

5. Environmental Analysis

5.5 CULTURAL RESOURCES

Cultural resources comprise paleontological, archaeological, and historical resources. Paleontological resources are the fossilized remains of plants and animals. Archaeology is the branch of paleontology that studies human artifacts, such as places, objects, and settlements that reflect group or individual religious, cultural, or everyday activities. Historical resources include sites, structures, objects, or places that are at least 50 years old and are significant for their engineering, architecture, cultural use or association, etc. In California, historic resources cover human activities over the past 12,000 years. Cultural resources provide information on scientific progress, environmental adaptations, group ideology, or other human advancements. This section of the draft program environmental impact report (PEIR) evaluates the potential for implementation of the Countywide Plan (proposed Project) to impact cultural resources in the portions of San Bernardino County under the County's land use jurisdiction. The analysis in this section is based in part on the following reports:

- *Cultural Resources Technical Report for the San Bernardino Countywide Plan, San Bernardino County, California*, SWCA Environmental Consultants, February 2019.
- *Draft Paleontological Resources Technical Report for the County of San Bernardino General Plan Update, San Bernardino County, California*, SWCA Environmental Consultants, June 2018.

Complete copies of these studies are in the Technical Appendices of this Draft EIR (Appendices E and F)

5.5.1 Environmental Setting

5.5.1.1 REGULATORY BACKGROUND

Federal Regulations

Historical and Archaeological Resources

National Historic Preservation Act

The National Historic Preservation Act of 1966 (NHPA) coordinates public and private efforts to identify, evaluate, and protect the nation's historic and archaeological resources. The act authorized the National Register of Historic Places, which lists districts, sites, buildings, structures, and objects that are significant in American history, architecture, archaeology, engineering, and culture.

Section 106 (Protection of Historic Properties) of the NHPA requires federal agencies to take into account the effects of their undertakings on historic properties. Section 106 Review ensures that historic properties are considered during federal project planning and implementation. The Advisory Council on Historic Preservation, an independent federal agency, administers the review process with assistance from state historic preservation offices.

National Register of Historic Places

The National Register of Historic Places was established by the NHPA of 1966 as "an authoritative guide to be used by Federal, State, and local governments, private groups and citizens to identify the Nation's cultural

5. Environmental Analysis

CULTURAL RESOURCES

resources and to indicate what properties should be considered for protection from destruction or impairment.” The NRHP recognizes properties that are significant at the national, state, and local levels. To be eligible for listing in the NRHP, a resource must be significant in American history, architecture, archaeology, engineering, or culture. Districts, sites, buildings, structures, and objects of potential significance must also possess integrity of location, design, setting, materials, workmanship, feeling, and association.

A property is eligible for the NRHP if it is significant under one or more of the following criteria:

Criterion A: It is associated with events that have made a significant contribution to the broad patterns of our history;

Criterion B: It is associated with the lives of persons who are significant in our past;

Criterion C: It embodies the distinctive characteristics of a type, period, or method of construction, or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components may lack individual distinction; and/or

Criterion D: It has yielded, or may be likely to yield, information important in prehistory or history.

Archaeological Resources Protection Act

The Archaeological Resources Protection Act (ARPA) of 1979 regulates the protection of archaeological resources and sites on federal and Indian lands. The ARPA regulates authorized archaeological investigations on federal lands; increased penalties for looting and vandalism of archaeological resources; required that the locations and natures of archaeological resources be kept confidential in most cases. In 1988, amendments to the ARPA included a requirement for public awareness programs regarding archaeological resources (NPS 2018).

Native American Graves Protection and Repatriation Act

The Native American Graves Protection and Repatriation Act (NAGPRA) is a federal law passed in 1990 that mandates museums and federal agencies to return certain Native American cultural items—such as human remains, funerary objects, sacred objects, or objects of cultural patrimony—to lineal descendants or culturally affiliated Indian tribes.

Paleontological Resources

Paleontological Resources Preservation, Omnibus Public Lands Act, Public Law 111-011, Title VI, Subtitle D (PRPA), 2009

This legislation directs the Secretaries of the U.S. Department of the Interior (USDI) and U.S. Department of Agriculture (USDA) to manage and protect paleontological resources on federal land using “scientific principles and expertise.” To formulate a consistent paleontological resources management framework, the Paleontological Resources Preservation Act (PRPA) incorporates most of the recommendations from the report of the Secretary of the Interior titled “Assessment of Fossil Management on Federal and Indian Lands” (USDI, 2000). In passing the PRPA, Congress officially recognized the scientific importance of paleontological resources on some federal lands by declaring that fossils from these lands are federal property that must be

5. Environmental Analysis CULTURAL RESOURCES

preserved and protected. The PRPA codifies existing policies of the Bureau of Land Management (BLM), National Park Service (NPS), U.S. Forest Service (USFS), Bureau of Reclamation, and U.S. Fish and Wildlife Service (USFWS), and provides the following:

- Uniform criminal and civil penalties for illegal sale and transport, and theft and vandalism of fossils from federal lands.
- Uniform minimum requirements for paleontological resource-use permit issuance (terms, conditions, and qualifications of applicants).
- Uniform definitions for “paleontological resources” and “casual collecting.”
- Uniform requirements for curation of federal fossils in approved repositories.

Federal Land Policy and Management Act of 1976

The Federal Land Policy and Management Act (FLPMA) of 1976 (43 United States Code [USC] 1712[c], 1732[b]); sec. 2, Federal Land Management and Policy Act of 1962 [30 USC 611]; Subpart 3631.0 et seq.), Federal Register Vol. 47, No. 159, 1982, does not refer specifically to fossils. However, “significant fossils” are understood and recognized in policy as scientific resources. Permits, which authorize the collection of significant fossils for scientific purposes, are issued under the authority of FLPMA. Under FLPMA, federal agencies are charged to:

- Manage public lands in a manner that protects the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, archaeological, and water resources, and, where appropriate, preserve and protect certain public lands in their natural condition (Section 102 [a][8] [11]).
- Periodically inventory public lands so that the data can be used to make informed land-use decisions (Section 102[a][2]).
- Regulate the use and development of public lands and resources through easements, licenses, and permits (Section 302[b]).

The National Environmental Policy Act (NEPA) of 1969

The National Environmental Policy Act of 1969 (NEPA), as amended (Public Law [PL] 91-190, 42 USC 4321-4347, January 1, 1970, as amended by PL 94-52, July 3, 1975, PL 94-83, August 9, 1975, and PL 97-258 § 4(b), Sept. 13, 1982) recognizes the continuing responsibility of the federal government to “preserve important historic, cultural, and natural aspects of our national heritage...” (Sec. 101 [42 USC § 4321]) (#382). With the passage of the PRPA, paleontological resources are considered a significant resource and it is therefore now standard practice to include paleontological resources in NEPA studies in all instances where there is a possible impact.

5. Environmental Analysis

CULTURAL RESOURCES

Antiquities Act of 1906

The Antiquities Act of 1906 prohibits the removal and/or damaging of objects of antiquity on lands owned or controlled by the United States. Several federal agencies have interpreted “objects of antiquity” in this Act to include fossils; permits to collect fossils on lands administered by federal agencies are authorized under this Act.

State Regulations

Historical and Archaeological Resources

California Public Resources Code

Archaeological, paleontological, and historical sites are protected under a wide variety of state policies and regulations in the California Public Resources Code (PRC). In addition, cultural and paleontological resources are recognized as nonrenewable resources and receive protection under the PRC and CEQA.

PRC Sections 5020 to 5029.5 continued the former Historical Landmarks Advisory Committee as the State Historical Resources Commission. The commission oversees the administration of the California Register of Historical Resources and is responsible for designating State Historical Landmarks and Historical Points of Interest.

PRC Sections 5079 to 5079.65 define the functions and duties of the Office of Historic Preservation (OHP), which administers federal- and state-mandated historic preservation programs in California as well as the California Heritage Fund.

PRC Sections 5097.9 to 5097.991 provide protection to Native American historical and cultural resources and sacred sites; identify the powers and duties of the Native American Heritage Commission (NAHC); require that descendants be notified when Native American human remains are discovered; and provide for treatment and disposition of human remains and associated grave goods.

Two additional state laws pertaining to tribal cultural resources—Senate Bill 18 and Assembly Bill 52—are described in Section 5.17, *Tribal Cultural Resources*, of this DEIR.

California Register of Historical Resources

A resource, either an individual property or a contributor to a historic district, may be listed in the CRHR if the State Historical Resources Commission determines that it meets one or more of the following criteria, which are modeled on NRHP criteria.

Criterion 1: It is associated with events that have made a significant contribution to the broad patterns of California’s history and cultural heritage.

Criterion 2: It is associated with the lives of persons important in our past.

Criterion 3: It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.

5. Environmental Analysis CULTURAL RESOURCES

Criterion 4: It has yielded, or may be likely to yield, information important in history or prehistory.

California Health and Safety Code

California Health and Safety Code Section 7050.5 requires that if human remains are discovered within the project site, disturbance of the site shall halt and remain halted until the coroner has investigated the circumstances, manner, and cause of any death, and the recommendations concerning the treatment and disposition of the human remains have been made to the person responsible for the excavation, or to his or her authorized representative. If the coroner determines that the remains are not subject to his or her authority and if the coroner recognizes or has reason to believe the human remains to be those of a Native American, he or she shall contact, by telephone within 24 hours, the Native American Heritage Commission.

Paleontological Resources

Public Resources Code (PRC) Section 5097.5

Requirements for paleontological resource management are included in the PRC Division 5, Chapter 1.7, Section 5097.5, and Division 20, Chapter 3, Section 30244, which states:

No person shall knowingly and willfully excavate upon, or remove, destroy, injure or deface any historic or prehistoric ruins, burial grounds, archaeological or vertebrate paleontological site, including fossilized footprints, inscriptions made by human agency, or any other archaeological, paleontological or historical feature, situated on public lands, except with the express permission of the public agency having jurisdiction over such lands. Violation of this section is a misdemeanor.

These statutes prohibit the removal, without permission, of any paleontological site or feature from lands under the jurisdiction of the state or any city, county, district, authority, or public corporation, or any agency thereof. As a result, local agencies are required to comply with PRC 5097.5 for their own activities, including construction and maintenance, as well as for permit actions (e.g., encroachment permits) undertaken by others. PRC Section 5097.5 also establishes the removal of paleontological resources as a misdemeanor, and requires reasonable mitigation of adverse impacts to paleontological resources from developments on public (state, county, city, and district) lands.

5.5.1.2 NATURAL SETTING

The natural setting of each of the County's four regions is briefly summarized; for further discussion, see Chapter 4, *Environmental Setting*, of this DEIR.

Valley Region

The Valley Region is 434 square miles or about 2 percent of the County and consists mainly of valleys and foothills. It is in the Upper Santa Ana River Valley and about 64 percent developed. Elevations range from about 700 to 4,000 feet above mean sea level (amsl). The Valley Region has a Mediterranean climate, with hot

5. Environmental Analysis

CULTURAL RESOURCES

and dry summers and cool winters. Nonnative grassland is the most common vegetation type in undeveloped areas of the region.

Mountain Region

The Mountain Region spans 834 square miles in the southwest part of the County, about 4 percent of the county, and covers the San Bernardino Mountains and eastern San Gabriel Mountains. Elevations range up to 11,500 feet amsl. The climate consists of warm summers and cold winters. Approximately 4 percent of the region is developed. The most common categories of vegetation in the region are pine forest and woodland, and chaparral scrub.

North Desert Region

The North Desert region spans 77 percent of the county (15,389 square miles); it generally lies between 2,000 and 5,000 feet amsl and is characterized by mountain ranges and hills that are partially buried and separated by broad alluvial basins. Approximately 2 percent of the region is developed. The climate varies by elevation, consisting of warm to hot summers and cool to cold winters. The most abundant vegetation type is Sonoran and Mojavean Desert Scrub dominated by small to moderate-sized shrubs.

East Desert Region

The East Desert Region encompasses 3,298 square miles, or 17 percent of the County, mostly in the south-central part of the County. The region is characterized by mountain ranges and hills separated by broad alluvial valleys. Approximately 4 percent of the East Desert Region is developed. The climate consists of hot, dry summers accompanied by mild to cold winters. The most abundant vegetation type is Sonoran and Mojavean Desert Scrub dominated by small to moderate-sized shrubs.

5.5.1.3 CULTURAL SETTING

Prehistoric Chronology

This prehistoric overview is structured using the latest Mojave Desert culture history. The framework is thus divided into four major periods: Pleistocene, Early Holocene, Middle Holocene, and Late Holocene. The Mojave Desert culture area encompasses the entire county and is considered the most appropriate for a countywide summary. The summary of prehistoric chronology is described further in the Cultural Resource Technical Report (see Appendix E to this DEIR).

- **Pleistocene Epoch/Paleoindian Period (approx. 10,000–8,000 BC).** The earliest broadly accepted cultural complex in the Mojave Desert is the Clovis Complex. The hallmark artifacts of this complex are large, lance-shaped stone tools with fluting used to thin and flatten the base for attachment to a handle. Paleoindian populations consisted of small, mobile groups that hunted and gathered near permanent sources of water such as lakes.
- **Early Holocene Epoch/Lake Mojave Complex (approx. 8,000–6,000 BC).** During the early Holocene Epoch the Mojave Desert became warmer and drier, and preexisting rain-filled lakes dried up, thus requiring

5. Environmental Analysis CULTURAL RESOURCES

a more diversified subsistence strategy. Stone artifacts from the Early Holocene, known as Lake Mojave Complex, are recognized by the heavy, stemmed projectile points.

- **Middle Holocene Epoch/Pinto Complex (approx. 7,000–3,000 BC).** The climate of the Mojave Desert continued warming and drying during this period. The climate became hotter and drier still between about 3,000 and 2,000 BC; there appears to have been little human occupation in much of the Mojave during that time. Artifacts from the Middle Holocene, also known as Pinto Complex, are described in the CRTR (Appendix E to this DEIR).
- **Late Holocene Epoch (approx. 2,000 BC to Contact).** The Mojave Desert climate cooled and moistened somewhat to conditions similar to those of today. Artifacts from approximately 2,000 BC to 200 AD, known as Gypsum Complex, are characterized by dart-point–sized projectile points; knives, flake scrapers, and T-shaped drills are also common. Manos and milling stones are common, and the mortar and pestle were also introduced during this period.¹ Bows and arrows began to be used at about AD 200.

Ethnographic Overview

San Bernardino County was historically home to several different indigenous groups. Ethnographic boundaries in this part of southern California are loosely defined because of the highly mobile nature of desert and mountain settlement strategies and the variety of alternatives presented by previous researchers.

Serrano/Vanyume

The Serrano people once occupied the Mountain, North Desert, and East Desert Regions of San Bernardino County. The Serrano language is in the Takic family of Uto-Aztecan languages. The Vanyume lived in the Mojave Desert near the Mojave River. Very little is known of the Vanyume-speaking people because the Spanish missionaries greatly disrupted the group between the early 1820s and 1834, and the group was considered extinct by 1900. Some Serrano were relocated to Mission San Gabriel in the 19th century. Some surviving Serrano Indians live on the Morongo Indian Reservation and San Manuel Band of Mission Indians Reservation.

Some surviving Vanyume have been found via genealogical and DNA research and are part of the San Fernando Band of Mission Indians.

Most Serrano lived in small villages located near water sources. The Serrano economy consisted of subsistence hunting and collecting plant goods, with occasional fishing. Shell, wood, bone, horn, stone, plant materials, animal skins, and feathers were used for making money, baskets, blankets, mats, nets, and bags. The Serrano made pottery and used it daily to carry and store water or foodstuffs.

Kawaiisu

The Kawaiisu were mobile hunter-gatherers who primarily resided in a core area in the southern Sierra Nevada and Tehachapi Mountains and made frequent forays into the Mojave Desert in the northwestern portion of the County's North Desert Region. Linguistically, Kawaiisu is a part of the Uto-Aztecan language family.

¹ A mano is a grinding stone slid back and forth by hand against a stone slab; by contrast, a pestle is rotated by hand inside a mortar.

5. Environmental Analysis

CULTURAL RESOURCES

Dietary staples for the Kawaiisu included piñon, juniper, yucca, chia, wild rice, sunflower, buckwheat, and screwbean. Deer was a major source of meat for Kawaiisu living in the mountains, and hunters exploited antelope and bighorn sheep on the desert floor. Basket making was an important tradition among the Kawaiisu, who used baskets for food collecting, processing, and storing. During the winter months, the Kawaiisu lived in *tomo-kahni*, which were circular, aboveground structures with vertical and transverse poles bound together and covered with brush, bark, and tule mats. The Kawaiisu practiced a distinctive style of multicolored rock art.

Cahuilla

The Cahuilla inhabited the eastern portion of the Valley Region, the southeastern part of the Mountain Region, and the southern portion of the East Desert Region. The Cahuilla language is part of the Takic branch of the Uto-Aztecan language family.

Key plant foods included acorns, screwbean and honey mesquite, piñon nuts, prickly-pear cactus fruit and leaves, and yucca blossoms and stalks. The Cahuilla had adopted limited agricultural practices for growing beans, squash, and corn prior to Euro-American contact. Hunters used bow and arrow, traps, nets, slings, and blinds for land mammals and birds, and nets for fish when Lake Cahuilla was filled. The Cahuilla made ceramic vessels and obtained them via trade. Between 1875 and 1891, the United States established 10 reservations for the Cahuilla within their territory: Agua Caliente, Augustine, Cabazon, Cahuilla, Los Coyotes, Morongo, Ramona, Santa Rosa, Soboba, and Torres-Martinez.

Gabrielino

The Valley Region and western portion of the Mountains Region is in the traditional territory of the Gabrielino, that is, peoples administered by the Spanish from Mission San Gabriel. *Gabrielino* was used to refer to Native Americans of several tribes. Many Gabrielino today identify as *Tongva*, the indigenous people who inhabited the Los Angeles Basin and Channel Islands offshore of the Los Angeles Basin, and are referred to as Tongva henceforth in this section. The Tongva language belongs to Takic branch of the Uto-Aztecan language family. The Tongva established large, permanent villages in the fertile lowlands along rivers and streams, and in sheltered areas along the coast, stretching from the foothills of the San Gabriel Mountains to the Pacific Ocean. Historic-era Tongva settlements within the San Bernardino Valley were primarily located at the base of the foothills and along perennial watercourses. Tongva society was organized along patrilineal non-localized clans; one or two clans generally made up the population of a village.

Tongva houses were large, circular, domed structures made of willow poles thatched with tule that could hold up to 50 people. The Tongva subsistence economy was centered on gathering and hunting. Acorns were the staple food, supplemented by the roots, leaves, seeds, and fruits of a wide variety of flora (e.g., islay, cactus, yucca, sages, and agave). Fresh- and saltwater fish, shellfish, birds, reptiles, and insects, as well as large and small mammals, were also consumed. Tools and implements used to gather and collect food resources included bows and arrows, traps, nets, blinds, throwing sticks and slings, spears, harpoons, and hooks. Many plant foods were collected with woven seed beaters, several forms of burden baskets, carrying nets, and sharpened digging sticks. Tongva people processed food with a variety of tools, including portable and bedrock mortars, pestles, basket hopper mortars, manos and metates, hammerstones and anvils, woven strainers and winnowers, leaching

5. Environmental Analysis CULTURAL RESOURCES

baskets and bowls, woven parching trays, knives, bone saws, and wooden drying racks. Deceased Tongva were either buried or cremated, with burial more common on the Channel Islands and the neighboring mainland coast and cremation predominating in most of the mainland.

Mohave

The traditional territory of the Mohave includes the west side of the Colorado River in the eastern North Desert Region, extending east into Arizona.

The Mohave lived in villages on terraces above the Colorado River much of the year, moving down onto the floodplain in the spring to plant crops after the seasonal floods. The Mohave relied on floodplain horticulture, fishing, and gathering for subsistence. The bulk of the traditional Mohave diet was vegetarian but hunting and fishing were nonetheless important. The Mohave traded across an area extending from the Pueblos of Arizona to the Pacific Coast.

Southern Paiute

The Southern Paiute belong to the Numic branch of the Uto-Aztecan language family. The traditional territory of the Southern Paiute includes part of southeast California—including part of the North Desert Region and the easternmost part of the East Desert Region—and extends north and east into southern Nevada, southern Utah, and northern Arizona. Southern Paiute subsistence was centered on gathering and hunting. Food sources included small game such as rabbits and tortoises as well as fish and mountain sheep. The Southern Paiute used a variety of plants, including piñon nuts and agave for food; some groups practiced agriculture, raising maize, squash, and winter wheat. The basic socioeconomic unit of the Southern Paiute was the family household.

Historic Overview

Post-contact history for the state of California is generally divided into three periods: the Spanish period (1769–1822), the Mexican period (1822–1848), and the American period (1848–present).

Spanish Period (1769–1822)

Spanish explorers made sailing expeditions along the coast of southern California between the mid-1500s and mid-1700s. The 1769 overland expedition by Captain Gaspar de Portolá marks the beginning of California's Historic period. The first known Spanish explorer to enter the area that would become San Bernardino County was Father Francisco Garcés, traveling from the Colorado River in 1776. The San Bernardino de Sena Estancia (also known as the San Bernardino Rancho) was established in 1819 near the present-day City of Redlands for grazing cattle owned by Mission San Gabriel. In the early 1800s, the Spanish increased their efforts to incorporate Native Americans into the mission system. Native Americans from interior tribes were either brought or came to the San Gabriel and San Fernando missions, established in 1771 and 1797, respectively, which may have exerted influence as far as the upper Mojave River. Some Native Americans fled the missions to the San Joaquin Valley or Mojave Desert, resulting in tribal intermixing and blurred territorial boundaries.

5. Environmental Analysis

CULTURAL RESOURCES

Mexican Period (1822–1848)

New Spain (Mexico and the California territory) won independence from Spain in 1821. The influence of the California missions waned in the late 1820s through the early 1830s; as one consequence, extensive land grants in the interior were initiated.

After the Secularization Act of 1833, the Mexican government privatized most Franciscan lands, including holdings of their California missions. The vast mission lands and livestock holdings were redistributed by the Mexican government through several hundred land grants to private, non–Native American ranchers. The large ranchos became important economic and social centers in the Mexican period. Landowners largely focused on the cattle industry and devoted large tracts to grazing; cattle hides became a primary Southern California export.

American Period (1848–Present)

The Mexican-American War ended in 1848, ushering California into its American period. Horticulture and livestock, based primarily on cattle, continued to dominate the southern California economy through the first decade of the Gold Rush, which began in 1848. California attained statehood in 1850. San Bernardino County was organized from parts of Los Angeles and San Diego counties in April 1853, and the city of San Bernardino became the county seat in 1854.

During the Gold Rush, thousands of people traveled the Mojave River Trail (Old Spanish Trail). Following the Civil War, overland stage services to and from southern California resumed in 1868 with the Holladay and Wells Fargo operations. The Atlantic and Pacific Railroad (now the BNSF) crossed the central part of the San Bernardino County, linking the area with San Diego and the eastern states by 1887. The City of Barstow was founded in 1885. The first highways across the Mojave Desert followed the Cajon Pass–Barstow–Needles route established by the Southern California Railway (BNSF). Established in 1912, the Ocean-to-Ocean Highway followed the Mojave River/Old Spanish Trail through Needles and Barstow to San Bernardino. Established in 1926, most of U.S. Route 66 largely followed the Ocean-to-Ocean Highway, passing through the desert region south of Needles on its way across the country to Los Angeles. After U.S. Route 66 was decommissioned in 1985, parts of it became Interstate 40 as well as Interstate 15.

Barstow became a mining center in the late 1800s when silver was discovered in the area. Although the silver mines shut down in 1896, borax mining replaced it as the major industry. Today, Barstow is a major transportation hub of the Mojave Desert. Military bases were established in the desert prior to and after U.S. entry into World War II. Large tracts of land were set aside for military use near Ridgecrest, Barstow, Lancaster, and Twentynine Palms.

During World War II, the military took control of much of the California desert. In 1940, a large tract of land northeast of Barstow was set aside for Fort Irwin. In 1952, a large Marine Corps Training Center was established at Twentynine Palms spanning much of the west half of the East Desert Region. The east end of Edwards Air Force Base is in the North Desert Region. These bases continue to operate.

Since World War II, several areas in the Mojave have experienced a boom in urban growth. Much of this expansion has centered on Barstow, Victorville, Hesperia, and Apple Valley in the west, and near Twentynine

5. Environmental Analysis CULTURAL RESOURCES

Palms and Yucca Valley further east. Along with an increased number of year-round occupants and weekend inhabitants, there is an ever-growing number of visitors to natural areas such as Joshua Tree National Park. Accessibility to the region was made easier by the establishment of the interstate highway system.

5.5.1.4 METHODOLOGY

Tribal Cultural Resources

To fulfill the requirements of Senate Bill 18 and Assembly Bill 52, the County sent letters on December 13, 2016, to each of 17 tribal contacts identified by the Native American Heritage Commission, notifying them of the Countywide Plan and requesting input via U.S. mail. The following six tribes responded to the County. Their input and participation and consultation with the County is documented in Section 5.17, *Tribal Cultural Resources*.

- Agua Caliente Band of Cahuilla Indians
- Gabrieleno Band of Mission Indians–Kizh Nation
- Morongo Band of Mission Indians
- San Manuel Band of Mission Indians
- Soboba Band of Luiseño Indians
- Twenty-Nine Palms Band of Mission Indians

Sacred Lands File Search

A Sacred Lands File search identified sacred lands within 23 topographic quadrangles; specific locations are not revealed.

Cultural Records Search

Records for San Bernardino County are currently managed through the South Central Coastal Information Center (SCCIC) at California State University, Fullerton.

SWCA conducted background research through a combination of methods to identify known resources, characterize the types of resources that occur within the pertinent portions of the county, and provide high-level summaries of recently completed studies. Detailed file searches were conducted only for the 12 (total) Community Planning Areas and spheres of influence (SOI) that were considered to have the highest potential for growth.

5.5.1.5 CULTURAL RESOURCES

Archaeological Resources

California Office of Historic Preservation (OHP)'s current listings for the county included 1,345 resources. Nearly 20 percent of the resources provided (252) are listed in either the NRHP or CRHR, and an additional 14 percent (186) are eligible for listing in one or both registers.

5. Environmental Analysis

CULTURAL RESOURCES

Regional Distribution

Archaeological sites are less common in the Valley Region than in the other regions (Table 5.5-1). Historic archaeological resources are present in the Valley Region and include largely structural ruins and water control features and systems. Prehistoric resources are less prevalent in the Valley Region than in other portions of the county, largely due to disturbance by historic and modern development. Historic archaeological resources related to the logging and lumber industry are largely limited to the Mountains Region. Prehistoric resources are also present in this region, including site types such as temporary camps and lithic scatters.

Table 5.5-1 Archaeological Site Type by County Region

| Site Type | Valley | Mountains | East Desert | North Desert |
|-------------------------------------|--------|-----------|-------------|--------------|
| Prehistoric Resources | | | | |
| Prehistoric lithic scatters | X | X | X | X |
| Prehistoric rock alignments/cairns | | | X | X |
| Prehistoric habitation | | X | | X |
| Prehistoric temporary camp | | X | X | X |
| Prehistoric quarry | | | X | X |
| Prehistoric roasting pit | | X | X | X |
| Prehistoric bedrock mortar | | X | | |
| Prehistoric petroglyph ¹ | | X | X | X |
| Prehistoric intaglio ² | | | | X |
| Prehistoric rock shelter/cave | X | X | X | X |
| Historic Resources | | | | |
| Historic refuse scatter | X | X | X | X |
| Historic mining activity areas | | X | | |

Source: Appendix E.

¹ A petroglyph is rock art made by removing part of a rock surface, e.g., by carving or abrading.

² An intaglio is a design carved into the ground surface by removal of a layer of rock and/or soil.

Archaeological resources listed on state and/or national registers are found in all four geographic regions of the county, with most located within the North Desert Region. Table 5.5-2 lists archaeological sites and districts that have been listed in the NRHP; no archaeological resources in San Bernardino County are listed in the CRHR. Three archaeological resources listed in the NRHP are found in the Valley Region. The Mountains Region holds three such resources. One NRHP-listed archaeological site is located in the East Desert Region. The North Desert Region is home to the largest number of listed archaeological resources, with nine archaeological sites and four archaeological districts listed in the NRHP. The Washington, Henry Survey Marker in the Mountain Region is a historic-period site (a survey maker atop San Bernardino Peak); the remaining sites in Table 5.5-2 are Native American resources.

5. Environmental Analysis
 CULTURAL RESOURCES

Table 5.5-2 Listed Archaeological Resources by Geographic Region

| Geographic Region | Site Name | City or Town ¹ | NRHP | CHL | CRHR |
|---|--|---------------------------|------|-----|------|
| Valley | Fontana Pit and Groove Petroglyph Site | Fontana | X | | |
| | Crowder Canyon Archeological District | San Bernardino | X | | |
| Mountains | Washington, Henry, Survey Marker | Big Bear City | X | | |
| East Desert | Foxtrot Petroglyph Site | Twentynine Palms | X | | |
| North Desert | Aiken's Wash National Register District | Baker | X | | |
| | Archeological Site CA-SBR-140 | Baker | X | | |
| | Bitter Spring Archeological Site (CA-SBR-2659) | Barstow | X | | |
| | Eagle Well Petroglyph Site | Barstow | X | | |
| | Fossil Canyon Petroglyph Site | Barstow | X | | |
| | Rodman Mountains Petroglyphs Archeological District | Barstow | X | | |
| | Black Canyon--Inscription Canyon--Black Mountain Rock Art District | Hinkley | X | | |
| | CA-SBR-1008A, CA-SBR-1008B, CA-SBR-1008C | Johannesburg | X | | |
| | Archeological Site No. D-4 | Needles | X | | |
| | Piute Pass Archeological District | Needles | X | | |
| | Topock Maze Archeological Site | Needles | X | | |
| | Newberry Cave Site | Newberry Springs | X | | |
| | Archeological Site No. E-21 | Parker | X | | |
| | Squaw Spring Archeological District | Red Mountain | X | | |
| Blackwater Well | Red Mountains | X | | | |
| Archeological Site CA-SBR-3186 | Silver Lake | X | | | |
| Calico Mountains Archeological District | Yermo | X | | | |

Source: Appendix E.

¹ Some cities and towns identified in this table indicate the general vicinity of a resource. Some resources are outside of the identified cities or towns; and some resources listed as being in incorporated cities or towns may be in unincorporated areas.

Source: National Park Service. 2017, December 5. Spreadsheet of NRHP Listed Properties. https://www.nps.gov/nr/research/data_downloads/national-register-listed-properties-20171205.xlsx.

Historical Resources

Table 5.5-3 shows the distribution and designations of historic resources in the County—44 on the NRHP; 1 National Historic Landmark, the Pioneer Deep Space Station; 2 on the CRHR; and 42 California Historical Landmarks.

5. Environmental Analysis

CULTURAL RESOURCES

Table 5.5-3 Historic Resources in the County

| Region | NRHP | NHL | CRHR | CHL |
|--------------|------|-----|------|-----|
| Valley | 34 | | 2 | 20 |
| Mountain | 1 | | | 7 |
| East Desert | 3 | | | 2 |
| North Desert | 6 | 1 | | 16 |

Source: Appendix E.

NRHP = National Register of Historic Places

NHL = National Historic Landmark

CRHR = California Register of Historical Resources

CHL = California Historical Landmark

5.5.1.6 PALEONTOLOGICAL RESOURCES

San Bernardino County contains numerous geologic units sensitive for paleontological resources. Notable fossil localities in San Bernardino include the Marble Mountains; the Barstow Fossil Beds in the Rainbow Basin National Natural Landmark near Barstow; the Calico Lakebeds; and Lake Manix, a former lake in the present-day Mojave Valley northeast of the City of Yermo. Fossils of pleisiosaurs (huge aquatic reptiles), and several other types of animals, were found in Cajon Pass in the Mountain Region. The only recorded fossil dinosaur tracks in California were discovered in the eastern North Desert Region (San Bernardino County Museum 2016; UCMP 2018; UCMP 2009).

Paleontological Sensitivity Rankings

Society for Vertebrate Paleontology

The Society for Vertebrate Paleontology (SVP) defines the following four categories of paleontological sensitivity for rock units:

High Potential. “Rock units from which vertebrate or significant invertebrate, plant, or trace fossils have been recovered are considered to have a high potential for containing additional significant paleontological resources. Rock units classified as having high potential for producing paleontological resources include, but are not limited to, sedimentary formations, including formations composed of particles of volcanic origin; and some slightly metamorphosed rocks which contain significant paleontological resources anywhere within their geographical extent. Paleontological potential consists of both a) the potential for yielding abundant or significant vertebrate fossils or for yielding a few significant fossils, large or small, vertebrate, invertebrate, plant, or trace fossils and b) the importance of recovered evidence for new and significant scientific data.

Low Potential. Rock units identified in paleontological literature and/or field surveys as having low potential for yielding significant fossils. Such rock units will be poorly represented by fossil specimens in institutional collections, or based on general scientific consensus, only preserve fossils in rare circumstances and the presence of fossils is the exception not the rule, e.g. basalt flows or Recent colluvium. Rock units with low potential typically will not require impact mitigation measures to protect fossils.”

5. Environmental Analysis CULTURAL RESOURCES

Undetermined Potential. Rock units for which little information is available concerning their paleontological content, geologic age, and conditions in which the rocks formed are considered to have undetermined potential. Further study is necessary to determine if these rock units have high or low potential to contain significant paleontological resources and before a paleontological resource impact mitigation program can be developed.

No Potential. Some rock units have no potential to contain significant paleontological resources, for instance highly metamorphosed rocks (such as gneisses and schists) and plutonic igneous rocks (such as granites and diorites).² Rock units with no potential require no protection or impact mitigation measures relative to paleontological resources.

Bureau of Land Management (BLM)

The federal Bureau of Land Management has a six-point Potential Fossil Yield Classification (PFYC) system to provide baseline guidance for assessing paleontological resources. The classes are briefly summarized below and are discussed in further detail in the Paleontological Resources Technical Report.

- **Class 1: Very low potential:** Geologic units that are not likely to contain recognizable paleontological resources.
- **Class 2: low:** Geologic units that are not likely to contain paleontological resources.
- **Class 3: moderate:** Sedimentary geologic units where fossil content varies in significance, abundance, and predictable occurrence.
- **Class 4: high:** Geologic units that are known to contain a high occurrence of paleontological resources.
- **Class 5: very high:** Highly fossiliferous geologic units that consistently and predictably produce significant paleontological resources.
- **Class 6: unknown:** Geologic units that cannot receive an informed PFYC assignment.

Geologic Setting

The geologic setting of the four County regions is described very briefly below and described in further detail in Section 5.6, *Geology and Soils*, of this DEIR. The Paleontological Resources Technical Report, included as Appendix F to this DEIR, contains an extensive description of geologic units in the County.

Valley Region

The Valley Region is dominated by the San Bernardino Basin, a depression formed between the Jurupa Mountains, Chino Hills, and San Jacinto Mountains to the south and the San Bernardino Mountains to the north and northeast. Sediment accumulates in the San Bernardino Basin from erosion of the surrounding highlands, and represents the primary geology of the area.

² Plutonic igneous rocks solidify from molten rock (magma) underground, often deep underground.

5. Environmental Analysis

CULTURAL RESOURCES

Mountain Region

The Mountain Region is part of the Transverse Ranges Geomorphic Province, which consists of young, east-west-trending mountain ranges and valleys. The San Bernardino Mountains are north of the San Andreas Fault and the San Gabriel Mountains are south of the fault. The San Bernardino Mountains are the highest mountain range in Southern California; Mount San Gorgonio (11,500 feet) is the highest peak. Although a variety of rock types can be found in the San Bernardino Mountains, the most common rock is quartz monzonite, an igneous rock that solidified underground, dating to the Late Cretaceous Period (that is, about 66 to 100.5 million years before present [mybp]), with metasedimentary rocks such as the Pelona Schist present locally.³

East and North Desert Regions

The East and North Desert Regions make up the largest land area in San Bernardino County and constitute almost the entirety of the Mojave Desert Geomorphic Province. The Mojave Desert occupies about 25,000 square miles, bounded on the west by the Transverse Ranges, the north by the Basin and Range, and the south by the Colorado Desert, and extends eastward into Arizona and Nevada. The province is characterized by scattered mountain blocks bounded by faults and the broad alluvial basins between them. Basins are filled with sediment ranging from thick sequences of Miocene sediments north of Barstow to more recent Quaternary depressions north of Baker (the Miocene Epoch extends from about 5.3 to 23 mybp; the Quaternary Period extends from about 2.58 mybp to the present). Lava flows that date from the Cenozoic are also common features across the Mojave, such as Amboy Crater, Cima Dome, and around Pisgah, with volcanic sediments intermixed with terrestrial sediments dating as far back as the Miocene (the Cenozoic Era extends from approximately 66 mybp to the present). A more recent feature are the many lake beds scattered across Mojave, these being particularly numerous in the eastern Mojave.

Geologic Units and Sensitivity Analysis

The sensitivity of geologic units for paleontological resources is shown below in Table 5.5-4, *Paleontological Sensitivity of Geologic Units in San Bernardino County*.

³ The ages of divisions of geologic time commonly used in this Section are provided below in Table 5.5-4; a more detailed geologic time scale is provided on p. 13 of the Paleontological Resources Technical Report included as Appendix F to this DEIR.

5. Environmental Analysis

Table 5.5-4 Paleontological Sensitivity of Geologic Units in San Bernardino County

| Map Unit ¹ Age in million years before present (mybp) of identified geologic time unit | Map Symbol | Included Geologic Formations of Note | Regions | SVP Sensitivity | BLM Sensitivity |
|--|-------------------|---|--|-----------------|----------------------------|
| Cenozoic Era (66 million years before present to present) | | | | | |
| Holocene Surficial Sediments Holocene: 11,700 ybp-present | Q, Qs, Qg, Qls | ---- | | Low to High | Class 2 to Class 4 or 5 |
| Older Alluvium Quaternary: 2.6 mybp-present | Qoa | Manix Formation Searles Lake Formation Chemehuevi Formation | All | High | Class 4 or 5 |
| Pliocene-Pleistocene Nonmarine Sediments Pliocene: 5.3-2.6 mybp Pleistocene: 2.6-0.012 mybp | QPc | San Timoteo Formation Tulare Formation | Valley, Mountain, North Desert | High | Class 4 or 5 |
| Pliocene Marine Sediments Pliocene: 5.3-2.6 mybp | P | Bouse Formation | North Desert | Varies | Varies |
| Miocene Marine Sediments Miocene: 23-5.3 mybp | M | Vaqueros Formation Puente Formation | Valley, North Desert | Varies | Varies |
| Miocene Nonmarine Sediments Miocene: 23-5.3 mybp | Mc | Avawatz Formation Cajon Valley/Punchbowl Formation, Barstow Formation Ricardo Formation Crowder Formation | Mountain, East Desert, North Desert | High | Class 4 or 5 |
| Tertiary Nonmarine Sediments Tertiary: 66-2.6 mybp | Tc | — | Mountain, North Desert | Varies | Varies |
| Mesozoic Era (about 252 to 66 mybp) | | | | | |
| Cretaceous Marine Sediments & Metasediments Cretaceous: 145-66 mybp | K | — | North Desert | Undetermined | Class U |
| Jurassic Marine Sediments Jurassic: 201-145 mybp | J | Aztec Sandstone | North Desert | High | Class 4 or 5 |
| Triassic Marine Sediments Triassic: 252-201 mybp | Tr | Buckskin Formation Chinle Moenkopi Formation Formation | North Desert | Undetermined | Class U |
| Paleozoic-Mesozoic Marine Sediments & Metasediments Paleozoic: 541-252 mybp Mesozoic: 252-66 mybp | Is | — | North Desert | Low | Class 2 or 3 |

5. Environmental Analysis CULTURAL RESOURCES

Table 5.5-4 Paleontological Sensitivity of Geologic Units in San Bernardino County

| Map Unit ¹ Age in million years before present (mybp) of identified geologic time unit | Map Symbol | Included Geologic Formations of Note | Regions | SVP Sensitivity | BLM Sensitivity | |
|---|--|--|---|------------------------------|-----------------|--------|
| Paleozoic Era (about 541 to 252 mybp) | | | | | | |
| Permian Marine Sediments & Metasediments <i>Permian: 299-252 mybp</i> | Pm | Bird Spring Formation, Kaibab Limestone | North Desert | Low | Class 2 or 3 | |
| Carboniferous Marine Sediments & Metasediments <i>Carboniferous: 359-299 mybp</i> | C | — | Mountain, North Desert | Low | Class 2 or 3 | |
| Devonian Marine Sediments & Metasediments <i>Devonian: 419-359 mybp</i> | D | Sultan Limestone | North Desert | Low | Class 2 or 3 | |
| Cambrian Marine Sediments & Metasediments <i>Cambrian: 541-485 mybp</i> | Ca | Bonanza King Formation Cadiz Formation Chambless Limestone Cornfield Springs Formation Latham Shale | Lotus Formation Nopah Formation Pioche Shale Prospect Mountain Quartzite Wood Canyon Formation Zabriskie Quartzite | East Desert, North Desert | Varies | Varies |
| Paleozoic Marine Sediments & Metasediments <i>Paleozoic: 541-252 mybp</i> | Pz | Oro Grande Formation | Mountain, East Desert, North Desert | Low | Class 2 or 3 | |
| Igneous and Metamorphic Rocks¹ (various ages) | | | | | | |
| Volcanic & Metavolcanic Rocks <i>varies</i> | Qrv, Qrvp, Qv, Qvp, Ti, Tv, Tvp, m, mv, Mzv, Pzv | — | All | None | Class 1 | |
| Plutonic Igneous & Metamorphic Rocks <i>varies</i> | grCz, um, grMz, gb, gr, gr-m, grPz, grpC, pCc, sch | — | All | None | Class 1 | |

Source: Appendix F.

¹ Metasediments are sedimentary rocks that have been metamorphosed. Highly metamorphosed rocks are listed under the *Igneous and Metamorphic Rocks* heading. In general, the more intensely a rock has been metamorphosed, the less likely it is to contain significant fossil resources.

5. Environmental Analysis

CULTURAL RESOURCES

Paleontological Sensitivity: Summary by Region

Paleontological sensitivity by region is summarized below and is shown in Figures 5.5-1, 5.5-2, 5.5-3, and 5.5-4.

Valley Region

The Valley Region is characterized by a broad valley floor deposit of Younger Alluvium (Q), which is likely underlain by Older Alluvium (Qoa) and Pleistocene-Pliocene Nonmarine Sediments (QPc), such as the San Timoteo Formation, that also occur as scattered outcrops along the valley margins. A large area of Miocene Marine Sediments (M), including the Vaqueros and Puente Formations, is present in the southwestern corner, whereas the northern margins of the region abut the granitic rocks of the San Bernardino Mountains. The Younger Alluvium (Q) across the valley floor is too young to preserve fossil resources in the upper layers, but the deeper layers and underlying sediments have high paleontological sensitivity, as do the Miocene Marine Sediments (M).

Mountain Region

The Mountain Region consists predominantly of granitic bedrock and high-grade metamorphic rocks that have no potential to preserve fossil resources. However, a number of highly sensitive units are present as scattered outcrops, primarily Older Alluvium (Qoa), Pleistocene-Pliocene Nonmarine Sediments (QPc), and Miocene Nonmarine Sediments (Mc), mapped locally as the Cajon Valley (Punchbowl) and Crowder Formations. The largest area of these outcrops occurs in the northwestern area and smaller outcrops occur in the northeastern area around Big Bear Lake and Seven Oaks. There are also several small areas where low-sensitivity Carboniferous (C) and Paleozoic (Pz) Marine Sediments and Metasediments occur to the north and east of Big Bear Lake.

North Desert Region

The North Desert Region is characterized by broad alluvial plains between scattered mountain outcrops. In general, the mountains consist of granitic bedrock or volcanic deposits and will have no paleontological potential. Small exposures of sediments and low-grade metamorphosed sediments are also present in the mountains and have highly variable paleontological sensitivities. In particular, outcrops of the Aztec Sandstone (mapped as Jurassic Marine Sediments, J) as well as certain formations mapped as Cambrian (Ca) and Precambrian (pC) Marine Sediments and Metasediments, have high paleontological sensitivity. Outcrops of Paleozoic Marine Sediments and Metasediments (Is, Pm, D, Pz) have generally low sensitivity.

The broad alluvial plains between the mountains generally have low to high sensitivity where Younger Alluvium (Q, Qs, Qg, Qls) is mapped at the surface and likely overlies older, highly sensitive sediments. These older, highly-sensitive sediments are often exposed along the margins of these alluvial plains as they approach the intervening mountain ranges and consist of formations well known to preserve fossil resources, such as Older Alluvium (Qoa) and the Manix Formation, Pliocene-Pleistocene Nonmarine Sediments (QPc), and Miocene Nonmarine Sediments (Mc) (Avawatz, Barstow, Crowder, Cajon Valley/Punchbowl, and Ricardo Formations, among others).

5. Environmental Analysis

CULTURAL RESOURCES

East Desert Region

The East Desert Region consists of the eastern margin and foothills of the San Bernardino Mountains flattening out westward in broad alluvial plains and scattered mountain ranges very similar to that seen in the North Desert Region. The eastern area is similar in overall sensitivity to the Mountain Region, with primarily non-fossil-bearing granite and scattered outcrops of highly sensitive Older Alluvium (Qoa). As the topography flattens out, the sensitivity comes to be more similar to that of the North Desert Region, with alluvial plains of low- to highly-sensitive Younger Alluvium (Q) overlying high-sensitivity Older Alluvium (Qoa).

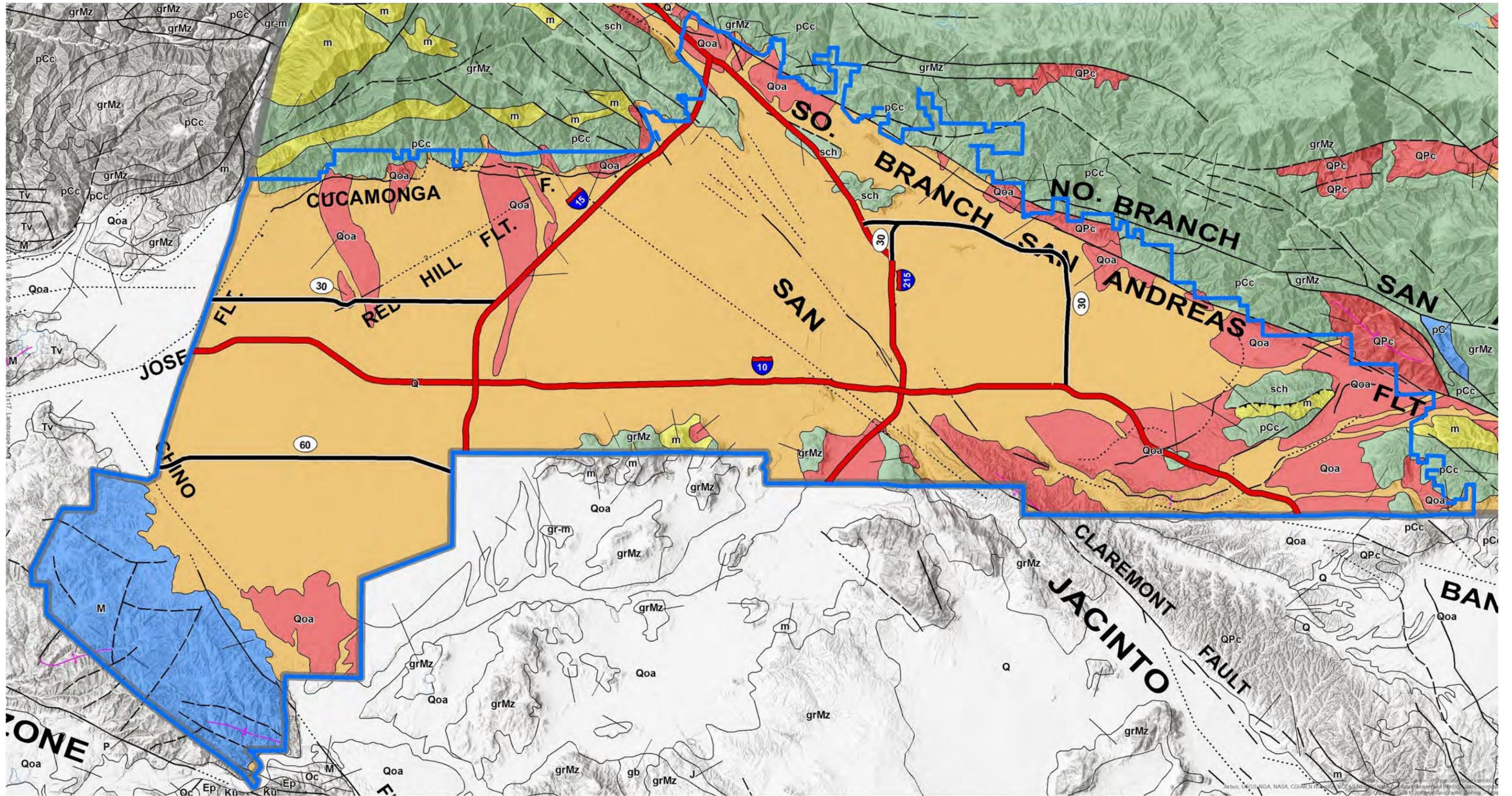
Unique Geological Features

There are numerous unique geological features in San Bernardino County. The following is a partial list; no complete list is provided here.

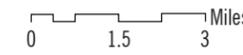
- **Valley Region**
 - San Andreas Fault
- **Mountain Region**
 - San Andreas Fault
 - Mormon Rocks: sandstone outcrops southwest of Cajon Pass

The Transverse Ranges Geomorphic Province—which includes the San Bernardino Mountains and San Gabriel Mountains and extends east-west from Santa Barbara County in the west to east-central Riverside County in the east—is one of the most rapidly uplifting areas on Earth (Harden 2004).

- **North Desert Region**
 - **Trona Pinnacles:** a National Natural Landmark: vertical spires of calcium carbonate (“tufa”) up to 140 feet high. East of Ridgecrest and State Route 178. (BLM 2017)
 - **Mitchell Caverns:** in Providence Mountains State Recreation Area (a state park in the Mojave National Preserve). (CDPR 2017)
 - **Rainbow Basin:** a National Natural Landmark: multicolored rock formations and the Barstow Fossil Beds. North of Barstow. (NPS 2017a)
 - **Amboy Crater:** a National Natural Landmark: a volcano west of Amboy. (NPS 2017b)
 - **Pisgah Crater:** a volcano, part of the Lavic Lake Volcanic Area, east of Newberry Springs. (Sylvester and Gans 2016)
 - **Afton Canyon:** the canyon walls are multicolored volcanic rocks. (Sylvester and Gans 2016)



| Legend | |
|-----------------------------|------------------------------------|
| Valley Region | — bedding |
| Geologic Sensitivity | — scratch boundary |
| Varies | — water boundary |
| None | — thrust fault, approx. located |
| High | — dextral fault, certain |
| Low-to-High | — fault, approx. located |
| Low | — fault, certain |
| | — fault, concealed |
| | — fault, concealed, queried |
| | — normal fault, certain |
| | — normal fault, concealed |
| | — normal fault, concealed, queried |
| | — sinistral fault, approx. located |
| | — Interstate |
| | — State Highway |



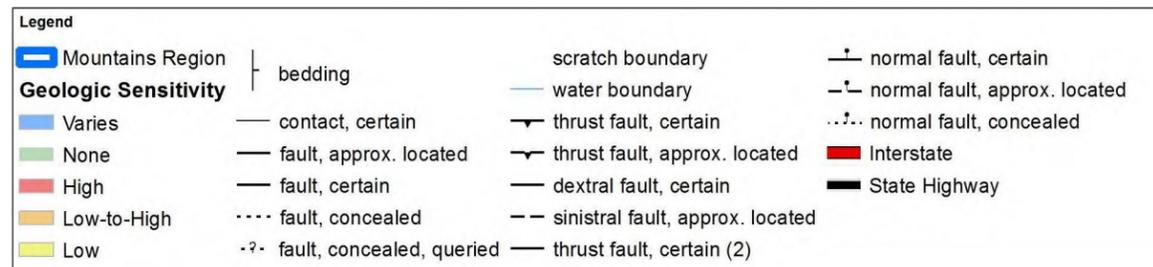
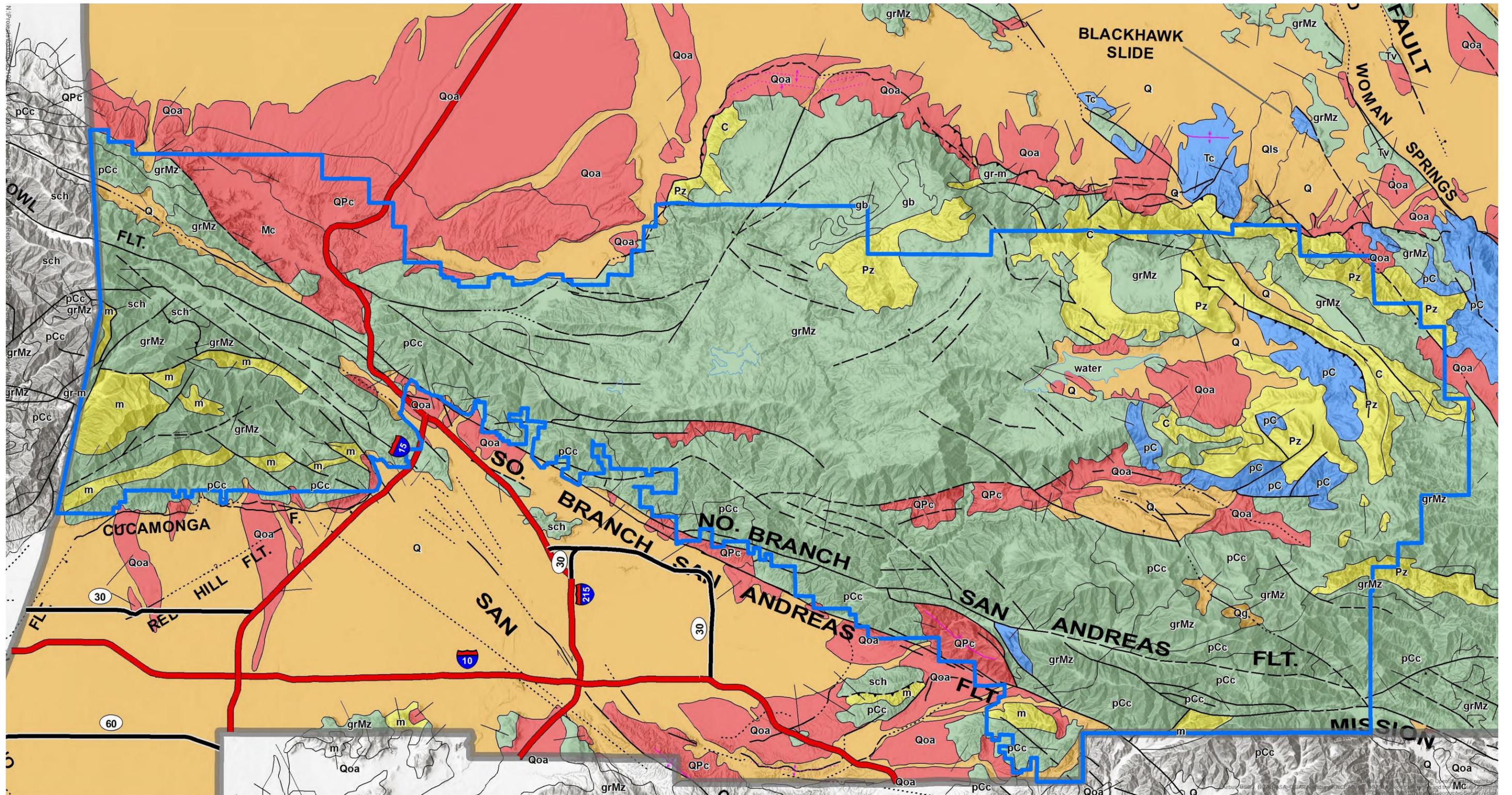
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5 Environmental Analysis
Fig. 5.5-1 Paleontological Sensitivity - Valley Region

5. Environmental Analysis

CULTURAL RESOURCES

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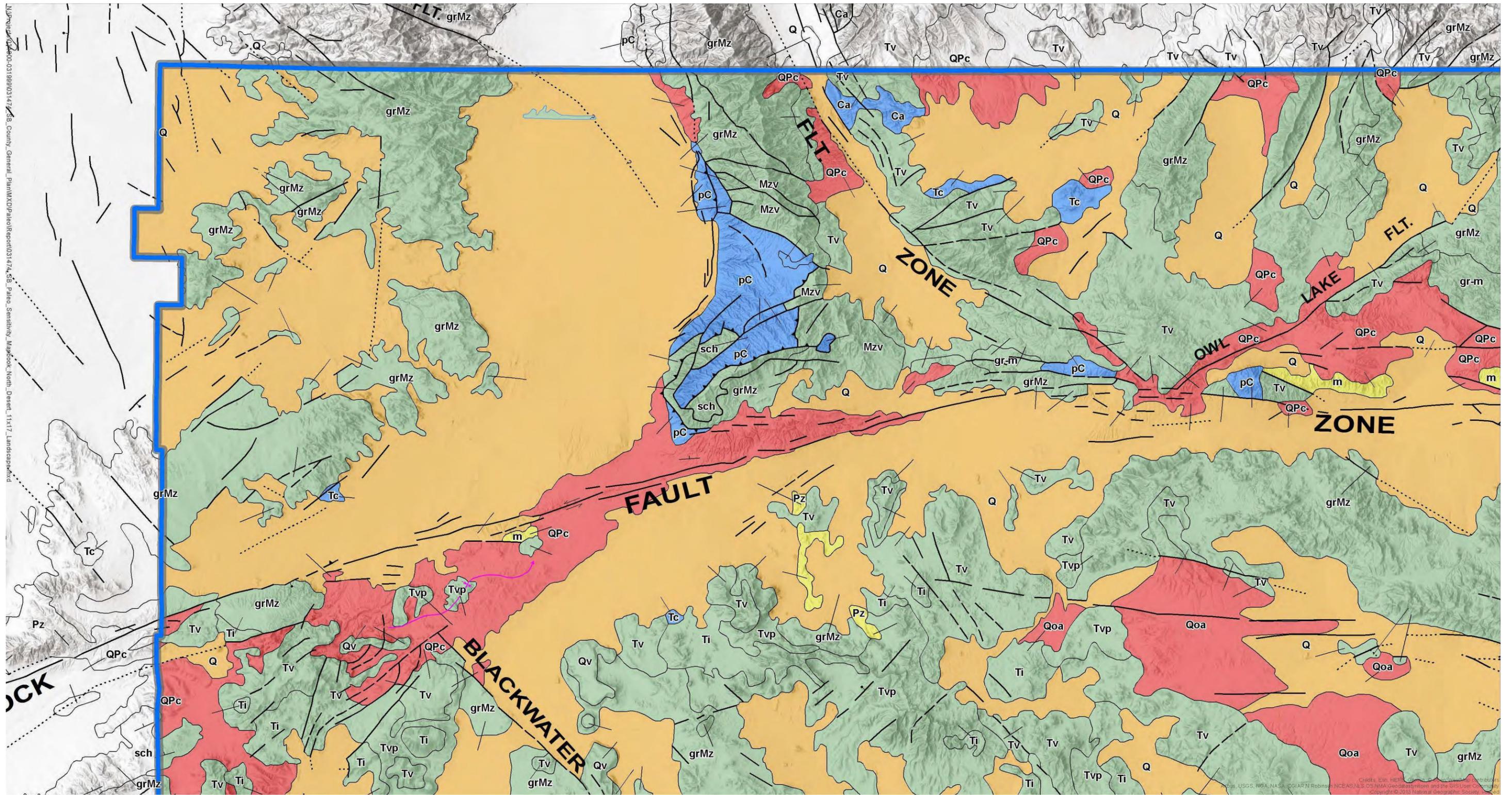
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5 Environmental Analysis
Fig. 5.5-2 Paleontological Sensitivity - Mountain Region

5. Environmental Analysis

CULTURAL RESOURCES

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| Legend | | |
|-----------------------------|---------------------------|---------------------------|
| Regions | bedding | water boundary |
| Geologic Sensitivity | contact, certain | thrust fault, certain |
| Varies | fault, approx. located | dextral fault, certain |
| None | fault, certain | sinistral fault, certain |
| High | fault, concealed | thrust fault, certain (2) |
| Low-to-High | fault, concealed, queried | normal fault, certain |
| Low | | |



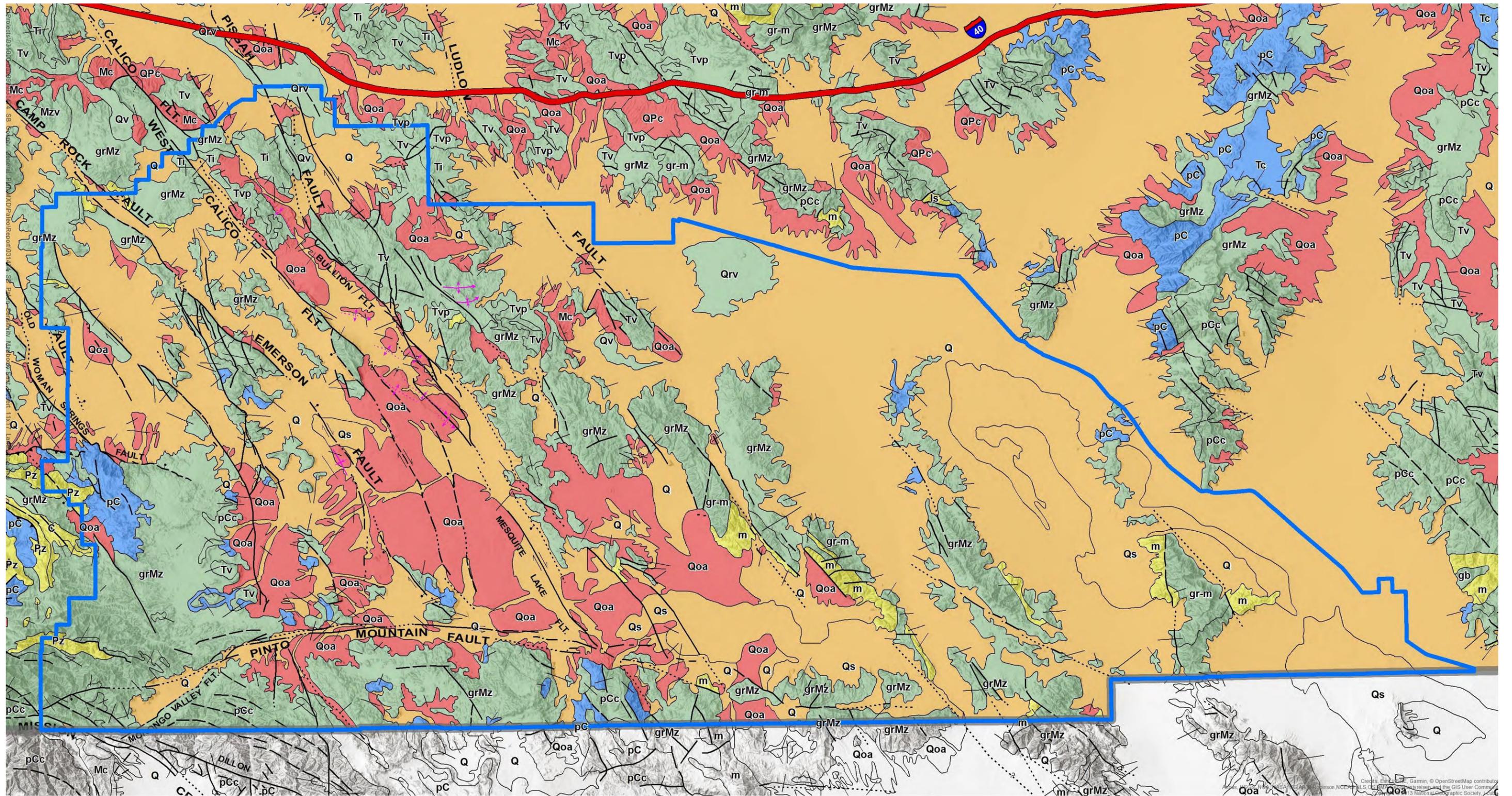
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5 Environmental Analysis
Fig. 5.5-3 Paleontological Sensitivity - North Desert Region

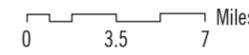
5. Environmental Analysis

CULTURAL RESOURCES

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| Legend | |
|-----------------------------|--------------------------------|
| East Desert Region | bedding |
| Geologic Sensitivity | water boundary |
| Varies | normal fault, certain |
| None | normal fault, approx. located |
| High | normal fault, concealed |
| Low-to-High | thrust fault, certain |
| Low | dextral fault, certain |
| | dextral fault, approx. located |
| | sinistral fault, certain |
| | thrust fault, certain (2) |
| | fault, approx. located |
| | fault, certain |
| | fault, concealed |
| | fault, concealed, queried |
| | Interstate |



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5 Environmental Analysis
Fig. 5.5-4 Paleontological Sensitivity - East Desert Region

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COUNTYWIDE PLAN
Environmental Impact Report

5. Environmental Analysis

CULTURAL RESOURCES

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5. Environmental Analysis CULTURAL RESOURCES

- **Cinder Cone Natural Area:** a National Natural Landmark in Mojave National Preserve: over 20 large cinder cones—a type of volcano—of recent origin. North of Kelso, in Mojave National Preserve. (NPS 2017c)
- **Turtle Mountains Natural Area:** a National Natural Landmark: includes volcanic peaks, spires, and cliffs. South of Needles. (BLM 2017b)
- **Kelso Dunes:** a National Natural Landmark in Mojave National Preserve: sand dunes up to 600 feet high. Southwest of Kelso. (NPS 2017d)
- **Blackhawk Landslide:** 700 million tons of rock fell from Blackhawk Mountain in the San Bernardino Mountains, extending 5.6 miles into the Mojave Desert, over 17,400 years ago. (Sylvester and Gans 2016)
- **East Desert Region**
 - **Wonderland of Rocks:** a 12-square-mile area of eroded, fractured granite boulders in Joshua Tree National Park.

All of the above-identified features are on federal or state land, outside of County jurisdiction, with two exceptions:

- Portions of the San Andreas Fault (Valley and Mountain Regions)
- Pisgah Crater (surrounded by federal [BLM] land) (North Desert Region)

5.5.2 Thresholds of Significance

CEQA Guidelines Section 15064.5 provides direction on determining significance of impacts to archaeological and historical resources. Generally, a resource shall be considered “historically significant” if the resource meets the criteria for listing on the California Register of Historical Resources:

- Is associated with events that have made a significant contribution to the broad patterns of California’s history and cultural heritage;
- Is associated the with lives of persons important in our past;
- Embodies the distinctive characteristics of a type, period, region or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
- Has yielded, or may be likely to yield, information important in prehistory or history. (PRC § 5024.1; 14 CCR § 4852)

The fact that a resource is not listed in the California Register of Historical Resources, not determined to be eligible for listing, or not included in a local register of historical resources does not preclude a lead agency from determining that it may be a historical resource.

5. Environmental Analysis

CULTURAL RESOURCES

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project would:

- C-1 Cause a substantial adverse change in the significance of an historical resource pursuant to Section 15064.5.
- C-2 Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5.
- C-3 Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.
- C-4 Disturb any human remains, including those interred outside of dedicated cemeteries.

5.5.3 Regulatory Requirements and General Plan Policies

5.5.3.1 REGULATORY REQUIREMENTS

- **RR CUL-1.** Cultural and paleontological resources are recognized as nonrenewable resources and receive protection under the PRC and CEQA.
- **RR CUL-2.** Native American historical and cultural resources and sacred sites are protected under PRC Sections 5097.9 to 5097.991, which require that descendants be notified when Native American human remains are discovered and provide for treatment and disposition of human remains and associated grave goods.
- **RR CUL-3.** The removal, without permission, of any paleontological site or feature is prohibited from lands under the jurisdiction of the state or any city, county, district, authority, or public corporation, or any agency thereof (PRC 5097.5). This applies to agencies' own activities, including construction and maintenance, and permit actions by others.
- **RR CUL-4.** Adverse impacts to paleontological resources from developments on public (state, county, city, and district) lands require reasonable mitigation. (PRC 5097.5)
- **RR CUL-5.** If human remains are discovered within a project site, disturbance of the site must stop until the coroner has investigated and made recommendations for the treatment and disposition of the human remains to the person responsible for the excavation, or to his or her authorized representative. If the coroner has reason to believe the human remains are those of a Native American, he or she shall contact, by telephone within 24 hours, the Native American Heritage Commission. (California Health and Safety Code Section 7050.5)

5.5.3.2 POLICY PLAN

The Cultural Resource Element of the proposed San Bernardino Countywide Plan provides guidance regarding the conservation of cultural resources.

5. Environmental Analysis CULTURAL RESOURCES

- Goal CR-1** **Tribal Cultural Resources.** Tribal cultural resources that are preserved and celebrated out of respect for Native American beliefs and traditions.
- Policy CR-1.1** **Tribal notification and coordination.** We notify and coordinate with tribal representatives in accordance with state and federal laws to strengthen our working relationship with area tribes, avoid inadvertent discoveries of Native American archaeological site and burials, assist with the treatment and disposition of inadvertent discoveries, and explore options of avoidance of cultural resources early in the planning process.
- Policy CR-1.2** **Tribal planning.** We will collaborate with local tribes on countywide planning efforts and, as permitted or required, planning efforts initiated by local tribes.
- Policy CR-1.3** **Mitigation and avoidance.** We consult with local tribes to establish appropriate project-specific mitigation measures and resource-specific treatment of potential cultural resources. We require project applicants to design projects to avoid known tribal cultural resources, whenever possible. If avoidance is not possible, we require appropriate mitigation to minimize project impacts on tribal cultural resources.
- Policy CR-1.4** **Resource monitoring.** We encourage active participation by local tribes as monitors in surveys, testing, excavation, and grading phases of development projects with potential impacts on tribal resources.
- Goal CR-2** **Historic and Paleontological Resources.** Historic resources (buildings, structures, or archaeological resources), and paleontological resources that are protected and preserved for their cultural importance to local communities as well as their research and educational potential.
- Policy CR-2.1** **National and state historic resources.** We encourage the preservation of archaeological sites and structures of state or national significance in accordance with the Secretary of Interior’s standards.
- Policy CR-2.2** **Local historic resources.** We encourage property owners to maintain the historic integrity of resources on their property by (listed in order of preference): preservation, adaptive reuse, or memorialization.
- Policy CR-2.3** **Paleontological and archaeological resources.** We strive to protect paleontological and archaeological resources from loss or destruction by requiring that new development include appropriate mitigation to preserve the quality and integrity of these resources. We require new development to avoid paleontological and archeological resources whenever possible. If avoidance is not possible, we require the salvage and preservation of paleontological and archeological resources.
- Policy CR-2.4** **Partnerships.** We encourage partnerships to champion and financially support the preservation and restoration of historic sites, structures, and districts.

5. Environmental Analysis

CULTURAL RESOURCES

Policy CR-2.5 **Public awareness and education.** We increase public awareness and conduct education efforts about the unique historic, natural, tribal, and cultural resources in San Bernardino County through the County Museum and in collaboration with other entities and organizations.

The Natural Resources Element addresses protection of unique geological features.

Goal NR-4 Scenic Resources. Scenic resources that highlight the natural environment and reinforce the identity of local communities and the county.

Policy NR-4.1 **Preservation of scenic resources.** We consider the location and scale of development to preserve regionally significant scenic vistas and natural features, including prominent hillsides, ridgelines, dominant landforms, and reservoirs.

Policy NR-4.2 **Coordination with agencies.** We coordinate with adjacent federal, state, local, and tribal agencies to protect scenic resources that extend beyond the County's land use authority and are important to countywide residents, businesses, and tourists.

5.5.4 Environmental Impacts

The applicable thresholds are identified in brackets after the impact statement.

Impact 5.5-1: Development of the Project could impact an identified historic resource. [Threshold C-1]

Many buildings and structures in areas under the County's jurisdiction are more than 50 years old. Table 5.5-3 lists the number of historical resources in San Bernardino County with one or more of four statuses: listed on the NRHP (44); National Historic Landmark (1); listed on the CRHR (2); or California Historical Landmarks (42).

Historic built environment resources are present in all geographic regions within the county but are most common in the Valley Region. Main areas of the county that are anticipated for growth in the Countywide Plan include: the Bloomington community (Rialto SOI) and the Town of Apple Valley SOI. The Bloomington community is in the Valley Region, which has more historic built environment resources than surrounding regions due to historic development of the county's population centers. Growth in the Bloomington community of the Valley Region has the potential to affect historic built environment resources directly through demolition of historic buildings and structures to make way for redevelopment. It could also have indirect impacts—temporary effects associated with construction-related noise, dust, and vibration, and permanent effects such as changes to the integrity of historical resources (e.g., setting and feeling). The town of Apple Valley is in the North Desert Region. Historic resources are less common in the North Desert Region, but still present. New residential and commercial development in Apple Valley and the North Desert Region could directly and/or indirectly affect historic built environment resources through redevelopment and new construction. Little growth is anticipated for the Mountain and East Desert Regions.

5. Environmental Analysis CULTURAL RESOURCES

The Cultural Resources Element of the proposed Countywide Plan is designed to address potential impacts to historical resources. Specifically, Policies CR-2.1 through 2.5 call for preservation of resources significant at the national, state, and local levels; avoidance and mitigation of impacts; the building of partnerships; and the promotion of public awareness and education. These policies will guide the County's overall approach to historical resources as the County implements the Countywide Plan.

Nevertheless, it is possible that future development or improvements related to changes in land use could potentially affect historic buildings and structures and cause significant adverse impacts to historical resources.

Level of Significance Without Mitigation: This impact would remain potentially significant after implementation of applicable regulatory measures and proposed CWP policies.

Impact 5.5-2: Development of the Project could impact archaeological resources. [Threshold C-2]

The area under County jurisdiction contains archaeological resources. There are 438 historical resources in San Bernardino County that are listed on the CRHR and/or NRHP or have been determined to be eligible for listing on one or both of those registers. Coordination with tribal organizations also indicates that the area under County jurisdiction is culturally sensitive. Although portions of this area have been previously studied, future development or improvements related to changes in land use could potentially affect and cause significant adverse impacts to archaeological resources.

Archaeological resources are present in all geographic regions in the county. Four main areas are anticipated for growth under the Countywide Plan—the Bloomington Community Plan Area (CPA), City of Fontana SOI, and East Valley Area Plan area are all in the Valley Region, and the Town of Apple Valley SOI is in the North Desert Region. The Valley Region has fewer archaeological resources than surrounding regions due to disturbance and development. However, archaeological resources can be found below ground, and intact deposits could be present below the level of historic and modern disturbance. Therefore, growth in the Bloomington community and the Valley Region in general has the potential to affect buried archaeological resources through ground-disturbing construction activities associated with residential and commercial construction. Apple Valley is in the North Desert Region, which is home to numerous archaeological resources. New residential and commercial development in Apple Valley and the North Desert Region has the potential to affect surface-level and subsurface archaeological resources through ground-disturbing construction activities. Little growth is anticipated for the Mountain Region and East Desert Region.

The Cultural Resources Element of the proposed Countywide Plan addresses potential impacts to archaeological resources. Specifically, Policies CR-2.1 through 2.5 call for preservation of resources significant at the national, state, and local levels; avoidance and mitigation of impacts; the building of partnerships; and the promotion of public awareness and education. These policies will guide the County's overall approach to archaeological resources as the County implements the Countywide Plan. However, additional mitigation measures are recommended to ensure the avoidance and mitigation of potential impacts from future projects in the County Control Area to archaeological resources.

5. Environmental Analysis

CULTURAL RESOURCES

Level of Significance Without Mitigation: This impact would remain potentially significant after implementation of applicable regulatory measures and proposed CWP policies.

Impact 5.5-3: The proposed Project could destroy paleontological resources or a unique geologic feature. [Threshold C-3]

Paleontological Resources

The Countywide Plan area contains paleontological resources. The younger alluvium across the valley floor is too young to preserve fossil resources in the upper layers, but the deeper layers and underlying sediments have high paleontological sensitivity. All three of the Valley growth areas lie in areas of low-to-high sensitivity. The broad alluvial plains between the mountains in the North Desert Region generally have low to high sensitivity where younger alluvium is mapped at the surface and likely overlies older, high-sensitivity sediments. These older, high-sensitivity sediments are often exposed along the margins of these alluvial plains as they approach the intervening mountain ranges.

Policy CR 2.3 of the Countywide Plan protects paleontological and archaeological resources from loss or destruction and requires that new development include appropriate mitigation to preserve the quality and integrity of these resources, avoid them when possible, and salvage and preserve them if avoidance is not possible. However, future development or improvements related to changes in land use could potentially affect and cause significant adverse impacts to paleontological resources.

Unique Geological Features

There are numerous unique geological features in San Bernardino County. A partial list of 13 features is presented in Section 5.5.1.6, “Unique Geological Features.” One of the features—the San Andreas Fault—is in the Valley and Mountain Regions; another is in the Mountain Region; a third is in the East Desert Region; and ten are in the North Desert Region.

Some projects developed under the Countywide Plan could damage unique geological features. Most of the features listed in Section 5.5.1.6 are on land under federal or state control rather than County jurisdiction; thus, Countywide Plan buildout would not damage those features. Only portions of the San Andreas Fault in the Valley and Mountain regions and Pisgah Crater in the North Desert Region are within County jurisdiction; the latter is surrounded by federal land.

None of the four growth areas has any unique geological features. The three growth areas in the Valley Region are nearly flat, and the portion of the Jurupa Mountains in the Bloomington CPA is not a unique geological feature. In the Apple Valley SOI in the North Desert Region, portions of the Hacienda Fairview Valley Specific Plan are on the feet of slopes of the Granite Mountains. However, the specific plan designates Granite Mountain slopes and Fairview Creek as Open Space; thus, implementation of the Countywide Plan would not impact mountain slopes or Fairview Creek in the specific plan area. Impacts would be less than significant for unique geological features.

5. Environmental Analysis CULTURAL RESOURCES

Level of Significance Without Mitigation: After implementation of RR CUL-3 and RR CUL-4, impacts would be potentially significant for paleontological resources.

Impact 5.5-4: Grading activities could potentially disturb human remains. [Threshold C-4]

Human remains could be buried outside of formal cemeteries in all four County regions. Ground disturbances by projects developed under the Countywide Plan could damage human remains. RR CUL-5 requires that if human remains are discovered within the project site, the coroner must investigate and make recommendations for the treatment and disposition of the human remains, including telephoning the NAHC within 24 hours if the coroner has reason to believe the remains are those of a Native American. Projects developed under the Countywide Plan would comply with existing law, and potential impacts to human remains would be less than significant.

Level of Significance without Mitigation: With implementation of RR CUL-5, this impact would be less than significant.

5.5.5 Cumulative Impacts

The area considered for cumulative impacts is all of San Bernardino County, including incorporated cities and other areas outside of County control.

Historical Resources

Many of the historical resources identified in Section 5.5.1.5 are in areas outside of County control. Projects in those areas could destroy or otherwise diminish the historical significance of historical resources. Other projects would comply with federal and state regulations governing historical resources (or federal regulations on land in federal jurisdiction). Projects that follow the Secretary of the Interior's Standards for the Treatments of Historic Properties (Standards) are typically mitigated below the level of significance. Impacts of Countywide Plan buildout would not be cumulatively considerable.

Archaeological Resources

Many of the archaeological resources identified in Section 5.5.1.5 are in areas outside of County control. Many projects in those areas would disturb soil and thus could damage archaeological resources. Other projects would comply with federal and state regulations governing historical resources (or federal regulations on land in federal jurisdiction).

Paleontological Resources

The cumulative analysis for archaeological resources also applies to paleontological resources.

5.5.6 Level of Significance Before Mitigation

With the implementation of RR CUL-5, Impact 5.5-4 would be less than significant.

5. Environmental Analysis

CULTURAL RESOURCES

Without mitigation, these impacts would be **potentially significant**:

- **Impact 5.5-1:** Development of the Project could impact an identified historic resource.
- **Impact 5.5-2:** Development of the Project could impact archaeological resources.
- **Impact 5.5-3:** The proposed Project could destroy paleontological resources or a unique geologic feature.

5.5.7 Mitigation Measures

Impact 5.5-1

CUL-1 In areas of documented or inferred historic resource presence, prior to construction or demolition activities that may impact historic resources, a historical resources assessment shall be prepared by a qualified architectural historian or historian who meets the Secretary of the Interior's PQS in architectural history or history. Potential historic resources include buildings, structures, objects, sites, historic districts, and landscape/site plan features falling within the project area and its immediate vicinity that are at least 45 years of age and are not substantially altered. The qualified architectural historian or historian shall conduct an evaluation of the potential historic resources in accordance with the guidelines and best practices promulgated by the State OHP and shall document the evaluation in a report meeting the State OHP guidelines, on Department of Parks and Recreation Series 523 forms. The report will be submitted to the County for review and concurrence, to ensure that any project requiring rehabilitation or alteration of a historical resource will not impair its significance.

Impact 5.5-2

CUL-2 In areas of documented or inferred archaeological resource presence, archaeological resource assessments shall be required prior to ground disturbance related to a development project. To determine the archaeological sensitivity of a proposed project area, the County may rely on an expert opinion from the County Museum staff, or on the results of a CHRIS records search at the SCCIC or the Sacred Lands File maintained by the NAHC. Archaeological resources assessments shall be performed under the supervision of an archaeologist that meets the Secretary of the Interior's Professional Qualifications Standards (PQS) in either prehistoric or historic archaeology. The archaeological resources assessment shall include a Phase I pedestrian survey, undertaken to locate any surface cultural materials that may be present.

CUL-3 If potentially significant archaeological resources are identified through an archaeological resources assessment, and impacts to these resources cannot be avoided, a Phase II Testing and Evaluation investigation shall be performed by an archaeologist who meets the PQS prior to any construction-related ground-disturbing activities to determine significance. If resources determined significant or unique through Phase II testing, and site avoidance is not possible, appropriate site-specific mitigation measures shall be established and undertaken. These might

5. Environmental Analysis CULTURAL RESOURCES

include a Phase III data recovery program implemented by a qualified archaeologist and performed in accordance with the OHP's Archaeological Resource Management Reports (ARMR): Recommended Contents and Format (OHP 1990) and Guidelines for Archaeological Research Designs (OHP 1991).

- CUL-4 If the archaeological assessment did not identify potentially significant archaeological resources within the proposed project area but indicated the area to be highly sensitive for archaeological resources, a qualified archaeologist shall prepare a monitoring plan for all ground-disturbing construction and pre-construction activities in areas with previously undisturbed soil. The archaeologist shall inform all construction personnel prior to construction activities of the proper procedures in the event of an archaeological discovery. The training shall be held in conjunction with the project's initial on-site safety meeting, and shall explain the importance and legal basis for the protection of significant archaeological resources. In the event that archaeological resources (artifacts or features) are exposed during ground-disturbing activities, construction activities in the immediate vicinity of the discovery shall be halted while the resources are evaluated for significance by an archaeologist who meets the PQS. If the discovery proves to be significant, it shall be curated with a recognized scientific or educational repository.

Impact 5.5-3

- CUL-5 In areas of documented or inferred paleontological resource presence, development projects proposed on previously undisturbed soils shall require consultation with a qualified paleontologist meeting the standards of SVP (2010). The initial consultation may be provided by a qualified paleontologist on staff at the County Museum. The qualified paleontologist will determine the degree of paleontological resource sensitivity, as outlined below, and will recommend a project-specific paleontological resources monitoring and mitigation plan (PRMMP). This plan will address specifics of monitoring and mitigation for the development project, and will take into account updated geologic mapping, geotechnical data, updated paleontological records searches, and any changes to the regulatory framework. This PRMMP should usually meet the standards of the SVP (2010), unless the project is on BLM land or subject to federal jurisdiction, in which case the BLM standards (2009) should be used. The following provisions would be typical for units mapped with the different levels of paleontological sensitivity:

- High (SVP)/Class 4–5 (BLM)—All projects involving ground disturbances in previously undisturbed areas sediments mapped as having high paleontological sensitivity will be monitored by a qualified paleontological monitor (BLM, 2009; SVP, 2010) on a full-time basis under the supervision of the Qualified Paleontologist. Undisturbed sediments may be present at the surface, or present in the subsurface, beneath earlier developments. This monitoring will include inspection of exposed sedimentary units during active excavations

5. Environmental Analysis

CULTURAL RESOURCES

within sensitive geologic sediments. The monitor will have authority to temporarily divert activity away from exposed fossils to evaluate the significance of the find and, should the fossils be determined to be significant, professionally and efficiently recover the fossil specimens and collect associated data. Paleontological monitors will use field data forms to record pertinent location and geologic data, will measure stratigraphic sections (if applicable), and collect appropriate sediment samples from any fossil localities.

- Low to High (SVP)/Class 2 to Class 4–5 (BLM)—All projects involving ground disturbance in previously undisturbed areas mapped with low-to-high paleontological sensitivity will only require monitoring if construction activity will exceed the depth of the low sensitivity surficial sediments. The underlying sediments may have high paleontological sensitivity, and therefore work in those units might require paleontological monitoring, as designated by the Qualified Paleontologist in the PRMMP. When determining the depth at which the transition to high sensitivity occurs and monitoring becomes necessary, the Qualified Paleontologist should take into account: a) the most recent local geologic mapping, b) depths at which fossils have been found in the vicinity of the project area, as revealed by the museum records search, and c) geotechnical studies of the project area, if available.
- Low (SVP)/Class 2–3 (BLM)—All projects involving ground disturbance in previously undisturbed areas mapped as having low paleontological sensitivity should incorporate worker training to make construction workers aware that while paleontological sensitivity is low, fossils might still be encountered. The Qualified Paleontologist should oversee this training as well as remain on-call in the event fossils are found. Paleontological monitoring is usually not required for sediments with low (Low / Class 2–3) paleontological sensitivity.
- None (SVP)/Class 1 (BLM)—Projects determined by the Qualified Paleontologist to involve ground-disturbing activities in areas mapped as having no paleontological sensitivity (i.e., plutonic igneous or high-grade metamorphic rocks) will not require further paleontological mitigation measures.

CUL-6

In the event of any fossil discovery, regardless of depth or geologic formation, construction work will halt within a 50-ft. radius of the find until its significance can be determined by a Qualified Paleontologist. Significant fossils will be recovered, prepared to the point of curation, identified by qualified experts, listed in a database to facilitate analysis, and deposited in a designated paleontological curation facility in accordance with the standards of the SVP (2010) and BLM (2009). A repository will be identified and a curatorial arrangement will be signed prior to collection of the fossils. Although the San Bernardino County Museum is specified as the repository for fossils found in the county in the current General Plan (San Bernardino County, 2007), the museum may not always be available as a repository. Therefore, any accredited institution may serve as a repository.

5. Environmental Analysis CULTURAL RESOURCES

5.5.8 Level of Significance After Mitigation

Impact 5.5-1

Impact 5.5.1 would be less than significant.

Impact 5.5-2

Impact 5.5-2 would be less than significant.

Impact 5.5-3

Impact 5.5-3 would be less than significant.

5.5.9 References

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