
- Scientific Thought and Theory: JPL, Mount Wilson Observatory

JPL resources relate to the *Man in Space National Historic Landmark Theme Study (Man in Space Theme Study)* (NPS 1984a) prepared by the NPS, which evaluated resources related to the goals of landing a man on the moon and exploring the earth, planets and solar system. The study recommended some of those resources for designation as national historic landmarks. The *Man in Space Theme Study* fo-

cused on resources associated with NASA and United States Air Force installations, but noted that there were many contractor facilities that were important in the space program that were not examined as part of the theme study.

The Mount Wilson Observatory was evaluated as part of the *San Gabriel Study* (NPS 2013f) which found that there are no units in the national park system or areas managed by other entities that have the combination of resources as the San Gabriel Mountains has in its representation of the theme “Expanding Science and Technology”, and that there are few national historic landmarks that compare to the Mount Wilson Observatory. Because the Mount Wilson Observatory has already been determined a suitable addition to the national park system, the following analysis of nationally significant resources representing the theme “Expanding Science and Technology” is focused on resources located at JPL.

Jet Propulsion Laboratory

Jet Propulsion Laboratory (JPL) is a federally funded research and development facility managed by the California Institute of Technology (Caltech) for the National Aeronautics and Space Administration (NASA). As described in *Chapter 2: Resource Description*, JPL has served a significant role in the expansion of science and technology in fields ranging from space exploration to communications. Experimentation and invention at JPL has played a significant role in scientific innovation in the areas of astrophysics, rocket science, and deep space exploration. As described in the previous section, “National Significance”, the *Man in Space Theme Study* identified two facilities at JPL that met eligibility for NHL designation, the Space Flight Operations Facility and the Twenty-five Foot Simulator. Given the security requirements for JPL’s current operations, the facility has limited public access with public visitation limited to open house events, (typically once a year) and tours for groups and individuals on an advance reservation basis. All tours commonly include a multimedia presentation that provides an overview of JPL’s activities and accomplishments, and guests may also visit the von Karman Visitor Center, the Space Flight Operations Facility, and the Spacecraft Assembly Facility. The 25-foot Space Simulator is not part of their regular tours.



The Twenty-Five Foot Space Simulator National Historic Landmark at JPL continues to be used for testing vehicles for U.S. space missions. Photo: NPS.

National Park Service Units

There are no units in the national park system that relate to the topics represented by the significant resources at JPL. Under a previous thematic framework for cultural resources, national park units were listed under the subtopic of “Physical Sciences.” There were no park units identified for “Astronomy.” Two sites were identified for representation of “Physics,” Benjamin Franklin National Memorial (Affiliated Area) and Edison National Historic Site. Edison National Historic Site was also identified for the theme, “Chemistry.” The *Scientific Discoveries and Inventions National Survey of Historic Sites and Buildings Theme Study* was prepared by the NPS in 1964-65. This theme study identifies five national park units that reflect this theme, including Independence National Historical Park (Pennsylvania), George Washington Carver National Monument (Missouri), Edison National Historic Site (New Jersey), Harpers Ferry National Historical Park (West Virginia), and

Wright Brothers National Memorial (North Carolina). Although these sites represent the broader theme of science, none reflects the stories of space exploration and related scientific and technological advances.

National Historic Landmarks (NHLs)

Of the resources identified in the *Man In Space Theme Study*, 24 were recommended for national historic landmark designation because they represent the best and most important surviving examples of the technologies associated with the subject theme. The national historic landmark database reflects that there are 23 designated national historic landmarks that reflect the theme of space exploration, in addition to the two JPL sites mentioned above.

Many of these national historic landmarks are located within NASA or U.S. Department of Defense restricted facilities that do not allow public access. Many of the facilities that do have some public access do not permit direct access to the national historic landmark designated facilities. However, NASA has fourteen visitor centers or facilities that partner to interpret NASA-related themes across the U.S. many of which are co-located with the NASA facilities where these national historic landmarks are located. Most of the visitor centers offer tours of the NASA facilities while providing visitor services, interpretation, and attractions at the visitor centers. Examples include the Lyndon B. Johnson Space Center in Houston, Texas and the Cape Canaveral Air Force Station national historic landmark in Cocoa, Florida. In California, visitors can learn about the Unitary Plan Wind Tunnel national historic landmark (Moffett Field, Mountain View, California) at the Ames Research Center’s Visitor Center.

Comparably Managed Areas

Sites associated with the topic of “Man in Space” that are nationally significant and managed for protection and public enjoyment have been designated as national historic landmarks, with the exception of four resources. The Rocket Engine Test Facility (Lewis Research Center) has been demolished, and three spacecraft, including the Mercury Spacecraft Friendship 7 Spacecraft (aka Mercury-Atlas 6), Gemini 4 Spacecraft, and Apollo 11 Command Module were not



The Space Flight Operations Center NHL at the Jet Propulsion Laboratory is still used today. An observation room provides an opportunity for visitors to view the facility without disrupting operations. Photo: Courtesy of NASA.

Given the security requirements for JPL's current operations, the facility has limited public access with public visitation limited to open house events, (typically once a year) and tours for groups and individuals on an advance reservation basis.

designated, but are preserved and exhibited at the Smithsonian's National Air and Spacecraft Museum. These three resources are managed for preservation and public enjoyment, but they are substantially different from resources at JPL which provides unique opportunities to learn about advancements in deep space exploration.

Conclusion: Expanding Science and Technology

The resources at JPL represent the theme, Expanding Science and Technology, and the topic, of space exploration. Although not represented in the national park system, a number of national historic landmarks that reflect similar themes are managed for resource protection while providing for some public enjoyment.

The national historic landmarks at JPL represent two topics identified in the *Man in Space Theme Study*, "Unmanned Spacecraft Test Facilities," and "Mission Control Centers." At JPL, the Twenty-five Foot Space Simulator NHL represents the latter topic. The Spacecraft Magnetic Test Facility NHL is the only other comparable nationally significant resource that represents this topic. Although they both are unmanned spacecraft test facilities, their history, function and design are different. At JPL, the Space Flight Operations Facility represents the topic "Mission

Control Centers." The only other nationally significant resource representing this topic is the Apollo Mission Control Center National Historic Landmark located in Houston, Texas. Given the primary mission of JPL is research and development, the Twenty-five Foot Space Simulator and Space Flight Operations Facility are not comparably managed for preservation and public enjoyment. As the themes represented by these sites are not represented by any national park units, these national historic landmarks are considered suitable additions to the national park system.

Developing the American Economy

The theme developing the American Economy reflects the ways Americans have worked and materially sustained themselves by the processes of extraction, agriculture, production, distribution, and consumption of goods and services. Two topics under this theme that is represented by a nationally significant resource within the study area include:

- Transportation and Communication: Juan Bautista de Anza National Historic Trail, Old Spanish National Historic Trail, Route 66, Butterfield Overland Trail
- Extraction and Production: Well No. 4, Pico Canyon Oil Field (Pico Well No. 4)



The newspaper caption to this 1931 photo of Well No. 4, Pico Canyon reads, “At the head of Pico Canyon, in the old Newhall oil field, stands this diminutive derrick known as the California Star Oil Works Company No. 4 well. It has faithfully produced for 54 years and is the oldest active well in California.” Photo: Herald-Examiner Collection/Los Angeles Public Library.

Transportation and Communication

Similar to the subthemes under “Peopling Places,” the Juan Bautista de Anza and Old Spanish national historic trails represent the theme, “Developing the American Economy” in the national park system. The Anza Trail is represented in both SMMNRA and other portions of the study area, while the Old Spanish National Historic Trail occurs in the study area outside of SMMNRA. Route 66 has also been determined to be nationally significant and as previously mentioned, the NPS designated Route 66 Corridor Program seeks to protect the nationally significant resources associated with the corridor.

The Butterfield Overland Trail, a mail route that began from two eastern termini on the Mississippi River at St. Louis, Missouri, and Memphis, Tennessee, and followed a southerly course before heading north through California to its western terminus in San Francisco, was recently determined nationally significant for its role in tying California, and various western territories, more closely to the long-established portions of the U.S. east of the Mississippi River. Established in 1857, the stagecoach route lasted three years before more efficient forms of communication and more direct routes farther north replaced it.

Extraction and Production

Pico Well No. 4 was the first major producer of southern California oil. Oil had a significant effect on the regional economy and shifted the population and political power within California from north to south. In the 1870s through early 1880s, Pico Canyon was the principal oil region of California. There the pioneers of the industry received both training and substance, which enabled them to make California the second oil producing state after Pennsylvania in the nation in the first two decades of the 20th Century (NPS 1966).

In 1966, the NPS prepared the *Commerce and Industry Theme Study* to identify and assess historic sites associated with this theme. Within that study, the theme “Business-Subtheme A: Extractive and Mining Industries” identified a number of significant sites representing these stories, including Pico Well No. 4, which was listed under the heading of “Petroleum and Related Resources.” That same year, Pico Well No. 4 was designated a national historic landmark (NPS 1966).

National Park Service Units

In the *Commerce and Industry Theme Study* (NPS 1966), one NPS unit was identified as representing the subtheme of “Extractive and Mining Industries”, under the heading of “Iron and Ferro Alloys.” Saugus Iron Works National Historic Site in Saugus, Massachusetts is a reconstruction of the first successful, integrated iron works in the New World. In 1968, the site was added to the national park system because it is considered the birthplace of the iron and steel industry in Colonial America, initiating and sustaining an advanced iron making technology in the New World.

No national park unit was identified in the 1966 study as representing the topic of “Petroleum and Related Resources”.

National Historic Landmarks (NHLs)

The 1966 study identified nine nationally significant sites that relate to the topic of “Petroleum and Related Resources”, including Pico Well No. 4. In addition to Pico Well No. 4, six of these sites are designated national historic landmarks, including:

- Drake Oil Well, PA
- Norman No. 1 Oil Well, KS

Including Pico Well No. 4, there are four NHLs that represent the discovery and successful extraction of oil. All four of these NHLs are managed for resource protection and public enjoyment.



Mentryville, the 1880s oil boomtown associated with the site of Well No. 4, Pico Canyon, is currently managed by the MRCA as part of the Santa Clarita Woodlands Park. NPS photo.

- Lucas Gusher, TX
- John D Rockefeller Estate (Kykuit), NY
- E.W. Marland Mansion, OK
- Harry F Sinclair House, NY

Including Pico Well No. 4, there are four NHLs that represent the discovery and successful extraction of oil. Each of these four sites represents a regional component of the broader national story of commercial oil development, and its broad impacts on U.S. history. Drake Oil Well in Pennsylvania conveys the story of the first discovery and commercial extraction of oil in the U.S., while Norman No. 1 Oil Well represents the opening of the oil industry in the mid-continent region and its effects on the national economy and oil industry. The Lucas Gusher, Spindletop Oil Field adds a chapter to this narrative by representing the discovery and commercial extraction of oil in the Texas Gulf coastal plain and Louisiana, and the modern era of the oil industry. Like these three sites, Pico Well No. 4 contributes the west coast chapter of the story of oil discovery and successful commercial development. All four of these NHLs are managed for resource protection and public enjoyment.

The three other national historic landmark sites that represent the petroleum story of the nation's "Commerce and Industry" cultural resource theme illustrate key figures in the development of the oil industry. The residences of John D. Rockefeller, E.W. Marland, and Harry F. Sinclair contribute to this broader theme, but by focusing on industry leaders, rather than the sites and associated resources directly relating to oil extraction and development. The three sites offer varying degrees of public access and interpretation.

Comparably Managed Areas

The *Commerce and Industry Theme Study* (NPS 1966) did not identify sites that represent the topic of "Petroleum and Related Resources" that are comparably managed for resource protection and public enjoyment. There are museums that interpret this topic, including the California Oil Museum in Santa Paula, California just north of the study area, but the site itself is not a nationally significant resource comparable to the national historic landmarks described above.

Conclusion: Developing the American Economy

The subtheme "Transportation and Communication" is represented in the study area by three resources that are part of the national park system as two national historic trails (Juan Bautista de Anza and Old Spanish national historic trails) and the federally designated Route 66 Corridor Program. Other study area sites listed in the National Register of Historic Places, determined eligible for listing in the national register, or designated California State Historic Landmarks represent this subtheme but are not suitable as new national park additions at this time because they have not yet been found to meet national historic landmark criteria.

No national park unit represents the petroleum story of the nation's "Commerce and Industry" cultural resource theme. Of the six sites related to the petroleum story (not including Pico Well No. 4), three focus on the discovery and extraction of oil in other regions of the country, and three illustrate the stories of key figures in the development of the oil industry. Pico Well No. 4 is the only site representing the discovery and commercial development of oil on the west coast.

The study area includes several national park system related sites and programs...many of the resources in the remainder of the study area could expand and enhance the significance of these NPS-related designated sites and resources if protected in the study area. In some cases, the remainder of the study area contains resources not represented in the national park system.

Pico Well No. 4 is currently located in Pico Canyon, a park managed by the Mountains Recreation and Conservation Authority (MRCA), a joint-powers authority, with the City of Santa Clarita as a joint-powers partner. The natural landscape surrounding Pico Well No. 4 provides site context that is similar to the historic landscape during the period of significance, providing a rare opportunity for visitors to experience these resources in an environment similar to that of the 1880s. Pico Well No. 4's operations provide for public enjoyment opportunities under its current MRCA management. The MRCA's primary mission is conservation of open space for recreation and natural resource conservation, and as such, opportunities exist to provide greater protection and interpretation of the national significance of this site's cultural resources. The themes represented by Pico Well No. 4 are not represented by any national park units and the site is not comparably managed.

Evaluation of Suitability Factors

Adequacy of representation is determined on a case-by-case basis by comparing the potential addition to the national park system to other comparably managed areas representing the same resource type, while considering differences or similarities in the character, quality, quantity, or combination of resource values. The comparative analysis also addresses rarity of the resources, interpretive and educational potential, and similar resources already protected in the national park system or in other public or private ownership. The comparison results in a determination of whether the proposed new area would expand, enhance, or duplicate resource protection or visitor use opportunities found in other comparably managed areas.

The study area includes several national park system related sites and programs, including SMMNRA, two national historic trails, and a federally designated NPS program for Route 66, all of which represent significant resources and associated natural and cultural resource themes. As further explored in *Chapter 4: Boundary Adjustment Evaluation*, many of the resources in the remainder of the study area could expand and enhance the significance of these NPS-related designated sites and resources if protected in the study area. In some cases, the remainder of the study area contains resources not represented in the national park

system. A summary of suitability findings based on geographic areas of the Rim of the Valley Corridor is provided along with a summary of resources that are further evaluated for boundary expansion potential (*Table 3-3: Summary of Findings - Suitability*).

Areas Determined Suitable for Inclusion in the National Park System

Santa Susana Mountains

The Santa Susana Mountains contain a combination of nationally significant natural and cultural resources that are not currently represented in the national park system. These resources combined with those that expand and enhance the resource themes already represented in SMMNRA make this area suitable as a new national park unit.

The north side of the Santa Susana Mountains is characterized by a convergence of montane and desert influences that create rare and unusual plant communities, including some ancient relict plant communities (e.g. bigcone Douglas-fir and canyon live oak) representing the theme "Land Ecosystems – Dry Coniferous Forest". The area also includes plant communities at their northern or southernmost geographic limits (e.g. valley oak savanna). Culturally, the Santa Susana Mountains were the location for the birth of the oil industry in southern California. Pico Well No. 4, representing the theme "Developing the American Economy", was the first commercially successful oil well on the west coast of the U.S., and the protected natural landscape surrounding Pico Well No. 4 provides a rare opportunity for visitors to experience this resource in an environment similar to that of the 1880s. Pico Well No. 4, while located in a park open for public access and recreation, is currently not comparably managed for cultural resource protection and interpretation.

Several nationally significant resources in the Santa Susana Mountains reflect themes already represented in SMMNRA but which would expand the representation of these themes in the national park system. The diversity of rock formations and mountain ranges illustrate and interpret the story of the Transverse Ranges. The Chatsworth, Towsley, and Las Virgenes formations in the study area expand the fossil resource themes represented in SMMNRA. This area would enhance the quantity, quality, and diversity of grassland and chaparral

Table 3-3: Summary of Findings - Suitability

Sub-Geographic Area	Suitability Finding	Resources and Related Themes that Would Expand and Enhance Resource Protection/Visitor Use Opportunities in SMMNRA and National Park System*
Santa Susana Mountains	Yes. A combination of rare and unusual plant communities (e.g. bigcone Douglas-fir and canyon live oak) representing the theme Land Ecosystems – Dry Coniferous Forest; plant communities at their northern or southernmost geographic limits (e.g. valley oak savanna); Pico Well No. 4 NHL representing the theme Developing the American Economy; Butterfield Overland Trail representing the theme Developing the American Economy (suitability is currently under evaluation in a separate special resource study).	Mountain systems (Transverse Range), fossils, land ecosystems (grassland, chaparral and woodland vegetation), stream systems (riparian vegetation), Ethnic Homelands (archeological sites)
Upper Santa Clara River	Yes. Alluvial fan sage scrub, representing the theme Aquatic Ecosystems.	Land ecosystems (chaparral, dry coniferous forest), stream systems (riparian vegetation).
San Gabriel Mountains and Foothills	Yes. Resources related to geologic processes, a wide diversity of rare habitats, including alluvial fan sage scrub, located in close proximity given the dramatic changes in topography, and technological advances in the areas of astronomy, chaparral ecosystems and watersheds.	Mountain systems (Transverse Range/ mountain building, geologic diversity), land ecosystems (chaparral, dry coniferous forest), stream systems (riparian vegetation), Expanding Science and Technology (Mount Wilson Observatory).
Arroyo Seco	Yes. Resources relate to themes not comparably represented in the national park system, including Expressing Cultural Values (Rose Bowl NHL), and Expanding Science and Technology (the Space Flight Operations Center NHL and Twenty-five Foot Simulator NHL).	Land ecosystems (chaparral and woodland vegetation), aquatic habitat (riparian and alluvial fan sage scrub), Expressing Cultural Values (Gamble House NHL), migration from outside and within (Arroyo Seco Parkway). In addition, the area includes an unusually high quantity and density of sites listed in the National Register of Historic Places, many of which have thematic connections to the area's NHL sites.
Santa Monica Mountains (outside of current SMMNRA)*	No. Areas outside of SMMNRA primarily contain resources represented in SMMNRA.	Land ecosystems (chaparral and woodland vegetation), stream systems (riparian vegetation), architecture (Case Study House Program/ Eames House NHL). Developing the American Economy; Butterfield Overland Trail representing the theme Developing the American Economy (suitability is currently under evaluation in a separate special resource study).
Conejo Hills – Las Posas Hills*	No. The themes represented by nationally significant resources in this area are already represented in SMMNRA.	Mountain systems (Transverse Range), fossils, land ecosystems (chaparral and woodland vegetation), stream systems (riparian vegetation)
Simi Hills*	N/A for SMMNRA areas in the Simi Hills. No. The themes represented by nationally significant resources in this area are primarily represented in SMMNRA.	Mountain systems (Transverse Range), fossils, land ecosystems (grassland, chaparral and woodland vegetation), stream systems (riparian vegetation), ethnic homelands (prehistoric rock art and village sites), Cold War Era (Alfa, Bravo and Coca Test Areas)
Verdugo Mountains – San Rafael Hills*	No. The themes represented by nationally significant resources in this area are already represented in SMMNRA.	Mountain systems (Transverse Range), land ecosystems (chaparral and woodland vegetation), aquatic ecosystems (riparian vegetation)
Los Angeles River*	No. The themes represented by nationally significant resources in this area are already represented in SMMNRA.	Transforming the environment (water conveyance and flood protection systems, protecting and preserving the environment), Anza NHT (recreation route along the river), Old Spanish NHT (El Pueblo de Los Angeles Historical Monument)

*Note: These are further explored in Chapter 4: Boundary Adjustment Evaluation.

related vegetation communities represented at SMMNRA. The numerous canyons in the Santa Susana Mountains also contain sensitive riparian communities, such as black cottonwood forest and Fremont cottonwood forest. The area's broad range of imperiled vegetation communities also supports several sensitive plant and animal species, some of which are federally listed.

The Santa Susana Mountains also include significant resources related to cultural resource themes that have the potential for future scientific discovery. As described in *Chapter 2: Resource Description*, the Santa Susana Mountains area is largely unsurveyed for archeological resources but served as a transition zone between the territories of Chumash, Gabrieleno/Tongva, and the Tatavium. These areas have the potential for yielding archeological resources that would enhance knowledge and understanding of the relationships between these Native American groups (CSP 2005).

Upper Santa Clara River

As identified in the *San Gabriel Study* (NPS 2013f), the Upper Santa Clara River area has been determined to be a suitable addition to the national park system. In this study, the NPS determined that no national park unit in the South Pacific Border natural region contains the alluvial fan vegetation unique to the Transverse and Peninsular Ranges of southern California, and that the Upper Santa Clara River area, along with the Tujunga Wash area of the San Gabriel Foothills, are two of three alluvial fan sage scrub sites that possess the greatest species diversity.

In addition to being suitable based on resources related to aquatic ecosystems, the Upper Santa Clara River area contains resources that would enhance the significance of resource themes already represented in SMMNRA. The Upper Santa Clara River area contains fossiliferous formations that are not represented in SMMNRA, including the Tick Canyon and Mint Canyon formations, so addition of this area to SMMNRA would increase to the quantity and diversity of fossil species already present in SMMNRA. This area also includes more sensitive plant community types (at least seventeen), including riparian communities and associated sensitive plant and animals species, than any other portion of the study area (LADRP 2012a).

San Gabriel Mountains and Foothills

Through the San Gabriel study process, the San Gabriel Mountains and foothills, including those portions that are within the Rim of the Valley Corridor study area, were determined to be suitable additions to the national park system. The study concluded that the overall combination of cultural and natural resource values and themes represented by the San Gabriel Mountains and foothills is not comparable to any other national park unit or comparably managed areas. Represented within these themes are unique geological features and dramatic geologic processes, a wide diversity of rare habitats, including alluvial fan sage scrub, located in close proximity given the dramatic changes in topography, and technological advances in the areas of astronomy, chaparral ecosystems and watersheds.

Arroyo Seco

The Arroyo Seco contains a combination of nationally significant natural and cultural resources that are not currently represented in the national park system. These resources combined with those that expand and enhance the resource themes already represented in SMMNRA make this area suitable as a new national park unit.

Significant resources in this geographic area include the Gamble House NHL, representing the theme "Expressing Cultural Values – Architecture;" the Rose Bowl NHL, representing the theme "Expressing Cultural Values – Popular and Traditional Culture;" and the Twenty-five Foot Space Simulator NHL and the Space Flight Operations Facility NHL, both representing the themes "Expanding Science and Technology" and "Man in Space." Although these resource themes are not represented in the national park system, the Gamble House NHL is comparably managed for resource protection and public enjoyment.

This geographic area also reflects an unusually high quantity and density of sites listed in the National Register of Historic Places, many of which have thematic connections to the area's NHL sites. Some cultural resources, such as the Arroyo Seco Parkway and flood protection features may also be nationally significant. The Arroyo Seco corridor also includes a segment of Route 66. In addition, the Arroyo Seco area contains small remnants of alluvial fan sage scrub, riparian habitat, walnut woodland,

The NPS has determined, based on the character, quantity and quality of resource values in the study area, that there are nationally significant resources in the Rim of the Valley Corridor study area suitable for inclusion in the national park system, including those analyzed and determined suitable as part of the *San Gabriel Study* (NPS 2013f).

and chaparral-related resources which would expand and enhance to the natural resource themes reflected in SMMNRA.

Other Areas (Potential for Boundary Adjustment to SMMNRA)

The Santa Monica Mountains and Simi Hills (outside SMMNRA), Conejo Mountain-Las Posas Hills, Los Angeles River and Verdugo Mountain-San Rafael Hills areas primarily contain resources already represented in SMMNRA. These resources would expand and enhance resource protection and visitor use opportunities currently represented in SMMNRA. The potential for adding these areas to SMMNRA through a boundary adjustment is explored in *Chapter 4: Boundary Adjustment Evaluation*.

Overall Conclusions: Suitability

The NPS has determined, based on the character, quantity and quality of resource values in the study area, that there are nationally significant resources in the Rim of the Valley Corridor study area suitable for inclusion in the national park system, including those analyzed and determined suitable as part of the *San Gabriel Study* (NPS 2013f).

The *San Gabriel Study* concluded that the overall combination of cultural and natural resource values and themes represented by the San Gabriel Mountains is not comparable to any other national park unit or comparably managed areas. Represented within these themes are unique geological features and dramatic geologic processes, a wide diversity of rare habitats located in close proximity given the dramatic changes in topography, and technological advances in the areas of astronomy, chaparral ecosystems and watersheds. These resources are located within the San Gabriel Mountains, San Gabriel foothills, and Upper Santa Clara River portions of the Rim of the Valley Corridor study area.

Within the remainder of the study area outside of SMMNRA, the Santa Susana Mountains have a combination of resources that are outstanding representations of natural and cultural resources not represented in the national park system or comparably managed areas. The Santa Susana Mountains include habitat types representing the theme “Land Ecosystems” that are not found in other na-

tional park units or comparably managed sites. The convergence of montane and desert influences have created rare and unusual plant communities, including ancient relic examples of bigcone Douglas-fir and canyon live oak. The Santa Susana Mountains also serve as the northern or southernmost geographic limits for several other plant communities such as valley oak savanna. These characteristics make the Santa Susana Mountains unique for understanding the distribution and evolution of flora in the context of the significant California Floristic Province and rare Mediterranean-type ecosystem. Culturally, the Santa Susana Mountains were the location for the birth of the oil industry in the western U.S. Pico Well No. 4, representing the theme “Developing the American Economy”, was the first commercially successful oil well on the west coast of the U.S., and the protected natural landscape surrounding Pico Well No. 4 provides a rare opportunity for visitors to experience this resource in an environment similar to that of the 1880s.

At the eastern end of the study area, the Arroyo Seco contains a range of cultural resources that are an outstanding representation of themes not represented in the national park system or comparably managed areas. These resources represent the theme “Expressing Cultural Values”, as exemplified by the Rose Bowl National Historic Landmark, and the theme “Expanding Science and Technology” (specifically space exploration) as embodied by the Space Flight Operations Center National Historic Landmark and Twenty-five Foot Simulator National Historic Landmark, both located at the Jet Propulsion Laboratory. In addition to reflecting themes not represented in the national park system, these resources were found to not be comparably managed for resource protection and public enjoyment.

The Santa Monica Mountains and Simi Hills (outside SMMNRA), Conejo Mountain-Las Posas Hills, Los Angeles River and Verdugo Mountains-San Rafael Hills areas contain resources of national significance that would expand and enhance resource protection and visitor use opportunities currently represented in SMMNRA. The potential for adding these areas to SMMNRA through a boundary adjustment is explored in *Chapter 4: Boundary Adjustment Evaluation*.

To be feasible as a new unit of the national park system, an area must be: (1) of sufficient size and appropriate configuration to ensure sustainable resource protection and visitor enjoyment (taking into account current and potential impacts from sources beyond proposed park boundaries); and (2) capable of efficient administration by the National Park Service at a reasonable cost.

The majority of study area lands (84%) are undeveloped/unimproved lands, many of which are protected for recreation and/or conservation purposes (approx. 344,000 acres or 52%).

Feasibility

To be feasible as a new unit of the national park system, an area must be: (1) of sufficient size and appropriate configuration to ensure sustainable resource protection and visitor enjoyment (taking into account current and potential impacts from sources beyond proposed park boundaries); and (2) capable of efficient administration by the National Park Service (NPS) at a reasonable cost. Only those resources determined both nationally significant and suitable (containing a cultural or natural resource type not already represented in the national park system or comparably protected by another entity) are eligible for protection as a new park unit.

In evaluating feasibility for a new national park unit the NPS considers a variety of factors for a study area including:

- Land use, current and potential site uses, ownership patterns, planning and zoning
- Access and public enjoyment potential
- Boundary size and configuration
- Existing resource degradation and threats to resources
- Social and economic impacts
- Costs associated with operation, acquisition, development, and restoration
- Public interest and support

This feasibility evaluation also considers the ability of the NPS to undertake new management responsibilities based on current and projected availability of funding and personnel. An overall evaluation of feasibility is made following analysis of all the criteria. Sometimes evaluations identify concerns or conditions, rather than simply reaching a yes or no conclusion. For example, some new areas may be feasible additions to the national park system only if landowners are willing to sell, or the boundary encompasses specific areas necessary for visitor access, or if state or local governments are willing to provide assurances that adjacent land uses will remain compatible with the study area's resources and values (NPS 2006a).

Geographic Scope

Because the study area includes an existing national park unit, this feasibility analysis focuses on the portions of the study area outside of the existing SMMNRA boundary. In addition, the feasibility analysis incorporates the findings from the *San Gabriel Mountains and Watershed Special Resource Study* (San Gabriel Study)(NPS 2013f) where that study overlaps with the Rim of the Valley Corridor study area (primarily in the San Gabriel Mountains and the Upper Santa Clara River area).

Evaluation of Feasibility Factors

Land Use, Ownership and Management, Planning and Zoning

Land Use

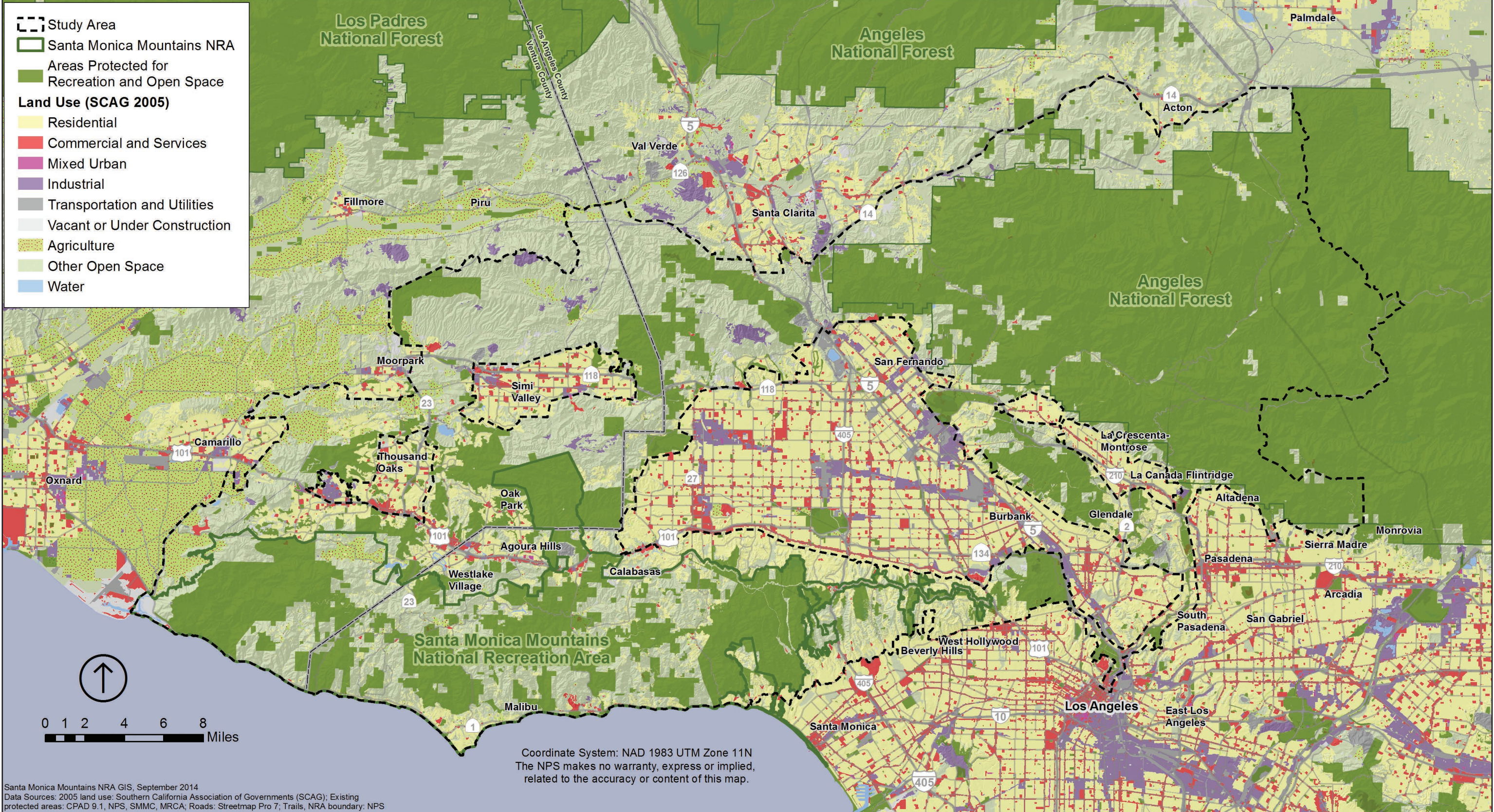
The study area encompasses a wide range of land uses including agricultural lands, dense urban areas, residential communities, and vast open spaces and public parklands (*Table 3-4: Study Area Land Use*). Study area land uses, ownership, and management are similar to the current mix of land uses that occur in SMMNRA, primarily open space and vacant land (over 50% in public ownership) with some areas of residential, commercial, and industrial/infrastructure development. The majority of study area lands (84%) are undeveloped/unimproved lands, many of which are protected for recreation and/or conservation purposes (approx. 344,000 acres or 52%). Developed lands comprise 13% or about 84,000 acres and include residential areas, commercial and industrial areas, and land used for infrastructure (transportation, communication, and utilities). The remaining 2%, or approximately 15,000 acres, is primarily used for agriculture.

Within the subgeographic areas of the study area, land use composition varies (*Figure 3-3: Land Use*). Developed areas such as commercial, industrial, and residential lands are primarily located in the eastern Santa Monica Mountains and the Los Angeles River and Arroyo Seco corridors. Agriculture is the dominant land use in the western portion of the study area, primarily in the Conejo Hills-Las Posas Hills area.

Land Use

Rim of the Valley Corridor Special Resource Study

National Park Service
U.S. Department of the Interior



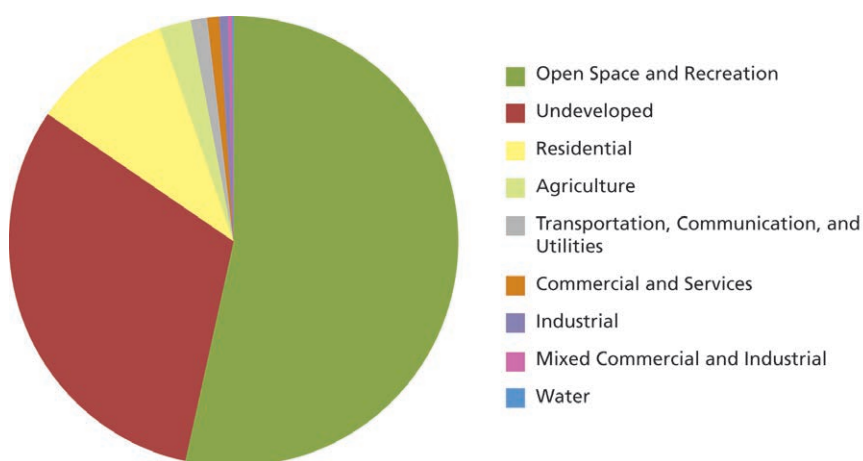
Santa Monica Mountains NRA GIS, September 2014
Data Sources: 2005 land use: Southern California Association of Governments (SCAG); Existing protected areas: CPAD 9.1, NPS, SMMC, MRCA; Roads: Streetmap Pro 7; Trails, NRA boundary: NPS

Figure 3-3: Land Use

Table 3-4: Study Area Land Use

Land Use	Approximate Acreage	%Study Area
Open Space and Recreation	344,703	53%
Undeveloped	200,661	31%
Residential	65,268	10%
Agriculture	14,721	2.3%
Transportation, Communication, and Utilities	7,557	1.2%
Commercial and Services	5,494	0.9%
Industrial	3,992	0.6%
Mixed Commercial and Industrial	1,934	0.3%
Water	662	0.1%
Total	645,000	100%

Sources: California Protected Area Database v. 1.9 (2013) (for recreation and open space). All other land use classifications are from the Southern California Association of Governments. Land Use Data (2005)

Figure 3-4: Study Area Land Use

Open Space and Recreation

The primary land use within the study area includes lands protected for open space, recreation, or conservation. These lands comprise approximately 53% of the study area. As described in previous sections, the study area includes three federally-protected areas, the Angeles National Forest and San Gabriel Mountains National Monument, both managed by the U.S. Forest Service, and Santa Monica Mountains National Recreation Area (SMMNRA). SMMNRA, protected by a variety of land management agencies including the NPS, comprises 25% of the study area. Another one-third of the study area is managed by the U.S. Forest Service. As described in the “Recreational Resources” section in *Chapter 2: Resource Description*, a number of local, regional and state agencies manage open space outside of these two federally-protected areas. Existing management efforts and authorities are described in the next section.

Undeveloped Open Space/Vacant

Approximately 30% of the study area is undeveloped or vacant lands that are not expressly managed for recreation or conservation purposes. Such lands are largely privately owned. The Santa Susana Mountains (82% vacant) and Upper Santa Clara River (83% vacant) have the highest percentages of undeveloped open space or vacant lands.

Residential

Approximately 10% of the study area has been developed for residential use. The highest densities of residential development occur in the Verdugo Mountains (26%) and along the highly urbanized Arroyo Seco corridor where almost 50% of the lands are residential. For most of the other subgeographic areas, residential land uses comprise between 10-16% of the land area. Such residential areas are typically concentrated around the urbanized valleys. There is relatively little residential development in the San Gabriel Mountains and Santa Susana Mountains.

Commercial and Industrial Uses

Commercial uses range from downtown commercial districts in urban corridors along the Arroyo Seco and Los Angeles River, to pockets of retail, office space, and other commercial services located throughout the study area. A wide range of industrial uses is also present in the more urbanized areas. These uses comprise less than 1% of the overall study area. Within the Santa Susana Mountains there are a number of active oil wells and a large natural gas storage area. Some gravel mining occurs within the Upper Santa Clara River area at the base of the San Gabriel Mountains.

Infrastructure and Utilities

Infrastructure includes roads, landfills, water conveyance and flood control structures, dams, communications facilities, utilities, and transportation corridors, all of which are necessary to support a large metropolitan area. The hillsides and mountains within the study area surround densely developed urban and suburban areas. These areas require extensive public infrastructure for water supply, flood protection, and sanitation facilities such as landfills. These uses comprise a little over 1% of the study area lands.

State agencies have expressed interest in the opportunity to expand the current SMMNRA cooperative management agreement to their lands in the Rim of the Valley Corridor area citing opportunities to increase operational efficiency in those open space and recreation areas.

Agencies that manage land cooperatively with NPS in SMMNRA also manage thousands of acres of open space and recreation areas in the Rim of the Valley Corridor study areas beyond SMMNRA.

Ownership and Management

Ownership

More than half of the lands in the study area are in some form of public ownership or privately protected status (53%), while the other half are in private ownership (47%). Public ownership is greatest in San Gabriel Mountains (97%), Santa Monica Mountains (45%), and the Verdugo Mountains-San Rafael Hills (44%). The Los Angeles River and Simi Hills areas also have over 40% of the lands protected for conservation and/or recreational purposes. Areas with the highest percentage of private unprotected lands include the Upper Santa Clara River, the Conejo Hills-Las Posas Hills area, and the Santa Susana Mountains (Table 3-5: *Land Ownership/Protected Lands*). For each of these areas much of the privately owned land is undeveloped or vacant and would therefore have the potential for conversion to other land uses subject to local land use regulations. There are also opportunities to conserve these large areas of open space through a variety of land management approaches including direct land acquisition or cooperative management through public and private partnerships.

The largest block of open space within the study area is located in the San Gabriel Mountains, managed by the U.S. Forest Service as the Angeles National Forest and the newly-designated San Gabriel Mountains National Monument (180,000 acres). These lands are currently managed for multiple uses, including for public recreation, utility corridors and watershed management, with recreation as the primary use. Consistent with the findings of the recently completed *San Gabriel Study* (NPS 2013f), the NPS determined that continued U.S. Forest Service management would be necessary and desirable given the size and scale of the Angeles National Forest, including those portions now included in the new San Gabriel Mountains National Monument, the complexity of land uses, and NPS' inability to take on new management responsibilities and costs of that magnitude. The annual operating budget for the Angeles National Forest, including those portions now included in the new San Gabriel Mountains National Monument, is over \$30 million annually. Therefore, the U.S. Forest Service managed areas of the San Gabriel Mountains would not be consid-

ered feasible for inclusion in a new national park unit or addition to SMMNRA. The NPS could pursue cooperative management and partnership opportunities with the U.S. Forest Service, without NPS designation, using existing authorities that allow for interagency operational efficiency in attaining shared goals and missions.

Agencies that manage land cooperatively with NPS in SMMNRA also manage thousands of acres of open space and recreation areas in the Rim of the Valley Corridor study areas beyond SMMNRA. California State Parks, the Santa Monica Mountains Conservancy, and the Mountains Recreation and Conservation Authority (MRCA) manage approximately 55,000 acres of land in SMMNRA through cooperative agreements with the NPS. Outside of SMMNRA, they manage another 20,000 acres of parks and open spaces. These lands are located in the Simi Hills, Santa Susana Mountains, the Los Angeles River corridor, the eastern Santa Monica Mountains, the Verdugo Mountains-San Rafael Hills, the Upper Santa Clara River area, and the San Gabriel Mountain foothills. These state agencies have expressed interest in the opportunity to expand the current SMMNRA cooperative management agreement to their lands in the Rim of the Valley Corridor area citing opportunities to increase operational efficiency in those open space and recreation areas.

Management

The following section describes the complex mix of current agency, local government, non-profit, and private entities that manage land and provide public enjoyment opportunities in the study area.

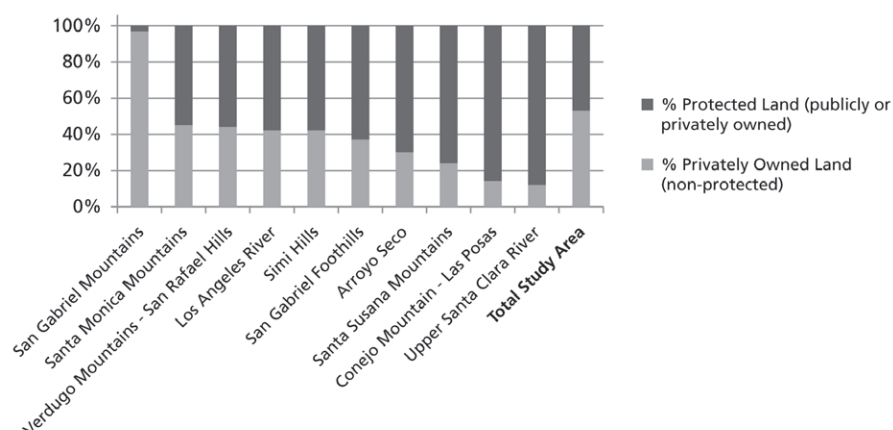
National Park Service

The National Park Service plays a number of roles in the management of areas within the study area. The NPS manages SMMNRA cooperatively with many state, local park agencies with non-profit organizations and private landowners to protect resources and provide public enjoyment opportunities. Roughly 80,000 acres of the land within the 153,250-acre SMMNRA are preserved for resource protection and/or public enjoyment. Although an NPS boundary encircles the whole SMMNRA, the NPS currently has direct responsibility for only 15% of the land within SMMNRA (23,300 acres).

Table 3-5: Land Ownership/Protected Lands

Rim of the Valley Corridor Sub-Geographic Area	% Protected Lands (Public or Private Ownership)	% Private Ownership (Non-Protected)
San Gabriel Mountains	97%	3%
Santa Monica Mountains	45%	55%
Verdugo Mountains-San Rafael Hills	44%	56%
Los Angeles River	42%	58%
Simi Hills	42%	58%
San Gabriel Foothills	37%	63%
Arroyo Seco	30%	70%
Santa Susana Mountains	24%	76%
Conejo Mountain-Las Posas Hills Area	14%	86%
Upper Santa Clara River	12%	88%
Total Study Area	53%	47%

Source: California Protected Area Database v1.9 (2013)

Figure 3-5: Land Ownership/Protected Lands

Although an NPS boundary encircles the whole SMMNRA, the NPS currently has direct responsibility for only 15% of the land within SMMNRA (23,300 acres).

SMMNRA is limited by the boundary in conducting management activities. Such activities in areas beyond the current national recreation area boundary are limited to projects that further SMMNRA's defined purpose. Current efforts outside the boundary include urban outreach and resource management cooperation and assistance.

The NPS manages two national historic trails (NHT), including the Juan Bautista de Anza NHT (Anza Trail) and the Old Spanish NHT, that traverse the study area. The NPS partners with local parks and recreation agencies in the area to provide interpretation on the Anza Trail, establish recreation trail routes, and mark the historic route with signs or markers. The Old Spanish National Historic Trail which ends in Los Angeles has some local interpretation at El Pueblo de Los Angeles Historical Monument which was a former site along the trail route.

The NPS also provides technical assistance to local communities and organizations

through the Rivers, Trails and Conservation Assistance Program. Grants for state and local land acquisition and park recreational facility development are administered through the Land and Water Conservation Fund Program.

The NPS administers the Route 66 Corridor Program which provides cost-share grants to preserve and interpret the Route 66 corridor, and provides technical assistance to public and private entities to address Route 66 preservation needs.

The NPS is also authorized to administer grant programs to assist with a variety of historic preservation and community projects focused on heritage preservation. The NPS also administers the Japanese American Confinement Sites (JACS) grant program. Public Law 109-441 (16 USC 461) established the JACS grant program for the preservation and interpretation of U.S. confinement sites where Japanese Americans were incarcerated during World War II.

Other Federal, State and Local Land Management Agencies and Organizations

U.S. Forest Service

Established in 1892 for the primary purpose of watershed protection, the Angeles National Forest (ANF) contains 70% of Los Angeles County's open space and its primary use is for recreation (USFS 2007). On October 10, 2014, President Obama established the San Gabriel Mountains National Monument which became the eighth U.S. Forest Service national monument. The monument, which consists primarily of areas that were part of ANF, is 346,177 acres as shown in *Chapter 1: Introduction*, on page 5 (USFS 2014). In addition to recreation and water resource purposes, these U.S. Forest Service managed areas contain extensive infrastructure that serves the Los Angeles region, including power lines, water supply and flood control facilities, media communications facilities, and roads. Activities within the ANF are managed according to the *Land and Resource Management Plan* (USFS 2006) to allow sustained use and protection of a variety of forest resources. The resources and recreational areas of the San Gabriel Mountains within the study area were severely impacted by the 2009 Station Fire. The U.S. Forest Service has been working with partners

Established in 1980, SMMC has helped to preserve over 65,000 acres of parkland in the Rim of the Valley Corridor study area, developed over 100 public recreational facilities, and has provided grants to nonprofit organizations for education and interpretation (SMMC 2011).

to repair and rebuild recreational facilities such as trails and on restoration and recovery efforts. The majority of funding for the ANF is dedicated to wildfire preparedness and fuels reduction.

Bureau of Land Management (BLM)

The BLM manages almost 3,000 acres of land in the study area. These lands consist of isolated parcels scattered throughout the Soledad basin and in the eastern Santa Susana Mountains near Santa Clarita Woodlands Park. The *South Coast Resource Management Plan (RMP)* provides guidance for the management of the approximately 300,000 acres of BLM-administered public lands in portions of five southern California counties: San Diego, Riverside, San Bernardino, Orange, and Los Angeles. According to the 1994 *RMP*, most of the parcels in the Soledad basin area are designated for sale or exchange under the Federal Land Policy and Management Act of 1976. However, several parcels are designated for exchange with the U.S. Forest Service. Parcels in the eastern Santa Susana Mountains are recommended for protective disposal (ensures that valuable resources are managed for biodiversity values, regardless of who ultimately manages these parcels). Such parcels would be made available to a local agency prior to disposal.

The *RMP* is currently under revision and a draft was released for public review in 2012 (BLM 1994). Some alternatives explored in the BLM's draft *RMP* recommend establishing an area of critical environmental concern (ACEC) for the Upper Santa Clara River area. An ACEC is an area 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. The alternatives considered in the draft plan also recommend that BLM lands containing segments of the Pacific Crest Trail would not be considered for disposal (BLM 2011).

In Ventura County, the *Bakersfield Resource Management Plan* (2013) provides guidance for parcels in the area north of the Santa Clara River and south of the Los Padres National Forest. None of these parcels are within the

study area. However, some of them are within important habitat linkages between the Santa Susana and Topatopa Mountains (BLM 2013).

California State Land Conservancies

Two California state land conservancies have jurisdiction within the study area. The entire study area is within the jurisdictional authority of the Santa Monica Mountains Conservancy (SMMC). Established in 1980, SMMC has helped to preserve over 65,000 acres of parkland in the Rim of the Valley Corridor study area, developed over 100 public recreational facilities, and has provided grants to nonprofit organizations for education and interpretation (SMMC 2011). The western San Gabriel Mountains and foothills within the study area are also within the jurisdiction of the San Gabriel and Lower Los Angeles Rivers and Mountains Conservancy (RMC).

Coastal Zone Management

The California Coastal Act of 1976 (Coastal Act) includes specific policies that address issues such as shoreline public access and recreation, terrestrial and marine habitat protection, visual resources, land use, and public works. The policies of the Coastal Act constitute the statutory standards applied to planning and regulatory decisions made by the California Coastal Commission and by local governments, pursuant to the Coastal Act. The California Coastal Act established a coastal zone that varies in width from several hundred feet in highly urbanized areas up to five miles in certain rural areas. Offshore the coastal zone includes a three-mile-wide band of ocean. A large part of SMMNRA occurs within the coastal zone.

The Coastal Commission, in partnership with coastal cities and counties, plans and regulates the use of land and water in the coastal zone. Development activities generally require a coastal permit from either the Coastal Commission or the local government where a local coastal plan (LCP) has been established. Within the Santa Monica Mountains coastal zone LCP's have been established for the Ventura County coast and for the City of Malibu in Los Angeles County. The LCP for the remaining unincorporated portion of the Santa Monica Mountains in Los Angeles County is pending approval.

State of California Coastal Conservancy
The California Coastal Conservancy works with local governments, other public agencies, non-governmental organizations, and private landowners to purchase, protect, restore, and enhance coastal resources, and to provide access to the shore. The California Coastal Conservancy has contributed funding for land conservation and restoration projects in the coastal zone. Funds are currently available from the Coastal Conservancy's Southern California Wetlands Recovery Project to restore and enhance wetlands in southern California.

California State Parks

The Angeles District of the California Department of Parks and Recreation is responsible for managing state parks within SMMNRA and the study area. Within SMMNRA, California State Parks owns and manages the majority of publicly owned lands (35,850 acres). This includes large parks such as Point Mugu State Park, Leo Carrillo State Park, Malibu Creek State Park, and Topanga State Park. State beach parks include El Pescador, La Piedra, El Matador, Malibu Lagoon, Point Dume, Las Tunas, Will Rogers, and Santa Monica state beaches. Will Rogers State Historic Park is in the eastern Santa Monica Mountains.

Beyond SMMNRA, California State Parks manages parks near downtown Los Angeles, including Rio de Los Angeles State Park and Los Angeles State Historic Park. North of SMMNRA is Santa Susana State Historic Park, Los Encinos State Historic Park, and Placerita Canyon State Park (managed by the Los Angeles County Department of Parks and Recreation). With the recent establishment of Rio de Los Angeles State Park and Los Angeles State Historic Park, California State Parks has engaged urban audiences in downtown Los Angeles.

County Parks

The Los Angeles County Department of Parks and Recreation, Los Angeles County Department of Beaches and Harbors, and the Ventura County Parks Department each manage numerous parks and trail systems within the Rim of the Valley Corridor. The study area contains almost 10,000 acres of county parklands. Within the study area, Los Angeles County parks primarily consist of beaches along the Santa Monica Mountains coast such

as Zuma County Beach, Westward County Beach, and Nicholas Canyon County Beach. Ventura County has regional parks in the Santa Susana Mountains, Simi Hills, and Camarillo areas including Camarillo Grove County Park, Happy Camp Canyon Regional Park (managed by the MRCA), Tapo Canyon Regional Park, and Oakbrook Regional Park.

Special Districts

Recreation and park districts are independent from local governments and formed to provide park and recreational opportunities. Three districts operate within the study area, the Rancho Simi, Pleasant Valley, and Conejo recreation and park districts. The Rancho Simi Recreation and Park District provides parks and recreation activities in the Simi Valley area. The park district manages nearly 3,000 acres of open space within the study area for hiking, biking, horseback riding, and wildlife preservation. The Pleasant Valley Recreation and Park District oversees park and recreational opportunities for the City of Camarillo and the surrounding communities, including the California State University Channel Islands campus. Conejo Recreation and Park District manages over 1,700 acres of parks and open space serving the communities of Thousand Oaks, Newbury Park, and the Ventura County portion of Westlake Village.

Joint Powers Authorities

A Joint Powers Authority (JPA) is an entity permitted under state law, whereby two or more public authorities (e.g. local government, or utility or transport districts) can operate collectively. Joint powers agencies have been successful in leveraging funding and implementing projects which serve the purposes of each member agency. Five JPAs operate within the study area.

The Mountains Recreation and Conservation Authority (MRCA) is a partnership between the Santa Monica Mountains Conservancy and the Conejo and Rancho Simi recreation and park districts dedicated to the preservation of open space and parkland, watersheds, trails, and wildlife habitat. The MRCA functions as the land management arm of the SMMC and provides ranger services, fire protection, planning and natural resources expertise, and educational programs for almost 50,000 acres of public lands and parks under its or the

SMMC's ownership. Over half of this land is within the study area.

Conejo Open Space Conservation Agency (COSCA) was created in 1977 as a joint powers entity between the City of Thousand Oaks and the Conejo Recreation and Park District for the purpose of acquiring and managing natural open space within and around the Conejo Valley. COSCA manages open space and trails, primarily in the western Santa Monica Mountains and Conejo Mountain-Las Posas Hills area. Currently, COSCA owns approximately 8,200 acres of open space lands and manages an additional 4,000 acres owned by the City, the District, or the MRCA.

The COSCA-managed trail system connects to adjacent trails and open space lands of the National Park Service, California Department of Parks and Recreation, MRCA, Rancho Simi Recreation and Park District, Santa Rosa Valley and includes a segment of the recreation route for the Juan Bautista de Anza National Historic Trail.

The Desert and Mountain Conservation Authority (DMCA) is a joint powers authority area between the Antelope Valley Resource Conservation District and the SMMC that serves Antelope Valley. Established in 2006, the DMCA acquires and manages open space lands within the boundaries of the two founding agencies. The Santa Clarita Watershed and Recreation Conservation Authority is a joint powers authority between the City of Santa Clarita and the SMMC that manages park and recreation lands in the Santa Clarita area.

The Watershed Conservation Authority (WCA) is a joint powers entity of the RMC and the Los Angeles County Flood Control District. Through the WCA, the RMC and Los Angeles County conduct joint projects to provide open space, habitat restoration, and watershed improvement in the watersheds of both the San Gabriel River and the Lower Los Angeles River.

Agencies Responsible for Flood Protection and Sanitation Facilities

Regulatory and management agencies responsible for flood control and sanitation include the Los Angeles County Department of Public Works (LADPW), the U.S. Army Corps of

Engineers (USACOE), and the Los Angeles County Sanitation Districts. The California Department of Transportation (Caltrans) and local public works departments of local governments are responsible for maintaining transportation corridors.

Responsible for much of the flood control and watershed management services within the study area, LADPW partners with many other agencies in its efforts to promote best management practices for activities that may affect watersheds. Within the study area specific sites that LADPW manages include Big Tujunga Dam, Pacoima Dam, Sullivan Canyon Creek and Dam, and Topanga Creek.

The Los Angeles District of the USACOE's jurisdiction includes dams, floodways, and debris basins. Within the study area, the USACOE owns and manages Lopez Reservoir and Dam on Pacoima Wash, Hansen Dam on Big Tujunga Wash, and Sepulveda Basin on the Los Angeles River. Recently the USACOE has been actively involved with Los Angeles River revitalization efforts. The USACOE Los Angeles River Ecosystem Restoration Study is an investigation to determine if there is federal interest in ecosystem restoration opportunities along the Los Angeles River within the study area. The study explores opportunities along the river from the Canoga Park area to downtown Los Angeles, approximately 32 miles.

The Sanitation Districts of Los Angeles County are responsible for managing wastewater and solid waste. The Sanitation Districts facilities within the Study include Calabasas Landfill (within SMMNRA), Mission Canyon Landfill, Scholl Canyon Landfill, La Canada Water Reclamation Plant, and the District 27 Pumping Plant (located on Pacific Coast Highway near Coastline Drive). The Sanitation Districts of Los Angeles County also owns other land in the Santa Monica Mountains intended for a landfill.

Private Land Management

Private land stewardship plays a key role in the protection of open space and related natural and cultural resources. Nationally, about 2% of private lands are formally protected (owned and managed by a non-profit conservation organization or under conservation easement). Although 2% might seem like a small number,

this total amounts to an almost 24 million acre system of protected lands, nearly as large as the entire national park system in the lower 48 states (North American Bird Conservation Initiative, U.S. Committee 2013). Private lands make up approximately 40% of undeveloped areas or open space within SMMNRA (Stoms, Jantz, and Davis 2013).

Private land stewardship efforts and opportunities take many forms including incentives from federal, state, and local government programs, technical assistance from university extension services and resource conservation districts, and easements facilitated by non-governmental organizations. In California, state farmland conservation programs provide financial incentives for owners of farms and ranch lands to preserve agricultural land uses. Within the study area 16,600 acres of land are enrolled in the Ventura County California Land Conservation Act Program. Through this program landowners enter into voluntary contracts with the county to maintain land in agricultural use for a period of 10 or 20 years. In exchange for the restriction in land use, landowners benefit from reduced property taxes. Local efforts to protect open space and farmland have also resulted in other measures to protect these lands. For example, the County of Ventura, as well as eight of the ten incorporated cities, have enacted Save Open-Space and Agricultural Resources (SOAR) initiatives to give citizens the right to choose between preserving green space or allowing development.

Non-Governmental Conservation Activities

Numerous organizations in the region work to conserve and restore lands, as well as to provide recreational opportunities. For example, the Trust for Public Land and the Mountains Restoration Trust partner with federal, state and local government agencies, and the private community to protect, preserve, and restore natural habitat in the Santa Monica Mountains. In the San Gabriel Mountains foothills, numerous land trusts work to conserve land and habitat, including the Arroyos and Foothills Conservancy, the Sierra Madre Mountain Conservancy, and the San Gabriel Mountains Regional Land Conservancy which serves as an umbrella organization for many other land trusts.

Along the Soledad Basin/ Upper Santa Clara River area, the Riverside Land Conservancy is working with federal, state, and local partners to conserve habitat linkages between the Sierra Pelona and San Gabriel Mountains. The Nature Conservancy, a national land trust, has also been working collaboratively to protect lands along the Santa Clara River. This includes partnerships with local farmers. These collaborative efforts have protected approximately one-third of the river corridor in Ventura County. More recently, The Nature Conservancy has been working on conservation efforts along the Santa Clara River in Los Angeles County.

The NPS partners with the Santa Monica Mountains Fund and the Western National Park Association. Both groups support efforts in SMMNRA. The Santa Monica Mountains Fund is the official “friends” group of SMMNRA. Established in 1988, the Santa Monica Mountains Fund supports educational and resource protection efforts for the NPS and California State Parks. The fund has raised money for publication of *Outdoors*, a comprehensive guide to visitor activities and programming in SMMNRA as well as for ongoing mountain lion research. Western National Park Association works in partnership with the NPS to advance education, interpretation, research, and community engagement to connect people to the western national park experience. Western National Park Association operates the bookstore at the King Gillette Ranch Visitor Center and has provided funding for NatureBridge, which provides field science educational opportunities for local southern California students from under-resourced local schools. The Santa Susana Mountain Park Association works to conserve lands in the Simi Hills and Santa Susana Mountains.

Other non-governmental efforts include park associations, conservation organizations, historical societies, and friends groups, such as local Audubon Society chapters. One of the area’s oldest conservation organizations is the Arroyo Seco Foundation. Founded by Charles Lummis more than one hundred years ago, the Arroyo Seco Foundation works to preserve and promote the Arroyo Seco.

Given the complexity of land use and ownership within the study area, a new park unit would only be feasible using a collaborative management approach that retains with existing ownership patterns and regulatory authorities as exemplified by current SMMNRA management.

Planning and Zoning

Each of the counties, cities, and communities within and surrounding the study area have established land use plans to guide future development and conservation within their communities. Private lands are spread among 27 local jurisdictions, 22 of which are incorporated, with the remainder subject to area-specific planning and zoning regulated by Los Angeles or Ventura counties. Most of the Ventura County lands are unincorporated. The vast City of Los Angeles has planning and regulatory control for many of the areas in Los Angeles County. Jurisdiction of the City of Los Angeles within the study area includes areas downtown along the Los Angeles River, and the communities of Brentwood, Bel Air, Canoga Park, Chatsworth, Encino, Hollywood, Northridge, Reseda, Sherman Oaks, Studio City, Sylmar, Tarzana, Tujunga, Universal City, West Hills, Winnetka, and Woodland Hills.

Most incorporated cities have local park systems. For example, the City of Los Angeles would continue management of its park system which includes major recreation destinations within the study area, such as Griffith and Elysian parks. Collectively, cities manage 28,500 acres of parks and protected areas within the study area. In unincorporated areas, county and regional recreation and park districts would continue to provide such services.

Conclusion - Land Use, Ownership Patterns, Existing Management, Planning and Zoning

Land use, ownership patterns, and regulatory authorities within the study area are quite diverse. Land use ranges from large, undeveloped natural areas to dense urban corridors. Numerous agencies and organizations own and manage land within the study area including the U.S. Forest Service, Bureau of Land Management, California Department of Parks and Recreation, California state land conservancies, as well as city, regional, and county governments. The land use and ownership patterns for much of the study area are similar to the patterns which exist in SMMNRA today.

Given the complexity of land use and ownership within the study area, a new park unit would only be feasible using a collaborative management approach that retains with exist-

ing ownership patterns and regulatory authorities as exemplified by current SMMNRA management. For over 30 years SMMNRA has functioned as a collaborative effort to protect natural and cultural resources provide recreation, public access, interpretation, education, and other compatible uses within the framework of complex ownership patterns and regulatory authorities.

Given the size and scale of the Angeles National Forest and newly-designated San Gabriel Mountains National Monument, the NPS determined that continued U.S. Forest Service management would be necessary and desirable. However, collaborative management between the NPS and U.S. Forest Service could occur through cooperative management agreements.

Access and Public Enjoyment Potential

More than five million people live within, and adjacent to, the Rim of the Valley Corridor study area (*Figure 1-4: Population Density and Ethnicity in Chapter 1*). Millions more in the greater Los Angeles metropolitan area use the open spaces and parklands of the study area. The population of the greater Los Angeles metropolitan area is expected to increase from 18 million to 22 million by 2035. As described in the recreation description in *Chapter 2: Resource Description*, publicly accessible open space includes over 330,000 acres of federal, state, regional, and locally managed park and recreation areas. Although access to some rivers, creeks, and reservoirs is restricted for water supply and flood protection purposes, many waterways, such as the Los Angeles River, have adjacent bike trails as well as nearby parks that provide recreational opportunities. Additionally, hundreds of miles of trails are located throughout the study area including four nationally designated recreation or scenic trails, and the nearly complete 60-mile Backbone Trail that traverses the heart of the Santa Monica Mountains. Elsewhere, currently undeveloped and unprotected open space with high resource value provides the potential to further expand regional recreational opportunities for the area's growing population. Population growth and increasing visitation may require more facilities, parking areas, and established trails.

The population of the greater Los Angeles metropolitan area is expected to increase from 18 million to 22 million by 2035.... Population growth and increasing visitation may require more facilities, parking areas, and established trails.

Despite the wealth of recreational opportunities throughout the vast study area, access to these resources is uneven for local residents. Many recreational opportunities are located away from densely populated areas and are only accessible by car. Studies have found that communities of color and communities with higher levels of poverty disproportionately lack access to the recreation areas in the greater Los Angeles metropolitan area and in the Rim of the Valley Corridor study area (The City Project 2011, Trust for Public Land 2005). Public transit options to primary recreational opportunities in the San Gabriel Mountains and SMMNRA are sparse and/or non-existent for many communities. Within the U.S. Forest Service managed areas of the San Gabriel Mountains, this has created congestion and capacity issues at popular recreational destinations during busy weekends. Expanding NPS presence in the study area would provide new opportunities in more densely populated areas and reach broader and more diverse audiences.

Because bus and rail transit systems are available in the broader region, there are opportunities to coordinate and cooperate with transit agencies to address the need for public transportation to better connect communities to recreational opportunities in SMMNRA and the study area. Within the study area, the regional Metrolink rail system, managed by the Southern California Regional Rail Authority, has stops in downtown Los Angeles, the Soledad basin including Santa Clarita, and the San Fernando and Simi Valleys. Los Angeles County Metropolitan Transportation Authority (Metro) provides light rail service to portions of the study area including the downtown Los Angeles area, Hollywood, the San Fernando Valley, and the Arroyo Seco corridor. Various bus lines serve communities surrounding the study area, although few provide stops at recreational destinations within the study area.

Recently, the MRCA operated a pilot shuttle system to provide new opportunities to access park sites in SMMNRA (ParkLINK Shuttle). The system was a network of five buses used on three routes in SMMNRA which lasted from July 2005 to mid-November 2007 and ran weekends only (with some holidays). The route extended through the central SMMNRA

creating a loop that traversed Las Virgenes Road/Malibu Canyon Road in the east to the Pacific Coast Highway. In the west, the route followed Kanan Dume Road to Mulholland Drive. The ParkLINK shuttle was funded by MRCA and the Alternative Transportation in Parks and Public Lands Program. The shuttles carried approximately 80 people per day rather than the 100 people per day anticipated. In 2007, the shuttle was discontinued due to funding shortfalls.

Conclusion - Access and Public Enjoyment Potential

There is considerable potential for additional public access and enjoyment within the study area. Existing opportunities for a wide variety of recreational uses are available throughout the study area and there is ample potential for future development of additional recreational opportunities and improved access where these opportunities are currently unavailable.

Boundary Size and Configuration

Beyond SMMNRA, the study area contains approximately 500,000 acres of land with a diverse array of nationally significant natural and cultural resources. Many of these significant resources are similar or related to resources that are currently protected in SMMNRA. Additionally, the study area contains wildlife corridors essential to providing long-term conservation of the study area's highly diverse ecosystems.

An acceptable boundary for a new unit of the national park system should provide for the inclusion and protection of its primary resources with sufficient surrounding area to provide a proper setting for the resources or to relate a group of resources; and sufficient land for appropriate use and development. Only resources determined both nationally significant and suitable can be considered for a new national park unit.

The regions of the study area determined both nationally significant and suitable for a new unit of the national park system are primarily located in the San Gabriel Mountains and foothills, the Upper Santa Clara River, portions of the Santa Susana Mountains, and the Arroyo Seco area. Conservation of study area lands in these areas would provide protection of nationally significant resources includ-

Long term protection of the high biodiversity associated with the San Gabriel Mountains and foothills, Santa Susana Mountains, and Upper Santa Clara River areas requires consideration of a broad boundary configuration that includes both nationally significant resources and surrounding areas sufficient to maintain connections to other large protected areas.

ing rare habitat and endemic species, diverse geologic formations, archeological resources depicting 10,000 years of human occupation, and national historic landmarks representing nationally significant architecture, science and technology, and development of the American economy.

Long term protection of the high biodiversity associated with the San Gabriel Mountains and foothills, Santa Susana Mountains, and Upper Santa Clara River areas requires consideration of a broad boundary configuration that includes both nationally significant resources and surrounding areas sufficient to maintain connections to other large protected areas. For example, although a small national historic site could be created at Pico Well No.4, this would do little for long-term protection of the wide range of significant natural resources in the Santa Susana Mountains and adjoining landscapes that reflect the area's high biodiversity (Upper Santa Clara River, and San Gabriel Mountains).

San Gabriel Mountains and Foothills

The *San Gabriel Watershed and Mountains Special Resource Study* (NPS 2013f) determined that resources within the San Gabriel Mountains (180,000) and foothills (24,000 acres), including portions of the Upper Santa Clara River watershed (36,000 acres), would be both suitable and feasible as a new national park unit if managed in partnership with existing federal, state, and local entities. The feasibility findings of the *San Gabriel Watershed and Mountains Special Resource Study* were based on continued management of the Angeles National Forest by the U.S. Forest Service (USFS) with the National Park Service as a partner in interpretation, education, and visitor use management. The study's final recommendation was for a new unit of SMMNRA along the San Gabriel River and foothills (approximately 50,000 acres) that would include partnership and technical assistance roles for the NPS throughout the San Gabriel Mountains and watershed to assist the U.S. Forest Service in the long-term protection and interpretation of the area's significant resources (*Appendix H* contains a description of the recommendations from the *San Gabriel Watershed and Mountains Special Resource Study*). Since completion of the *San Gabriel Study* (NPS 2013f), President Obama established the San

Gabriel Mountains National Monument which will be managed by the U.S. Forest Service and consists primarily of areas that were part of the Angeles National Forest, as shown in *Chapter 1: Introduction*, on page 5 (USFS 2014). Consistent with these previous findings and the new national monument dedicated, the Angeles National Forest and San Gabriel Mountains National Monument need not be included in a new unit that would protect significant resources in the Santa Susana Mountains, San Gabriel Mountain foothills, and Arroyo Seco corridor.

Santa Susana Mountains

The Santa Susana Mountains contain nationally significant natural and cultural resources that are not currently represented in the national park system. For example, the north side of the Santa Monica Mountains is influenced by a convergence of montane and desert influences that create rare and unusual plant communities, including some ancient relict plant communities (e.g. big-cone Douglas-fir and canyon live oak). There are also communities at their northern or southernmost limits (e.g. valley oak savanna). Culturally, the Santa Susana Mountains were the location for the birth of the oil industry in southern California. Well No.4, Pico Canyon Oil Field National Historic Landmark, located near Newhall, was the first commercially successful oil well on the west coast of the U.S. Well No. 4. This site is located within Elsmere Canyon Park, managed by the MRCA. The MRCA manages a significant amount of land within SMMNRA and is one of several agencies that work in partnership with NPS through a cooperative management agreement.

Much of the Santa Susana Mountains is undeveloped and several large areas have been protected for conservation and recreational values. This area would be of appropriate size and configuration to protect its significant resources while providing for public enjoyment opportunities (approximately 80,000 acres).

Arroyo Seco

Portions of the Arroyo Seco corridor above the 134 Freeway contain a concentration of resources that are nationally significant and suitable (1,600 acres). These resources include the Rose Bowl NHL, representing the theme

“Expressing Cultural Values - Popular and Traditional Culture;” and the Twenty-five Foot Space Simulator NHL and the Space Flight Operations Facility NHL, both representing the themes “Expanding Science and Technology” and “Man in Space.”

Wildlife Corridors

A wide body of research on regional habitat connectivity has documented the importance of maintaining undeveloped (open space) connections between the Santa Monica Mountains, the San Gabriel Mountains, the Topatopa Mountains, and Sierra Pelona. Opportunities for protecting regional wildlife habitat connecting the Santa Monica Mountains to the Santa Susana Mountains, San Gabriel Mountains and Upper Santa Clara River area would be an important consideration in a new park unit. These connections would be essential to protect the significant resources of a new national park unit in the San Gabriel foothills and Santa Susana Mountains.

The Simi Hills and Conejo Mountain-Las Posas Hills subgeographic areas contain important wildlife corridors that physically connect to the Santa Monica Mountains. If these subgeographic areas were included in the new park unit, (approximately 93,000 acres) the area would be of sufficient size for the long-term protection of key resources and for appropriate use and development of public enjoyment opportunities. It would also create a boundary that would be contiguous with SMMNRA. Given the need for contiguity with SMMNRA, and the importance of these connecting corridors to long-term protection of resources at SMMNRA a boundary adjustment to SMMNRA, as explored further in the costs section and in *Chapter 4: Boundary Adjustment Evaluation*, would allow for a more efficient/feasible management approach.

Although resources in the Verdugo Mountains-San Rafael Hills were found not suitable given that they primarily contain resources already represented in the national park system at SMMNRA, this area would be included because it provides an important link for genetic interchange of plant species between the San Gabriel and Santa Monica mountains. It would also provide excellent public enjoyment opportunities.

Regional wildlife corridors essential to maintaining biodiversity in the study area extend beyond the Rim of the Valley Corridor study area to the Sierra Pelona in the Angeles National Forest and the Topatopa Mountains in the Los Padres National Forest. Although these important connections are beyond the authorized study area, there are opportunities to work in partnership with existing agencies, organizations, and landowners to encourage conservation within these corridor areas.

The total acreage for a new park unit which would include the primary resource (Santa Susana Mountains, San Gabriel Mountain foothills, Upper Santa Clara River area, Arroyo Seco) and connecting wildlife corridors would be approximately 258,600 acres.

Conclusion – Boundary Size and Configuration

Approximately 258,600 acres of land in the study area that are not already within the boundaries of SMMNRA, the Angeles National Forest, or San Gabriel Mountains National Monument are of sufficient size and configuration to protect nationally significant and suitable resources in the San Gabriel Mountain foothills, Upper Santa Clara River watershed, Santa Susana Mountains, and portions of the Arroyo Seco corridor (*Table 3-6: Boundary Configuration – New Park Unit*). Protection of adjacent wildlife/habitat corridors within the study area (Simi Hills, Conejo Mountain-Las Posas Hills, Verdugo Mountains-San Rafael Hills) would ensure long-term protection of the area’s high biodiversity, particularly in the face of ecosystem stressors such as climate change, increased fire-frequency, and urbanization. However, because such a boundary configuration would need to be contiguous to SMMNRA to provide for habitat connectivity, adding these areas to SMMNRA (as opposed to designating a new, separate national park

Table 3-6: Boundary Configuration – New Park Unit

Sub-Geographic Area	Justification	Appx. Acreage
Conejo Mountain-Las Posas Hills	Habitat Connectivity	39,000
San Gabriel Mountain Foothills	Primary Resource	24,000
Santa Susana Mountains	Primary Resource	80,000
Simi Hills	Habitat Connectivity	54,000
Upper Santa Clara River Area	Primary Resource	36,000
Arroyo Seco (partial)	Primary Resource	1,600
Verdugo Mountains-San Rafael Hills	Habitat and Recreational Connectivity	24,000
Total Acreage		258,600

unit) would allow for a more efficient and feasible management approach. This is explored further in the costs and operations section to follow and in *Chapter 4: Boundary Adjustment Evaluation*.

U.S. Forest Service managed areas would not need to be included in a new park unit because the NPS and U.S. Forest Service already have broad authority for cooperative management.

Existing Resource Degradation and Threats to Resources

Despite extensive urbanization and development in the region, the Rim of the Valley Corridor study area contains nationally significant resources with a relatively high degree of integrity. Approximately 84% of the study area lands are protected recreation areas, conserved open spaces, or vacant undeveloped lands. Although certain areas of the study area are degraded or threatened by degradation, restoration opportunities exist to improve these areas through collaborative restoration efforts. For example, the U.S. Army Corps of Engineers is completing a feasibility study to restore an urbanized stretch of the Los Angeles River, creating new riparian areas and recreational opportunities.

Isolated pockets of significant resources also exist within other portions of the study area where extensive urbanization has fragmented natural habitat. The Angeles National Forest and San Gabriel Mountains National Monument contain highly significant resources, however, certain areas are impacted by a variety of factors, including infrastructure, private inholdings, concentrated visitor use, and recreational activities such as off highway vehicle use. River-based recreational activities are extremely popular, and major recreation areas often experience high levels of congestion on busy summer weekends. High use visitor areas have higher incidences of litter, graffiti and other types of vandalism. Some visitors alter river bed geomorphology by creating rock dams for swimming areas. Despite these impacts, the San Gabriel Mountains support high levels of biodiversity. In addition, within the study area, approximately 12,000 acres of San Gabriel Mountains National Monument is designated wilderness.

Regional population growth and future development pose a threat to significant resources and future recreational opportunities within the study area. Existing and proposed urban development, including transportation projects, water and sewer projects, and new housing threaten sensitive plant communities, wildlife corridors, and archeological sites. Private development of residences along ridgelines and oceanfront areas intrude on scenic vistas.

Recent studies of large mammals in the Santa Monica Mountains have demonstrated that many species have difficulty crossing major freeways such as U.S. Highway 101, resulting in fatalities and inbreeding in the local mountain lion population. Future development proposals will likely continue to degrade resource integrity and further impact wildlife corridors, resulting in additional adverse effects on the area's high biodiversity. Without careful planning and protection, important wildlife corridors between the Santa Monica Mountains and the San Gabriel and Topatopa Mountains could be lost.

Urban development and increased fire frequency make native vegetation more vulnerable invasion by nonnative species. The most vulnerable locations in SMMNRA include areas along roads and trails and disturbed landscapes. In SMMNRA, nonnative plant colonization is also more prevalent in grasslands and riparian areas compared to coastal sage scrub and chaparral communities (Stoms et al. 2012).

Impacts from climate change may increase or extend droughts, threatening area water supply, including for wildlife. Rising temperatures and altered rainfall may cause additional stress on native habitat and increase air pollution. Such changes could cause native and endemic plants to move northward and/or toward the coast, following the shifts in their preferred climate. Native and endemic plants in southern California could move higher in elevation into cooler but highly vulnerable refugia. For example, the San Gabriel Mountains are predicted to be an area for native plants and animals seeking refuge as climate change begins to impact their habitat (Loarie et al. 2008). Enhanced protection of these areas and their connections to other significant habitat areas in the region may help to offset future habi-

tat stressors from climate change. Protecting large landscapes and corridors through which plants and animals can move to such refugia, and assisting plants and animals in reestablishing themselves in new regions, may help conserve biodiversity.

Threats from environmental contamination of specific parcels are likely to be found in some portions of the study area given the diversity of land uses. For example, the Santa Susana Field Laboratory located near the crest of the Simi Hills at the western border of the San Fernando Valley is the site of a former rocket engine test and nuclear research facility. The 2,849-acre field laboratory is currently the focus of a comprehensive environmental investigation and cleanup program, conducted by Boeing, the U.S. Department of Energy and the National Aeronautics and Space Administration, and overseen by the Department of Toxic Substances Control. Given the thousands of parcels of land that exist throughout the study area, parcel level evaluation of specific environmental contamination is not within the scope of this study. Any land acquisition would be dependent on future assessment to determine whether proposed acquisitions would meet NPS and Department of the Interior standards. The Department of the Interior discourages acquisition of property contaminated with hazardous substances. Further, this policy states that contaminated lands should not be acquired unless otherwise directed by Congress, court order, or as determined by the Secretary of the Interior. Any property under consideration for NPS acquisition would therefore be assessed for environmental contaminants. If contamination exists, further evaluation would take place to determine the feasibility of managing the land given the potential transfer of liability and costs for remediation and/or restoration.

Conclusion - Existing Resource Degradation and Threats to Resources

Despite existing resource impacts and threats from urbanization and development, approximately 84% of the study area contains protected or unprotected undeveloped lands, which contain, or have the potential to contain, significant resources of high integrity. Because some areas of the study area have resource degradation or threats that would preclude direct NPS management, these areas may not

be considered for NPS land acquisition should they be included in a new national park unit. In some cases, opportunities exist to improve degraded areas through collaborative restoration efforts.

Social and Economic Impacts

Designation of a new national park unit within some portion of the study area would likely have a wide range of economic and social impacts on the area. Most impacts would be beneficial. The designation of national parks typically provides an economic benefit to the surrounding community.

Economic Impacts of National Park Units

In 2010, the national park system received 281 million recreation visits, where visitors spent \$12.13 billion in local gateway regions (areas within 60 miles of the park). Visitors staying outside the park in motels, hotels, cabins and bed and breakfast accommodations accounted for 56% of the total spending. Of this spending, 50% was spent on lodging and meals, 19% on gas and local transport, 10% on amusement, 8% on groceries, and 13% for other retail purchases. This spending contributed to the national economy with 258,400 jobs, \$9.8 billion in labor income, and 16.6 billion in value added in 2010 (NPS 2011).

Combining local impacts across all parks, 156,280 jobs, \$4.68 billion in labor income, and \$7.65 billion value, was added in 2010. Nationally, lodging, restaurants, retail trade, and amusements, represented the four local economic sectors most directly affected by non-local visitor spending. This visitor spending supported 43,160 jobs in restaurants and bars, 32,000 jobs in lodging sectors, 23,000 jobs in retail and wholesale trade, and 18,560 jobs in amusements in 2010 (NPS 2011).

Beyond visitor spending, national park designation also provides local and national economic benefit through the NPS payroll. In 2010, over 26,000 individuals served as employees in the National Park Service with a total payroll of \$1,709 million in wages, salaries and payroll benefits. The total impacts of park payrolls were \$1.95 billion in labor income, \$2.16 billion in value added, and 32,407 jobs in 2010. These data include the induced effects of the spending of NPS wages and salaries in the local region. The impacts of the park payroll

Table 3-7: 2010 Payroll Impact of Santa Monica Mountains NRA

	Park Payroll			Impacts of Park Payroll		
	Salary (\$000's)	Payroll Benefits (\$000's)	NPS Jobs	Total Jobs	Labor Income (\$000's)	Value Added (\$000's)
Santa Monica Mountains NRA	6,027	1,726	123	149	9,017	10,039

Source: *Economic Benefits to Local Communities from National Park Visitation and Payroll, 2010*

Table 3-8: 2011 Spending and Economic Impact of Visitors to Santa Monica Mountains NRA

	Public Use Data		Visitor Spending 2011			Impacts of Non-Local Visitor Spending	
	2011 Recreation Visits	2011 Overnight Stays	All Visitors (\$000's)	Non-Local Visitors (\$000's)	Jobs	Labor Income (\$000's)	Value Added (\$000's)
Santa Monica Mountains NRA	609,636	144	26,192	17,258	242	9,013	15,833

Source: *Economic Benefits to Local Communities from National Park Visitation, 2011*

In 2011, Santa Monica Mountains National Recreation Area supported 242 jobs and \$9 million in labor income. Visitor spending for FY 2011 was \$26.2 billion, of which \$17.2 billion came from non-local visitors. In payroll impact, SMMNRA provided \$9 billion in labor income and \$10 billion in added value.

on the national economy were \$2.41 billion in labor income, \$2.96 billion in value added, and 41,700 jobs. The combined impact of non-local visitor spending and NPS payroll-related spending yielded a total impact of 300,000 jobs nationally of which 189,000 are in the local regions around national parks (NPS 2011).

In 2011, Santa Monica Mountains National Recreation Area supported 242 jobs and \$9 million in labor income (*Table 3-7: 2010 Payroll Impact of Santa Monica Mountains NRA*). Visitor spending for FY 2011 was \$26.2 billion, of which \$17.2 billion came from non-local visitors (*Table 3-8: 2011 Spending and Economic Impact of Visitors to Santa Monica Mountains NRA*)(NPS 2013f). In payroll impact, SMMNRA provided \$9 billion in labor income and \$10 billion in added value (NPS 2010).

Other Potential Impacts

Other socioeconomic concerns identified during the public scoping process included the potential effects of a park designation on private lands and existing regulatory authorities. The establishment of a new national park unit in the study area would not necessarily establish new regulatory or land use authority over local governments or private lands within the boundary. In Santa Monica Mountains National Recreation Area (SMMNRA), the NPS has proprietary jurisdiction. In proprietary jurisdiction parks, the state government has not ceded the state's jurisdiction over the park area to the NPS. The state enforces its law but not federal law.

In proprietary jurisdiction parks lands not owned by NPS are typically regulated by local and state agencies or other federal authorities that have jurisdiction in the area. However, under the 1916 National Park Service Organic Act (16 U.S. Code, Chapter 1), which established the National Park Service), the Secretary of the Interior has broad authority to establish regulations pertaining to other lands within authorized national park unit boundaries. Such regulations are found in 36 Code of Federal Regulations (CFR) Chapter 1. Most regulations pertain to lands under NPS ownership. However, some regulations affect uses within a park unit boundary regardless of ownership. These regulations pertain to the operation of any solid waste disposal site, mineral extraction activities, and the exercise of nonfederal oil and gas rights. To date, the only such regulations that have been applied to such activities within the boundary of SMMNRA are the regulations pertaining to solid waste disposal sites as required by 36 CFR Chapter 1, Part 6. These regulations prohibit the operation of any solid waste disposal site, except as specifically provided for, and govern the continued use of any existing solid waste disposal site within the boundaries of any unit of the National Park System. For example, within SMMNRA, the Sanitation Districts of Los Angeles County obtains a permit from NPS to operate the Calabasas landfill in Agoura Hills.

Although mineral extraction activities currently do not take place in the existing SMMNRA

boundary, NPS regulations pertaining to mineral exploration and development may apply to national park units where prospective operators hold mineral interests, unless or until these interests are purchased by the U.S. government. The purpose of NPS regulations is to implement the NPS Organic Act of 1916 by providing for reasonable protection of park resources and values that may be affected by the exercise of the mineral interests.

Regulations located at 36 CFR Part 9, Subpart B, govern the exercise of nonfederal oil and gas rights within NPS units. “Nonfederal oil and gas rights” are either owned by a state or a private entity. Existing rights either pre-date the establishment of the park or have not been acquired by the United States. These regulations are designed to ensure that activities undertaken pursuant to these rights are conducted in a manner consistent with the purposes for which the NPS and each unit thereof were created. These regulations would primarily apply if NPS were to purchase lands where oil and gas rights are retained by another entity. Oil and gas development is prevalent in portions of the Santa Susana Mountains and Simi Hills.

The extent to which such regulations would affect land uses would be dependent on what is specified in authorizing legislation, and the nature of the activities. Legislation would be required to establish a new unit of the national park system. It should be noted that through any resulting legislation, Congress can make determinations about uses and regulations within specific park units. For example, some national recreation areas are open to mineral leasing if specified resource protection and administrative objectives can be met.

Privately held lands would continue to be regulated by local land use authorities (cities and counties). If local development proposals have the potential to impact park resources SMMNRA staff will provide comments on such projects. Local jurisdictions could choose to use such comments to mitigate or limit the effects of development on SMMNRA resources. Land use planners frequently have the ability to direct the intensity or location of the development toward more durable areas and away from sensitive resources and/or to require setbacks or open space as part of de-

velopment projects. Additional information on regulations related to mineral extraction and an assessment of land use and social and economic impacts related to these regulations is provided in the evaluation of land use impacts in *Chapter 6: Environmental Consequences*.

Conclusion - Social and Economic Impact

The social and economic impacts appear to be largely beneficial and would support the feasibility of an NPS designation in the Rim of the Valley Corridor study area. NPS regulatory authorities would only apply to lands owned and managed by NPS, with the exception of solid waste facilities.

Costs Associated with Operation, Acquisition, Development and Restoration

Costs associated with management of a national park unit include annual operational costs (primarily for staffing) and periodic costs for land acquisition, facility development, and resource management, including restoration. The NPS allocates funds to its park units in two categories—for daily operations (annual operating costs), and for specific, non-recurring projects. Park managers use funding for daily operations to pay for visitor and resource protection, interpretation and education, and facilities operations, among other things. About 80% or more of the park units’ daily operations funds pay for salaries and benefits for staff to carry out these mission components, while the remainder is used for overhead expenses such as utilities, supplies, and training.

Project-related funding supports non-recurring projects such as replacing roofs on park facilities or rehabilitating campgrounds. Project funding also supports natural resource inventory and monitoring programs. In addition to providing the funding for daily operations and projects, the Congress has enacted legislation authorizing park units to collect visitor fees to provide additional funds to use for specified park operations. Visitor fees have been used, for example, to construct roadside exhibits and to rehabilitate facilities.

Park units are also authorized to accept and use monetary and non-monetary donations to meet the purposes of the NPS. Examples include donations from non-profit cooperating associations or friends groups for interpretive

Table 3-9: Operating Budgets for Comparable and Related National Park Units (FY 2012)

National Park Unit	FTE (Full Time Equivalent) Staff	Acres	Annual Visitation	FY2012 NPS Annual Operating Budget
Santa Monica Mountains National Recreation Area	99	156,670	633,054 (NPS lands)	\$8,600,000
Sequoia and Kings Canyon National Parks	312	866,000	1,106,584/591,033	\$16,500,000
Redwoods National and State Parks	118	139,000	352,517	\$8,900,000

Source: NPS 2013f

Table 3-10: Comparative Annual Operational Costs for NPS Roles in the Rim of the Valley Corridor Study Area

New National Park Unit	Boundary Adjustment to SMMNRA	Expanded Partnership Roles
\$8-10 Million (may be less if positions for new park unit are shared with SMMNRA)	\$1.5 – 3.5 Million over existing SMMNRA operational costs (\$8.6 Million in FY2012)	\$400,000-\$1,000,000
Based primarily on current operational levels of park additions.	Additional costs would primarily be for new staff. Many existing positions would support the new SMMNRA. Operating costs would primarily for personnel. Other costs that would come out of the annual operating budget would be related to office space.	Costs would be for 6-12 positions dedicated to providing technical assistance beyond SMMNRA for trail and recreation planning, conservation, preservation, restoration, outreach and educational efforts.

Given the overlap in resource significance, associated management challenges, and the determination that any new national park unit within the area would need to be managed using the same collaborative framework as SMMNRA, adding new areas to SMMRNA would achieve largely the same resource management and public enjoyment objectives as establishing a new national park unit. Simultaneously, it would result in operational cost savings and efficiencies.

exhibits, park literature, new construction, enhancement of wildlife programs, or habitat restoration.

For the purposes of this study, the NPS has developed cost estimates based on the very broad needs typically associated with the annual operational requirements of establishing a new national park unit. For comparison, the costs of expanding the boundary of SMMNRA to include portions of the study area and the costs of expanding existing NPS partnership activities within the study area are also explored.

Operational Costs

Congress provides funding for the NPS through a number of appropriations accounts; the largest is the Operation of the National Park System (ONPS), which funds on an annual basis the management, operations, and maintenance of park areas and facilities and the general administration of each national park unit. Operational costs of national park units vary widely, depending on the amount and type of resources managed, number of visitors, level of programs offered, and many other factors. Operating costs for a partnership park unit or NPS technical/administrative assistance would typically be lower than operating expenses associated with a traditional national park where the NPS alone is responsible for land management and visitor services. *Chapter 5: Alternatives*, explores potential operational costs in more detail for each man-

agement alternative considered in this special resource study.

Table 3-9: Operating Budgets for Comparable and Related National Park Units (FY 2012) provides annual operating costs for existing and related national park units that are comparable in size, acreage, operations, or visitation. Annual operating costs for a new national park unit that would work in partnership with existing agencies in organizations in the area could range from \$8 to \$10 million at operational levels similar to SMMNRA. It should be noted that for new park units to receive full funding, it can often take many years, resulting in a decreased ability to achieve park purposes and management objectives initially. In recent years, where new national park units have been established in close proximity to existing park units, nearby existing national parks have taken on initial management responsibility for the new areas. This allows for additional capacity in planning the establishment of the new park unit. For example, the Tule Lake Unit of World War II Valor in the Pacific Monument (Tulelake, California) established in 2008 is currently operationally supported by the nearby Lava Beds National Monument. Cesar Chavez National Monument, established in 2012, was initially supported by Sequoia and Kings Canyon National Parks. Although positions and management could be shared between SMMNRA and a new park unit, a new national park unit in the Rim of the Valley Corridor would still require its own

Given the high cost of land in Los Angeles and Ventura counties, land acquisition would be targeted.

management plans (as required by NPS *Management Policies 2006*), budgetary systems, and signs/interpretive materials.

As further evaluated in *Chapter 4*, a boundary adjustment that would protect significant resources, associated wildlife corridors, and areas with new opportunities for public enjoyment would be of similar configuration as a new park unit because it would include the Santa Susana and San Gabriel foothills as well as the Upper Santa Clara River areas which rely on conservation of the same regional wildlife corridors. Given the overlap in resource significance, associated management challenges, and the determination that any new national park unit within the area would need to be managed using the same collaborative framework as SMMNRA, adding new areas to SMMNRA would achieve largely the same resource management and public enjoyment objectives as establishing a new national park unit. Simultaneously, it would result in operational cost savings and efficiencies. Therefore, expanding SMMNRA, rather than creating a new national park unit would be a more feasible approach to NPS management.

Annual costs for a boundary expansion including portions of the Rim of the Valley Corridor outside of the U.S. Forest Service managed areas (over 300,000 acres) to protect significant resources, conserve wildlife corridors, and provide new opportunities for public enjoyment could range from \$1 to \$3.5 million over the existing annual operating budget for SMMNRA (\$8.6 million in FY2012), depending on the size of the added areas and the management emphasis identified through implementation plans (*Table 3-10: Comparative Annual Operational Costs for NPS Roles in the Rim of the Valley Corridor Study Area*). Costs would primarily cover additional staffing to provide increased technical assistance to area communities for resource management and recreation planning, law enforcement, maintenance, and outreach. Given the close proximity of the study area to more than 18 million residents, and the significantly high concentration of biodiversity and cultural resources that would be protected, the NPS would be able to achieve a high level of resource protection and public enjoyment opportunities for relatively little additional investment in annual operational costs.

Expanding technical assistance and partnerships in the study area without a boundary adjustment would likely cost an additional \$400,000-\$1,000,000 annually (*Table 3-10: Comparative Annual Operational Costs for NPS Roles in the Rim of the Valley Corridor Study Area*). These annual operating costs would primarily support 6 to 12 positions needed to provide technical assistance to communities, agencies, and landowners for park and open space conservation, trail planning, and resource management. *Chapter 5: Alternatives*, explores potential operational costs in more detail for each management alternative evaluated in this study. Three alternatives are considered in addition to the no action alternative, one that explores expanded NPS partnerships and technical assistance opportunities (cooperative conservation) and two that explore boundary adjustments to SMMNRA. Generally, alternatives that propose boundary adjustments to SMMNRA (alternatives C and D) would cost more than the technical assistance and partnership roles as recommended in alternative B (cooperative conservation). Because it is assumed that the NPS would acquire and manage land in both alternatives C and D, these alternatives would likely require some level of facilities development, maintenance, and management.

Land Acquisition Costs

Land acquisition costs cannot be estimated without more specific proposals for land acquisition. NPS funds for land acquisition are currently very limited, and proposed acquisitions compete for national funds with many other worthy sites. Between 1978 and 2011, the NPS acquired 23,300 acres in SMMNRA, investing over \$163 million in appropriated funds. The majority of lands acquired by NPS (90% or 21,000 acres) were purchased prior to 1996. Since that time land acquisition funding has decreased. In the last ten years, approximately 1,800 acres have been purchased by the NPS. Land values within the study area are generally higher in the Santa Monica Mountains and Los Angeles coastal areas. Currently, land values for larger parcels of undeveloped land in the study area north of the Santa Monica Mountains are lower.

Given the high cost of land in Los Angeles and Ventura counties, land acquisition would be targeted. Over the past thirty years, SMMNRA

has purchased land in this manner. Priorities for land acquisition are identified in a land protection plan which establishes a range of land conservation approaches in addition to direct land acquisition. Subject to available funds and consistent with prior land acquisition efforts at SMMNRA, the NPS would consider land acquisition or land management in specific areas found to be nationally significant, that meet NPS criteria for suitability and feasibility, and where there are interested willing sellers. A land protection plan would identify priorities for land acquisition. However, given the number of parcels that would be included in the boundary adjustment, the land protection plan could be complex and challenging to update on a regular basis.

Collaborative management between the NPS and other land management agencies provides more advantages for obtaining land acquisition funding, a highly competitive process that requires considerable public and political support. Funding could also be obtained from multiple sources over time for targeted lands as those areas become available for acquisition. For example, the Santa Monica Mountains Conservancy (SMMC) and the San Gabriel and Lower Los Angeles Rivers and Mountains Conservancy (RMC) currently have authority to purchase land in the study area for conservation and recreational purposes. Within any alternative considered in this study, these agencies would continue to purchase land to meet their individual agency objectives.

Development Costs

Development costs for NPS units vary widely, depending on existing conditions and facilities and the types of conditions and facilities desired. New national park units frequently invest funds to inventory and document park resources, for developing management or treatment plans and educational/interpretive materials for these resources, and for developing or improving facilities for visitors and for park operations.

Because the study area contains visitor serving parks, open space, and trails in many areas, after establishment visitors would primarily use these sites and facilities. Over time, as land is acquired, project specific costs for new or fu-

ture facilities such as trails, exhibits, and other supporting visitor facilities would be identified through implementation planning. If Congress were to authorize a new park unit, the NPS would prepare implementation plans to guide future management of the area and to provide more detailed cost estimates for both operations and facility development. Specific costs would be dependent on management priorities and approaches identified through implementation planning and the location, size and configuration of future land acquisition.

Through cooperative management agreements, the NPS could also share operational facilities with existing agencies or share costs for new facilities as deemed necessary. Park office space already exists at SMMNRA headquarters and at several other sites in the area. Opportunities exist to share or lease additional space with partner agencies to accommodate to new positions that would support planning and management activities in the boundary adjustment area.

Conclusion - Costs

The NPS finds that the creation of a new, separate national park unit is feasible using the existing collaborative partnership-based park model exemplified by SMMNRA. However, a new park unit would cost considerably more than expanding existing SMMNRA park operations and extending technical assistance to the broader region. Although positions and resources could be shared or supported by SMMNRA, the new park unit would require its own budgetary systems, signs, and implementation plans. Given the high cost of land in Los Angeles and Ventura counties, a targeted land acquisition approach would be feasible. Land acquisition would only be considered where landowners have expressed interest in selling.

Public Interest and Support

The NPS provided opportunities for public and stakeholder involvement in 2010 (public scoping) and 2012 (preliminary findings and alternative concept scoping). Public comments overall were supportive of additional NPS involvement in the Rim of the Valley Corridor study area to protect significant resources, conserve regional wildlife corridors, and to improve trail systems such as the Rim

The creation of a new national park unit is not feasible, in comparison to the resource management and operational efficiencies afforded by a boundary adjustment to SMMNRA.

of the Valley Trail. Some concerns were raised regarding costs and potential effects of a new NPS designation on existing agencies, recreational uses, and property owners.

The NPS also held meetings with federal, state, and local agencies responsible for conservation and recreation within the study area. These agencies have been supportive of a National Park Service management role in the study area. The Santa Monica Mountains Conservancy and California State Parks have expressed continuing support for the opportunity to expand the current cooperative management agreement between these agencies and the NPS into the Rim of the Valley Corridor area. Agencies and local governments within the area also stressed the value of having a federal partner to leverage funds to conserve lands for open space and recreation.

Public Scoping Comments

During public scoping, many public comments expressed support for an expanded NPS role within the Rim of the Valley Corridor study area to provide coordination for the many local, regional, and state agencies that manage recreation and open space in the area. Although many commenters supported adding to SMMNRA, others felt that the study should consider a separate designation for resources in the San Gabriel and Santa Susana Mountains. Some commenters also supported a new NPS designation or expansion of SMMNRA only if it would not result in new restrictions on existing recreational uses such as mountain biking. Many comments emphasized the potential for the NPS to leverage more resources for the region.

Concerns about an increased NPS presence in the study area included questions about potential reductions of investment in current conservation efforts in the Santa Monica Mountains and concerns about the overall costs of SMMNRA expansion and/or costs for a new park unit. Some commenters were concerned that NPS designations in the Rim of the Valley Corridor would invoke limits on the ability of private landowners to expand or develop their property, while others expressed concern that NPS designation would limit the range of recreational uses allowed.

Comments on Preliminary Findings and Alternative Concepts

In 2012, preliminary findings and alternative concepts were presented to the public. The alternative concepts presented SMMNRA boundary adjustment options and partnership opportunities to protect significant resources in the study area and to provide for public enjoyment. The NPS received over 5,000 comment letters, most of which supported the broadest possible boundary adjustment to SMMNRA within the study area. Although some individuals and landowners expressed concerns about possible loss of local control or restrictions on their ability to carry out necessary functions, most governmental and private respondents, including ten Congressional representatives, the Santa Monica Mountains Conservancy, California State Parks, Los Angeles County Department of Regional Planning, and several local communities (Moorpark, Glendale, Santa Clarita, City of Los Angeles) supported one of the proposed boundary adjustment alternatives or a combination thereof. There was also considerable support for the partnership approaches for wildlife habitat linkages that extend beyond the study area.

Concerns about the preliminary alternatives were raised regarding potential impacts on utility corridors and sanitation district facilities. Some commenters also supported the no action alternative because of concerns about potential effects on local land use decisions and the potential costs of a boundary expansion. A few commenters expressed concern that an expanded SMMNRA would reduce overall funding for land acquisition in the Santa Monica Mountains or other national park units. These concerns are addressed in the alternatives as presented in *Chapter 5: Alternatives*.

Conclusion – Public Interest and Support

Public outreach for this study, including numerous meetings with public officials and land management organizations, has demonstrated significant public interest and support for the NPS to play a collaborative role in the study area through a boundary adjustment to SMMNRA or establishment of a new national park unit.

Table 3-11: Feasibility Factors (New National Park Unit) - Summary of Findings

Criteria	Findings
Land use, current and potential site uses, ownership patterns, planning and zoning	<p>Yes. The study area includes a diverse array of land uses from large, undeveloped natural areas to dense urban corridors. Land ownership is also complex. Many federal, state, and local agencies and private landowners own and manage land within the study area. Cooperative/collaborative management as exemplified at SMMNRA would be a feasible NPS management approach given the complex land use and ownership patterns within the study area.</p> <p>Given the size and scale of the Angeles National Forest and San Gabriel National Monument, the NPS has determined that continued U.S. Forest Service management would be necessary and desirable. However, collaborative management between the NPS and U.S. Forest Service could occur through cooperative management agreements under current authorities.</p>
Access and public enjoyment potential	<p>Yes. There is considerable potential for additional public access and enjoyment within the study area. The study area contains major transportation corridors and public transportation systems that provide access to area resources. Existing opportunities for a wide variety of recreational uses exist throughout the study area and there is ample opportunity for future development of more recreational opportunities and improved access. A new national park unit could build on existing open space, recreational and trail systems and provide could new opportunities to better connect parks and open space, complete trail systems, and provide interpretive and educational opportunities associated with the many cultural and natural resource types represented in the study area.</p> <p>The study area is within nation's the second largest metropolitan area and provides many opportunities to provide a national park experience for new audiences and communities that currently lack opportunities to access local recreational resources.</p>
Sufficient boundary size and configuration	<p>No. Approximately 258,600 acres of land in the study area that are not already within the boundaries of SMMNRA or the Angeles National Forest are of sufficient size and configuration to protect nationally significant and suitable resources in the San Gabriel Mountain foothills, Upper Santa Clara River watershed, Arroyo Seco, Santa Susana Mountains. Inclusion of adjacent wildlife corridors within the study area (Simi Hills and Conejo Mountain – Las Posas Hills, Verdugo Mountains-San Rafael Hills) would ensure long-term protection of the area's high biodiversity, particularly in the face of ecosystem stressors such as climate change, increase fire-frequency, and urbanization. However, because such a boundary configuration would be contiguous to SMMNRA to provide for habitat connectivity, adding these areas to SMMNRA (as opposed to designating a new, separate national park unit) would allow for a more efficient management approach.</p> <p>The Angeles National Forest and San Gabriel Mountains National Monument would not need to be included in a new park unit, as the NPS and U.S. Forest Service have broad authority for authority for cooperative management to achieve mutual objectives through cooperative management agreements.</p>
Existing resource degradation and threats to resources	<p>Yes. Despite existing resource impacts and threats from urbanization and development, approximately 84% of the study area contains protected or unprotected undeveloped lands. A large portion of this area encompasses significant resources of high integrity. Although certain areas of the study area are degraded or threatened by degradation, opportunities exist to improve these areas through collaborative restoration efforts.</p>
Social and economic impacts	<p>Yes. The social and economic impacts appear to be largely beneficial and would support the feasibility of an NPS designation within the Rim of the Valley Corridor study area.</p>
Costs associated with acquisition, development, restoration and operation	<p>No. The creation of a new, separate national park unit would be feasible using the existing collaborative partnership-based park model exemplified by SMMNRA. However, the costs of a new national park unit are not feasible when compared to the lesser costs of expanding the existing SMMNRA boundary, which is also under consideration in this special resource study.</p>

Overall Feasibility Conclusion

There is considerable potential for additional public access and enjoyment within the study area. Opportunities for a wide variety of recreational uses already exist in the many trails, historic sites, and parks located throughout the study area, and there is ample opportunity for land conservation and future development of more recreational opportunities and improved access, particularly for those communities that are deficient in opportunities to access to parks and open space. Given the complexity of land use and ownership within the study area a new park unit would only be feasible using a collaborative management approach that retains with existing ownership patterns and regulatory authorities as exemplified by current SMMNRA management.

The creation of a new national park unit is not feasible, in comparison to the resource management and operational efficiencies afforded by a boundary adjustment to SMMNRA (*Table 3-11: Feasibility Factors (New National Park Unit) - Summary of Findings*). Many of the significant resources within the study area augment the national significance of SMMNRA and provide habitat connectivity essential for long-term preservation of the significant resources within the Santa Monica Mountains, thus warranting physical connection to the SMMNRA boundary and a seamless inter-agency management approach.

Need for Direct NPS Management

The need for direct NPS management is the final criterion for a favorable recommendation for a proposed new unit of the national park system. Only areas that are determined signifi-

cant, suitable, and feasible as a new national park unit are evaluated for this final criterion. This criterion requires a finding that NPS management would be superior to other potential alternative management arrangements by other entities. Because a boundary adjustment was found to be a more feasible option for NPS management within the study area, this criterion need not be evaluated.

Overall Conclusion – New National Park Unit

The study finds that the Rim of the Valley Corridor contains nationally significant resources suitable for inclusion in the national park system. While the study found that multiple feasibility factors relevant to establishing a new unit of the national park system could be met, the assessment of boundary adjustment criteria in the following chapter identified resource management and operational efficiencies that could not be achieved through the establishment of a new unit. It was recognized that a new unit would not compare favorably with a Santa Monica Mountains National Recreation Area boundary adjustment in terms of costs, the duplication of management structures, and the complexity involved in operating two similar but independent units. The study team concludes that it would not be feasible to establish a new partnership unit that would have similar purposes to the existing park, and adjacent to or within close proximity to it. A boundary adjustment to Santa Monica Mountains NRA would be more feasible. Therefore, the study area does not meet the feasibility criterion and is not eligible for designation as a new unit of the national park system.

