

III.8 CULTURAL RESOURCES

This chapter presents the environmental setting/affected environment for the Desert Renewable Energy Conservation Plan (DRECP) for cultural resources. More than 32,000 cultural resources are known in the Plan Area and occur in every existing environmental context, from mountain crests to dry lake beds, and include both surface and sub-surface deposits.

Cultural resources are categorized as buildings, sites, structures, objects, and districts under both federal law (for the purposes of the National Environmental Policy Act [NEPA] and the National Historic Preservation Act [NHPA]) and under California state law (for the purposes of the California Environmental Quality Act [CEQA]). Historic properties are cultural resources included in, or eligible for inclusion in, the National Register of Historic Places (NRHP) maintained by the Secretary of the Interior and per the NRHP eligibility criteria (36 Code of Federal Regulations [CFR] 60.4). See Section III.8.1.1 for more information on federal regulations and historic properties. Historical resources are cultural resources that meet the criteria for listing on the California Register of Historical Resources (CRHR) (14 California Code of Regulations [CCR] Section 4850) or that meet other criteria specified in CEQA (see Section III.8.1.2). See Section III.8.1.2 for more information on state regulations and historical resources.

This chapter discusses three types of cultural resources classified by their origins: prehistoric, ethnographic, and historic.

Prehistoric cultural resources are associated with the human occupation and use of California prior to prolonged European contact. These resources may include sites and deposits, structures, artifacts, rock art, trails, and other traces of Native American human behavior. In California, the prehistoric period began over 12,000 years ago and extended through the eighteenth century until 1769, when the first Europeans settled in California.

Ethnographic resources represent the heritage of a particular ethnic or cultural group, such as Native Americans or African, European, Latino, or Asian immigrants. They may include traditional resource-collecting areas, ceremonial sites, value-imbued landscape features, cemeteries, shrines, or ethnic neighborhoods and structures.

Historic-period cultural resources, both archaeological and built-environment, are associated with Euro-American exploration and settlement of an area and the beginning of a written historical record. They may include archaeological deposits, sites, structures, traveled ways, artifacts, or other evidence of human activity. Groupings of historic-period archaeological and built-environment resources are also recognized as historic districts and as historic vernacular landscapes.

Descriptions and examples of these cultural resource categories are provided in Section III.8.2, Cultural Resources Background and Context. This chapter also identifies federal and state laws and regulations that help protect cultural resources and presents local planning goals and policies related to the protection of cultural resources. Cultural resources within the Plan Area are described on a programmatic level and identified by ecoregion subarea.

III.8.1 Regulatory Setting

The following summarizes federal, state, and local regulations relevant to the protection of cultural resources. With the exception of local planning ordinances, which are listed alphabetically by county, regulations appear in this order: acts, executive orders, secretarial orders, bills, and codes. Within each of these categories, individual laws and regulations are organized by date of enactment.

III.8.1.1 Federal

Antiquities Act of 1906 (16 U.S.C. 431-433)

This act authorizes the president to designate as national monuments historic landmarks, historic and prehistoric structures, and other objects of historic or scientific interest on lands owned or controlled by the United States. The act allows the Secretaries of the Interior, Agriculture, and War (now Army) to issue permits for the examination of ruins, excavation of archaeological sites, and the gathering of objects of antiquity on lands under respective jurisdictions and identifies penalties for violations.

National Historic Preservation Act of 1966 As Amended (NHPA) (Public Law [PL] 89-665; 16 U.S.C. 470-1)

The NHPA requires each state to appoint a State Historic Preservation Officer (SHPO) and authorizes tribes to appoint Tribal Historic Preservation Officers (THPO) to direct and conduct a comprehensive state or reservation-wide survey of historic properties and maintain an inventory of such properties. This act also created the Advisory Council on Historic Preservation (ACHP), which provides both national oversight and dispute resolution. Further, the act established the NRHP and charged the National Park Service with maintaining the NRHP and promulgating various policies and guidelines for identifying, documenting, nominating, protecting, preserving and restoring historic properties that may be eligible for the NRHP. This act also has particular provisions for assuring the confidentiality of sensitive cultural resources information.

Sections 106 and 110 of this act have specific bearing on federal agency historic preservation activities and the management of historic properties. Section 106 requires federal agencies to consider the effects of their undertakings on historic properties and to afford

the ACHP a reasonable opportunity to comment on those undertakings. Under Section 106, an undertaking collectively refers to all projects, activities, or programs funded in whole or in part under the direct or indirect jurisdiction of a federal agency, including those carried out by or on behalf of a federal agency, those carried out by federal financial assistance, and those requiring a federal permit, license, or approval.

Federal agencies must meet their Section 106 responsibilities as set forth in the regulations (36 CFR Part 800). Federal agencies must conduct the necessary studies and consultations to identify cultural resources that may be affected by an undertaking, evaluate cultural resources that may be affected to determine if they are eligible for the NRHP (that is, whether identified resources constitute historic properties), and assess whether such historic properties would be adversely affected. Historic properties are resources listed on or eligible for listing on the NRHP (36 CFR 800.16[l][1]). A property may be listed in the NRHP if it meets criteria provided in the NRHP regulations (36 CFR 60.4). Typically such properties must also be 50 years or older (36 CFR 60.4[d]).

The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, or association (also see Section 18.2.2.1) and:

- A. That are associated with events that have made a significant contribution to the broad patterns of our history; or
- B. That are associated with the lives of persons significant in our past; or
- C. That embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess artistic value, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- D. That have yielded, or may be likely to yield, information important in prehistory or history.

Some property types do not typically qualify for the NRHP, however these properties may qualify if they fall into one or more of the following considerations (36 CFR 60.4):

- A. A religious property deriving primary significance from architectural or artistic distinction or historical importance; or
- B. A building or structure removed from its original location but which is significant primarily for architectural value, or which is the surviving structure most importantly associated with a historic person or event; or

- C. A birthplace or grave of a historical figure of outstanding importance if there is no appropriate site or building directly associated with [the person's] productive life.
- D. A cemetery which derives its primary significance from graves of persons of transcendent importance from age, from distinctive design features, or from association with historic events; or
- E. A reconstructed building when accurately executed in a suitable environment and presented in a dignified manner as part of a restoration master plan, and when no other building or structure with the same association has survived; or
- F. A property primarily commemorative in intent if design, age, tradition, or symbolic value has invested it with its own exceptional significance; or
- G. A property achieving significance within the past 50 years if it is of exceptional importance.

Section 106 defines an adverse effect as an effect that alters, directly or indirectly, the qualities that make a resource eligible for listing in the NRHP (36 CFR 800.5[a][1]). Consideration must be given to the property's location, design, setting, materials, workmanship, feeling, and association, to the extent that these qualities contribute to the integrity and significance of the resource. Adverse effects may be direct and reasonably foreseeable or may be more remote in time or distance (36 CFR 8010.5[a][1]).

The federal agency is required to consult with SHPO(s)/THPO(s); Indian tribes (federally recognized) and Native Hawaiian organizations; representatives of local governments; applicants for federal assistance, permits, licenses, and other approvals; and additional interested parties (e.g., the public). These parties may participate in the entire Section 106 process, including identifying historic properties, assessing adverse effects, and resolving adverse effects. The California SHPO and the Advisory Council of Historic Preservation (ACHP) strongly suggest that Indian tribes that are not federally recognized be consulted as "other interested parties" under 36 CFR Section 800.2(c)(5) or as members of the public 800.2(d).

BLM Role and Responsibility Under Section 106

Under the DRECP, the BLM's responsibility would be issuing rights-of-way to applicants who submit acceptable Plans of Development (36 CFR Part 800.16[y]) for lands administered by the BLM. All cultural resources within the Area of Potential Effects (APE) for undertakings approved or authorized by the BLM within the Plan Area are typically evaluated for eligibility for inclusion in the NRHP if effects cannot be avoided. To date, the BLM has been actively involved in consulting with federally recognized tribes to identify sacred sites and places of traditional religious and cultural significance that may be located

within the BLM's APE for the DRECP and to highlight any concerns with historic properties that may be affected by BLM's Land Use Plan Amendment (LUPA).

BLM State Protocol Agreement With the California State Historic Preservation Officer and the Nevada State Historic Preservation Officer (2014)

This agreement outlines how the BLM and the SHPO shall cooperatively implement the National Programmatic Agreement and the NHPA, Section 106, in California and in portions of Nevada managed by BLM California. The protocol streamlines Section 106 by eliminating case-by-case consultation with the SHPO on certain types of undertakings that culminate in "no historic properties affected" (36 CFR 800.4[d][1]) and "no adverse effect" findings (36 CFR 800.5[b]) (BLM 2012d). Large-scale renewable energy projects are specifically excluded from the Protocol and are reviewed under the 36 CFR Part 800 regulations or another Programmatic Agreement.

U.S. Fish and Wildlife Service Role and Responsibility Under Section 106

The U.S. Fish and Wildlife Service's (USFWS) responsibility would be to issue incidental take permits to applicants who demonstrate consistency with the terms and conditions of the General Conservation Plan (GCP) component of the DRECP. The USFWS's issuance of ESA section 10(a)(1)(B) incidental take permits for activities covered under the GCP constitutes an undertaking under Section 106 of the NHPA. The NHPA Section 106 consultation with SHPO and tribes will consider the impacts to cultural resources that could result from USFWS's authorization of incidental take of Covered Species.

USFWS defines the APE for the GCP as the site-specific locations where the activities that would result in incidental take would occur on the ground, and where any historic properties may be affected by the proposed undertaking (i.e., incidental take authorization). For the GCP, the APE would be all non-Federal lands within the DFAs that are open to project applicants for ground disturbance associated with renewable energy development, areas where permittee mitigation lands would be managed by the DRECP Coordination Group, and areas where permittee non-acquisition measures may be implemented. USFWS expects to develop a Programmatic Agreement with the SHPO as part of NHPA Section 106 consultation for the GCP. The Programmatic Agreement will establish the conditions permit applicants will be required to implement to assess the potential effects on historic resources that would result from site-specific projects, and to mitigate any adverse effects.

In addition, before issuing a permit under the Eagle Act for unintentional take of golden eagles, the USFWS will consult with Native American tribes to determine if issuance of the permit may affect traditional tribal activities, practices, or beliefs. The USFWS will

also consult with appropriate tribes on permit applications under the GCP for which golden eagles are considered a Covered Species to determine whether the tribes have concerns about historic properties of religious and cultural significance in areas of these federal undertakings.

Section 110 of the NHPA

Section 110 of the NHPA (16 U.S.C. 470h-2) generally provides that all federal agencies assume responsibility for the preservation and use of historic properties owned or controlled by such agencies. Under Section 110, federal agencies must establish a preservation program for the identification, evaluation, and nomination to the NRHP and for protection of historic properties. The act also includes particular provisions for assuring the confidentiality of sensitive cultural resources information.

National Trails System Act of 1968 (16 U.S.C. 1241 et seq.)

This act created a series of National Trails “to promote the preservation of, public access to, travel within, and enjoyment and appreciation of the open-air, outdoor areas and historic resources of the Nation.” Specifically, the act authorized three types of trails: National Scenic Trails, National Recreation Trails, and connecting and side trails. In 1978, as a result of the study of trails that were most significant for their historic associations, a fourth category of trail was added: the National Historic Trails.

A National Historic Trail is a congressionally designated trail that is an extended, long-distance trail, not necessarily managed as continuous, that follows as closely as possible and practicable the original trails or routes of travel of national historic significance. The purpose of a National Historic Trail is the identification and protection of the historic route and the historic remnants and artifacts for public use and enjoyment. A National Historic Trail is managed in a manner to protect the nationally significant resources, qualities, values, and associated settings of the areas through which such trails may pass, including the primary use or uses of the trail. Segments of the Old Spanish and Juan Bautista de Anza National Historic Trails are located within the Plan Area.

National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.)

NEPA is designed to (1) encourage productive and enjoyable harmony between [humans and their] environment; (2) promote efforts that will prevent or eliminate damage to the environment and biosphere and stimulate [human] health and welfare ; (3) enrich the understanding of the ecological systems and natural resources important to the nation; and (4) establish a Council on Environmental Quality. NEPA outlines federal governmental responsibilities for assuring that all Americans can enjoy safe, healthful, productive, and aesthetically and culturally pleasing surroundings. NEPA also aims to ensure the

preservation of important historic, cultural, and natural aspects of our national heritage, among other objectives. NEPA directs federal agencies to conduct systematic, interdisciplinary evaluations of the environmental impacts of proposed actions and alternatives. NEPA is an important tool for considering cultural and Native American interests, especially those that do not fall within the NHPA Section 106 authority.

Federal Land Policy Management Act (FLPMA) of 1976 (43 U.S.C. 1701 et seq.)

FLPMA established public land policy and guidelines for the administration, management, protection, development, and enhancement of public lands. In accordance with Section 103(c) of FLPMA, public lands are to be managed for multiple use and sustained yield. This includes a combination of balanced and diverse resource uses that considers the long-term needs of future generations for renewable and nonrenewable resources, including, but not limited to, recreation, range, timber, minerals, watershed, wildlife and fish, and natural scenic, scientific, archaeological, and historical resource values. Public lands are to be managed by (1) using planning guidelines based on multiple-use areas, including the protection of the above resources, and (2) reconciling competing demands.

Title VI of this act established several Designated Management Areas, including the California Desert Conservation Area (CDCA) and Bureau of Land Management Wilderness Study areas. Section 601 of FLPMA defines the CDCA and provides guidelines for the creation of a comprehensive, long-range plan for the management, use, development, and protection of the public lands within the CDCA.

Appendix VII of the CDCA Final Environmental Impact Statement (FEIS) describes the cultural resource element of the CDCA and outlines the methods employed by the BLM for gathering cultural resources data in the California Desert. Intensive surveys and fieldwork of field sampling regions (e.g., Western Mohave, Eastern Colorado) of the California Desert were carried out in the late 1960s and 1970s. Inventories identified 2,903 sites, which were classified into site types such as village, temporary camp, shelter/cave, and milling station. Sites were also classified based on associated landforms, such as mountain, hill, terrace, and ridge. After the inventory, the data were collected, digitized and/or mapped and used to generate cultural resource sensitivity maps. Criteria were designed for the determination of areas of (1) very high, (2) high, and (3) moderate, low or unknown cultural resource sensitivity/significance.

Archaeological Resources Protection Act of 1979 (16 U.S.C. 470aa-mm)

This act protects archaeological resources on public and Indian lands and acknowledges that archaeological resources are an irreplaceable part of America's heritage. This act applies when a project may involve archaeological resources located on federal or tribal

land. The act requires that a permit be obtained before excavation of an archaeological resource on such land can take place and that artifacts recovered during excavation are curated at an appropriate facility. The act also provides for the notification of Indian tribes when sites of cultural or religious importance could be harmed. This act establishes civil and criminal penalties for the unpermitted excavation, removal, damage, alteration, or defacement of archaeological resources on public or Indian lands. The act also has particular provisions for assuring the confidentiality of sensitive cultural resources information for archaeological excavation (PL 96-95, 16 U.S.C. 470aa-mm et seq.).

Native American Graves Protection and Repatriation Act of 1990 (25 U.S.C. 3001-13)

This act establishes requirements for the treatment of Native American human remains, associated and unassociated funerary objects, sacred objects, and objects of cultural patrimony on federal and tribal land. The act defines the ownership of human remains and associated and unassociated funerary objects and objects of cultural patrimony, giving priority to lineal descendants and Indian tribes (43 CFR 10). In the event of an inadvertent discovery of remains or items, work shall stop in the immediate area and the inadvertent discovery be protected. The federal agency is required to notify and consult with tribes that are, or likely to be, culturally affiliated with the remains and/or associated funerary objects.

Upon a valid repatriation request, the federal agency is required to return any such items to the lineal descendant(s) or specific tribe with whom such items are associated. The act and its implementing regulations contain similar noticing, consulting, and repatriation provisions for planned archaeological excavations (25 U.S.C. 3002[3][c]; 43 CFR 10.3). The act also has particular provisions for assuring the confidentiality of sensitive cultural resources information.

Omnibus Public Lands Management Act of 2009 (PL 111-11)

Congress established the National Landscape Conservation System (NLCS), which was created in June 2000 by the Department of the Interior and BLM to “conserve, protect and restore nationally significant landscapes that have outstanding cultural, ecological, and scientific values for the benefit of current and future generations.” The NLCS includes areas administered by the BLM such as national monuments, conservation areas, wilderness study areas, scenic trails or historic trails designated as a component of the National Trails System, components of the National Wild and Scenic Rivers System, components of the National Wilderness Preservation System, and public land within the CDCA administered by the BLM for conservation purposes (Section 202).

Inclusion in the NLCS does not create any new legal protections for the lands already designated as national monuments, conservation areas, wilderness study areas, scenic

trails or historic trails designated as a component of the National Trails System, components of the National Wild and Scenic Rivers System or components of the National Wilderness Preservation System. Inclusion in the NLCS system will create new legal protections through the land use plan decision for conservation lands in the CDCA. The BLM will use the LUPA element of the DRECP to define which lands within the CDCA are included in the NLCS.

Executive Order 11593 Protection and Enhancement of the Cultural Environment (1971)

This Executive Order established that federal agencies shall provide leadership in preserving, restoring, and maintaining the historic and cultural environment of the nation. Agencies shall identify, inventory, and nominate to the Secretary of the Interior, all sites, buildings, districts, and objects under their jurisdiction or control that appear to qualify for listing on the NRHP no later than July 1, 1973. Agencies shall develop measures to preserve and maintain federally and nonfederally owned sites, structures, and objects of historical, architectural, or archaeological significance.

Executive Order 13007 Indian Sacred Sites (1996)

Executive Order 13007 sets forth that in managing federal lands, executive branch agencies shall, to the extent practicable, permitted by law, and not inconsistent with essential agency functions, accommodate Indian religious practitioners' access to and ceremonial use of Indian sacred sites. Agencies are to avoid adversely affecting the physical integrity of these sites, maintain the confidentiality of such sites, and inform and consult on a government-to-government basis with tribes concerning any proposed actions or land management policies that may restrict future access to, or ceremonial use of, or adversely affect the physical integrity of sacred sites.

Executive Order 13287 Preserve America (2003)

Executive Order 13287 established that agencies shall provide leadership in preserving America's heritage by actively advancing the protection, enhancement, and contemporary use of the historic properties owned by the federal government. Each agency is to provide and maintain an assessment of the status of its inventory of historic properties and their ability to contribute to community economic development initiatives.

The Executive Order requires that, where consistent with its mission and governing authorities, and where appropriate, agencies shall seek partnerships with state and local governments, Native American tribes, and the private sector to (1) promote the unique cultural heritage of communities and of the nation and to realize the economic benefit that

these properties can provide, and (2) cooperate with communities to increase opportunities for public benefit from, and access to, federally owned historic properties.

Secretarial Order No. 3330 Improving Mitigation Policies and Practices of the Department of the Interior (2013)

This order directs Department of Interior agencies to develop department-wide mitigation strategies that will ensure consistency and efficiency in the review and permitting of infrastructure development projects, particularly those developments intended to combat climate change, but will also have impacts to natural and cultural resources. Strategies should use a landscape approach to identify and facilitate investment in key conservation priorities. Such mitigation strategies should be integrated early in the planning process.

Mitigation measures should be durable, and the mitigation decisions should be consistent and transparent. In response to this order, the DOI published “A Strategy for Improving the Mitigation Policies and Practices of the Department of the Interior.” This document provides guidelines for achieving a more effective mitigation policy and describes policies and procedures “necessary to successfully shift from project-by-project management to consistent, landscape-scale, science-based management of the lands and resources for which the Department is responsible” (BLM 2014[a]).

BLM National Programmatic Agreement With the Advisory Council on Historic Preservation and the National Conference of State Historic Preservation Officers (2012)

This agreement, as revised in 2012, “provided a systematic basis for identifying, evaluating, and nominating to the National Register historic properties under the bureau’s jurisdiction or control for managing and maintaining properties listed in or eligible for the National Register in a way that considers the preservation of their archaeological, historical, architectural, and cultural values and the avoidance of adverse effects in light of the views of local communities, Indian tribes, interested persons, and the general public; and that gives special consideration to the preservation of such values in the case of properties designated as having National significance” (BLM 2012[c]). The agreement maintains a Preservation Board to advise the director, assistant directors, state directors, and field-office managers in the development and implementation of BLM’s policies and procedures for historic properties. The agreement also directs state directors to establish protocols with the applicable SHPO, specifying how they will operate and interact under the programmatic agreement.

III.8.1.2 State

California Public Records Act (California Government Code Sections 6250 – 6276.48) (1968)

This Act provides for the nondisclosure of records relating to archaeological site information and reports maintained by, or in the possession of, the California Department of Parks and Recreation (State Parks), State Historical Resources Commission, State Lands Commission, NAHC, another state agency, or a local agency, including records obtained through consultation with Native American tribes and a state or local agency (California Public Records Act [CPRA], Section 6254.10 et seq.).

California Environmental Quality Act (California Public Resources Code Section 21000 et seq.) (1970)

CEQA established that historical and archaeological resources are afforded consideration and protection by the California Environmental Quality Act (CEQA) (14 CCR Section 21083.2, 14 CCR Section 15064). CEQA Guidelines define significant cultural resources under two regulatory designations: historical resources and unique archaeological resources.

CEQA defines that a historical resource is a “resource listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the CRHR”; or “a resource listed in a local register of historical resources or identified as significant in a historical resource survey meeting the requirements of Section 5024.1(g) of the Public Resources Code”; or “any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California, provided the agency’s determination is supported by substantial evidence in light of the whole record” (14 CCR Section 15064.5[a][3]).

While Traditional Cultural Properties (TCPs) and cultural landscapes are not directly identified by name (category) in the state definitions of historical resources, TCPs correspond to “places” in CEQA and cultural landscapes correspond to “areas” in CEQA. Places and areas are included as types of historical resources (see previous paragraph). Historical resources automatically listed in the CRHR include California cultural resources listed in or formally determined eligible for the NRHP and California Registered Historical Landmarks from No. 770 onward (PRC 5024.1[d]). Locally listed resources are entitled to a presumption of significance unless a preponderance of evidence in the record indicates otherwise.

Under CEQA, a resource is generally considered historically significant if it meets the criteria for listing in the CRHR. A resource must meet at least one of the following criteria (PRC 5024.1; 14 CCR Section 15064.5[a][3]):

1. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage. Title 14, CCR Section 4852(b)(1) adds, "is associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States."
2. Is associated with the lives of persons important in our past. Title 14, CCR Section 4852(b)(2) adds, "is associated with the lives of persons important to local, California, or national history."
3. 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. Title 14, CCR 4852(b)(3) allows a resource to be CRHR eligible if it represents the work of a master.
4. Has yielded, or may be likely to yield, information important in prehistory or history. Title 14, CCR 4852(b)(4) specifies that importance in prehistory or history can be defined at the scale of "the local area, California, or the nation."

Historical resources must also possess integrity of location, design, setting, materials, workmanship, feeling, and association (14 CCR 4852[c]).

An archaeological artifact, object, or site can meet CEQA's definition of a unique archaeological resource even if it does not qualify as a historical resource (PRC 21083.2[g]; 14 CCR 15064.5[c][3]). An archaeological artifact, object, or site is considered a unique archaeological resource if "it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria (PRC 21083.2[g]):

- Contains information needed to answer important scientific research questions and there is a demonstrable public interest in that information.
- Has a special and particular quality such as being the oldest of its type or the best available example of its type.
- Is directly associated with a scientifically recognized important prehistoric or historic event or person."

California Energy Commission Certified Regulatory Program

Under Sections 15250 to 15253 of CEQA, the power plant site certification program of the California Energy Commission (CEC) is exempt from the requirements for preparing EIRs, negative declarations, and initial studies. Under the Warren-Alquist Act of 1974 (PRC Division 15), the CEC was given responsibility for licensing thermal power plants 50MW and larger and the plants' related facilities such as transmission lines, fuel supply lines, water pipelines, etc. The Warren-Alquist Act is defined in more detail in Volume I.2. CEQA, Section 15252, specifies that any document used as a substitute for an EIR or negative declaration in a certified program shall include at least the following items:

1. "A description of the proposed activity, and
2. Either:
 - a. Alternatives to the activity and mitigation measures to avoid or reduce any significant or potentially significant effects that the project might have on the environment, or
 - b. A statement that the agency's review of the project showed that the project would not have any significant or potentially significant effects on the environment and therefore no alternatives or mitigation measures are proposed to avoid or reduce any significant effects on the environment. This statement shall be supported by a checklist or other documentation to show the possible effects that the agency examined in reaching this conclusion" (14 CCR Section 15252 [a]).

However, a certified regulatory program, such as the CEC's power plant siting program, remains subject to other provisions in CEQA such as the policy of avoiding significant adverse effects on the environment where feasible.

Additional California State Regulations

Public Resources Code (PRC), Section 5024 requires that each state agency develop policies for the preservation and maintenance of all state-owned historical resources under its jurisdiction listed in or potentially eligible for inclusion in the NRHP or registered or eligible for registration as a state historical landmark. Each state agency is required to submit an annual update to its 1982 inventory of all state-owned structures over 50 years of age under its jurisdiction listed in or which may be eligible for inclusion in the NRHP or registered or which may be eligible for registration as a state historical landmark. State agencies are required to submit documentation the SHPO for comment regarding any project that has the potential to "affect historical resources listed in or potentially eligible

for inclusion in the National Register of Historic Places or registered as or eligible for registration as a state historical landmark” (PRC Section 5024(f)).

Public Resources Code (PRC), Section 5024.1 (1992) establishes the CRHR as an authoritative guide for identifying which cultural resources are to be protected, to the extent prudent and feasible, from substantial adverse change. The CRHR eligibility criteria are consistent with the NRHP criteria and provide a base for determining a cultural resource to be significant under CEQA.

Public Resources Code (PRC), Section 5024.5 (1992) requires state agencies to notify the SHPO of any proposed action that would “alter the original or significant historical features or fabric, or transfer, relocate, or demolish historical resources on the master list” maintained by the SHPO. If the SHPO determines that the proposed action will adversely affect a listed historical resource, the head of the agency having jurisdiction over the historical resource is required to work with the SHPO to adopt prudent and feasible measures that will eliminate or mitigate the adverse effects.

Public Resources Code (PRC), Section 5097.9 et seq. (1982) establishes that both public agencies and private entities using, occupying or operating on state property under public permit, shall not interfere with the free expression or exercise of Native American religion and shall not cause severe or irreparable damage to Native American sacred sites, except under special, determined circumstances of public interest and necessity.

Public Resources Code (PRC), Section 5097.91-5097.94 et seq. creates the nine-member NAHC. The Governor appoints its members, and it is further specified that at least five members shall be elders, traditional people, or spiritual leaders of Native American tribes living in California. It further directs the NAHC to identify and catalog places of special religious or social significance to Native Americans, identify and catalog known graves and cemeteries on private lands, and perform other duties regarding the preservation and accessibility of sacred sites and burials and the disposition of Native American human remains and burial items.

Public Resources Code (PRC), Section 5097.95 et seq. directs all state and local agencies to cooperate with the NAHC by providing copies of appropriate sections of all CEQA environmental impact reports relating to property of special religious significance to Native Americans.

Public Resources Code (PRC), Section 5097.96 et seq. empowers the NAHC to prepare an inventory of sacred places located on public lands and review the administrative and statutory protections accorded these places. It further directs the NAHC to submit a report

to the Legislature recommending actions to preserve these sacred places and protect the free practice and expression of Native American religions.

Public Resources Code (PRC), Section 5097.97 et seq. requires the NAHC to investigate the effects of proposed actions by a public agency if those actions may either cause severe or irreparable damage to a Native American sacred site located on state property or inhibit access to that site. It also allows the NAHC to recommend mitigation measures if it finds, after a public hearing, that a proposed action would result in that damage or interference. This section also authorizes the NAHC to request action from the State Attorney General if the public agency fails to address mitigation measures.

Public Resources Code (PRC), Section 5097.98(b) and (e) et seq. (1982) requires a landowner on whose property Native American human remains are found to limit further development activity in the vicinity until that landowner confers with NAHC-identified most likely descendants to consider treatment options. It further enables those descendants, within 48 hours of notification by the NAHC, to inspect the discovery site and recommend to the landowner or the person responsible for the excavation, the means to treat or dispose of the human remains and any associated grave goods with dignity. In the absence of most likely descendants, or of a treatment acceptable to all parties, the landowner is required to reinter the remains elsewhere on the property in a location that will not be disturbed.

Public Resources Code (PRC), Sections 5097.99 et seq. (1982) establishes that the removal of Native American artifacts or human remains from a Native American grave or cairn, as well as the acquisition, possession, sale, or dissection with malice or wantonness of Native American remains, funerary objects, or artifacts from a Native American grave or cairn is a felony offense.

Public Resources Code (PRC), Sections 5097.991 et seq. establishes as state policy the repatriation of Native American remains, funerary objects, and associated grave artifacts.

Health and Safety Code (CHSC), Section 8010-8011 et seq. California Native American Graves Protection and Repatriation Act (2001) establishes a state policy that is partially consistent with the federal Native American Graves Protection and Repatriation Act. It attempts to ensure that all Indian human remains and cultural items are treated with dignity and respect. It encourages the voluntary disclosure and return of remains and cultural items by publicly funded agencies and museums in California. It also requires that the state provide, to tribes, the mechanisms necessary to file and follow up with repatriation claims.

California Government Code, Section 65560, 65562.5 et seq. Consultation With Native Americans on Open Space (2005) identifies the protection of Native American cultural places as acceptable designations of open space. It requires local governments to conduct meaningful consultation with California Native American tribes on the contact lists maintained by the NAHC for purposes of protecting cultural places located on open space.

III.8.1.3 Local

The following sections describe goals and policies for the protection of cultural resources outlined in county General Plans in the Plan Area. These sections focus on the promotion and preservation of prehistoric and historic cultural resources important to the cultural heritage of each community. Other areas of concern include Native American consultation and coordination during development proposals, the use of Native American monitors during construction, and exercising sensitivity and respect for human remains. Per Senate Bill 18 all local governments have a requirement to conduct consultations with tribes during the process of amending General Plans.

Imperial County General Plan, Conservation and Open Space Element, Section III, Goals and Objectives, Goal 3 establishes the primary goal of protecting and preserving important prehistoric and historic resources to advance scientific knowledge and maintain the traditional historic element of the Imperial Valley landscape (Planning/Building Department 2014).

Inyo County General Plan, Chapter 6, Conservation/Open Space Element, Section 6.6, Cultural Resources, Goal CUL-1 establishes the primary goal of preserving and promoting the historic and prehistoric cultural heritage of the county. Several policies are outlined for implementing this goal including (1) encouraging and promoting private programs and public/private partnerships that convey the cultural heritage of the area; (2) supporting and promoting the development of interpretive facilities that highlight the county's cultural resources; (3) preserving and protecting key resources that have contributed to the social, political, and economic history and prehistory of the area, unless overriding circumstances are warranted; (4) requiring the review of development and/or demolition proposals in accordance with the requirements of CEQA and the National Historic Preservation Act; and (5) requiring that county and private organizations work with appropriate Native American groups when potential Native American resources could be affected by development proposals (Inyo County Planning Department 2013).

Kern County General Plan, Chapter 1, Land Use, Open Space, and Conservation Element, Section 1.10.3, Archaeological, Paleontological, Cultural, and Historic Preservation Policy establishes the policy of "promoting the preservation of cultural and historic resources which provide ties with the past and constitute a heritage value to residents and

visitors” by implementing measures to (1) coordinate with the California State University, Bakersfield’s Southern San Joaquin Valley Information Center (formerly the Archaeology Inventory Center); (2) address archaeological and historical resources for discretionary projects in accordance with CEQA; (3) address preservation of paleontological resources where these resources are known to exist; (4) maintain a list of Native American organizations and individuals who desire to be notified of proposed discretionary projects; and (5) require the County Planning Department to assess the need for the involvement of a qualified Native American monitor for ground-disturbance activities on discretionary projects subject to CEQA (Kern County Planning Department 2009).

Los Angeles County General Plan 2035, Chapter 9, Conservation and Natural Resources Element, Section VIII, Historic, Cultural and Paleontological Resources establishes several goals for the protection and preservation of cultural resources. These include (1) mitigating all impacts from new development on or adjacent to historic, cultural, and paleontological resources to the greatest extent feasible; (2) supporting an inter-jurisdictional collaborative system that protects and enhances historic, cultural, and paleontological resources; (3) ensuring proper notification procedures to Native American tribes in accordance with Senate Bill 18 (2004); (4) promoting public awareness of historic, cultural, and paleontological resources; and (5) ensuring proper notification and recovery processes are carried out for development on or near historic, cultural, and paleontological resources (LACDRP 2014).

County of Riverside General Plan (Update), Chapter 5, Multipurpose Open Space Element outlines several policies for the protection and preservation of prehistoric and historic cultural resources. These include (1) establishing a cultural resources program in consultation with tribes and the professional cultural resources consulting community; (2) reviewing proposed development for the possibility of cultural resources and for compliance with the cultural resources program; (3) designating as open space and allocating resources and/or tax credits to prioritize the protection of cultural resources preserved in place or left in an undisturbed state; and (4) exercising sensitivity and respect for human remains from prehistoric and historic time periods and complying with all applicable laws concerning such remains (Riverside County Planning Department 2008).

County of San Bernardino 2007 General Plan, Chapter V, Conservation Element, Section C, Countywide Goals and Policies of the Conservation Element, Goal CO 3 establishes the primary goal of preserving and promoting the historic and prehistoric cultural heritage of the county. Several policies and programs are outlined for implementing this goal and are summarized here: (1) identify and protect important archaeological and historic cultural resources in areas of the county that have been determined to be sensitive for cultural resources; (2) identify and protect important archaeological and historic cultural resources when there will be disturbance of all previously undisturbed areas;

(3) design programs to preserve the information and heritage value of cultural and historical resources; (4) comply with SB 18 by consulting with tribes identified by the NAHC on all General Plan and specific plan actions; and (5) ensure that important cultural resources are avoided or that impacts are minimized to protect Native American beliefs and traditions (Land Use Services Department 2007).

San Diego County General Plan, Chapter 5, Conservation and Open Space Element, Section 5-16, Cultural Resources, Goal COS-7 establishes two primary goals of preserving and promoting the historic and prehistoric cultural heritage of the county. Goal COS-7 relates to the protection and preservation of archaeological resources. Several policies and programs are outlined for implementing this goal and listed here: (1) preserve important archaeological resources from loss or destruction and require development to include appropriate mitigation to protect the quality and integrity of these resources; (2) require development to avoid archeological resources whenever possible (if complete avoidance is not possible, require development to fully mitigate impacts to archaeological resources); (3) require that archaeological collections are curated in a culturally appropriate manner; (4) require consultation with affected communities, including local tribes, to determine the appropriate treatment of cultural resources; (5) require that human remains be treated with the utmost dignity and respect and that the disposition and handling of human remains will be done in consultation with the Most Likely Descendant (MLD) and under the requirements of federal, state and county regulations; and (6) coordinate with public agencies, tribes, and institutions to build and maintain a central database that indicates whether collections from each site are being curated, and if so, where, along with the nature and location of cultural resources throughout the San Diego County (Department of Planning and Land Use 2011).

III.8.2 Cultural Resources Background and Context

Cultural resources consist of historic and prehistoric archaeological sites, buildings, structures, objects, and remnants of the built environment, as well as places and areas of traditional importance typically of concern to Native American and other groups. The evaluations of these cultural resources, in accordance with the criteria established by the federal and state legislation and regulations described earlier, are made within a historic context. A historic context is defined as “the patterns or trends by which a specific occurrence, property, or site is understood and its meaning (and ultimately its significance) within history or prehistory is made clear” (NPS 1995). Key aspects include the kinds of resources present in a specific region and change through time in these resources.

To describe the historic context of the Plan Area, a variety of sources were consulted including scholarly journals and books, archaeological reports, environmental documents, websites, and museum manuscripts. The following discussion defines key terms, identifies

regional resource types, and outlines time periods in the Plan Area. Additional research, records search, field survey and documentation, and Native American consultation at the regional and project-specific levels should supplement this general programmatic level context during project-specific review.

III.8.2.1 Resource Types and Definitions

Following are definitions of key resource types discussed in this chapter:

Cultural resources is a broad term that encompasses historic and prehistoric archaeological sites, objects, structures, buildings and places and areas of traditional importance typically of concern to Native American groups and other ethnic groups.

Historic properties are cultural resources included in, or eligible for inclusion in, the NRHP and may include any prehistoric or historic district, site, building, structure, traditional cultural property, or object. This term includes artifacts, records, and remains related to and located within such properties. The term also includes NRHP-eligible properties of traditional religious and cultural importance to a Native American tribe that meet the NRHP criteria.

Historical resources meet the criteria for listing on the CRHR or other significance criteria found in CEQA (PCR Sections 21083.2[g], 21084.1; 14 CCR Section 4850 et seq., 15064.5[a]) and may include, but are not limited to, any object, building, structure, site, area, place, record, or manuscript that is historically or archaeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California.

Unique archaeological resources are archaeological artifacts, objects, or sites that meet CEQA criteria, even if not eligible for nomination on the CRHR (14 CCR 15064.5[c][3]). An archaeological artifact, object, or site is considered a unique archaeological resource if “it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets the following criteria: 1) contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information; 2) has a special and particular quality such as being the oldest of its type or the best available example of its type; 3) is directly associated with a scientifically recognized important prehistoric or historic event or person” (PRC 21083.2[g]).

Cultural resources that are significant to California history can receive additional special designations as a **California Historical Landmark (CHL)** or **California Point of Historical Interest (POHI)**. A CHL is a building, structure, site, or place that has been determined to meet at least one of the following criteria: “the first, last or most significant

of its type in the state or within the large geographic region (northern, central, or southern California); [is] associated with an individual or group having a profound influence on the history of California; [is] a prototype of, or an outstanding example of a period, style, architectural movement, or construction; or is one of the more notable works or the best surviving work in a region; or [is] a pioneer architect, designer or master builder.” A California POHI is a site, building, feature, or event that is “of local (city or county) significance and [has] anthropological, cultural, military, political, architectural, economic, scientific or technical, religious, experimental, or other value” (California State Parks 2013).

The **built environment**, broadly speaking, can be defined as “all space purposefully shaped and manipulated by human activity” (King 2011). As a class of resources, the built environment can include buildings, structures, objects, and sites that individually and collectively, as districts, reflect human history (King 2011).

Prehistoric cultural resources include archaeological sites such as lithic scatters/workshops, ceramic scatters, ground stone scatters, habitation sites or temporary camps, cremations/burials, prehistoric trails, stone quarries, bedrock milling features, rock art, architectural features, and rock features (adapted from Office of Historic Preservation 1995). Prehistoric cultural resources may be considered traditional cultural properties or may contribute to cultural landscapes or traditional cultural properties.

- Lithic scatters: sites containing chipped or flaked stones resulting from human manipulation. The number of artifacts which define a site vary and should be identified in consultation with appropriate state and federal agencies. Artifacts found in lithic scatters include flakes (those pieces of stone left over from creating a stone tool) or assay of rock for the purpose of manufacturing stone tools, and/or flaked stone artifacts such as projectile points.
- Ceramic scatters : a collection of pot sherds.
- Ground stone scatters: a collection of ground or pecked stone artifacts.
- Habitation site or temporary camp: a wide range of artifacts types and may have features such as hearths/campfires and/or bedrock milling features where seeds and grasses were ground.
- Cremation: human remains/bones that have been burned to the point of appearing calcined.
- Prehistoric trail: a linear feature formed through repetitive human use.
- Quarry: a source of lithic material with evidence of human use.

- Bedrock milling feature: bedrock mortars (bowl-like depression in bedrock in which seeds and other materials were ground with a pestle or cylindrical stone) or milling surfaces that indicate material processing activity such as grinding seeds or grasses.
- Rock art: pictographs, petroglyphs, and geoglyphs. Pictographs include any design painted on a rock surface. Petroglyphs contain a stone surface that has been scored by humans in a patterned manner for a purpose other than material processing. Geoglyphs or intaglios are works of art made from moving stones to expose cleared ground.
- Architectural features: any feature that indicates the presence of human construction activity such as fish traps and house rings.
- Rock feature: a patterned arrangement of rocks purposefully constructed.
- Isolates or isolated finds: one or two artifacts with no other associated features or artifacts.

Ethnographic resources are best defined in National Park Service Director’s Order #28 as “variations of natural resources and standard cultural resource types” that “are subsistence and ceremonial locales and sites, structures, objects, and rural and urban landscapes assigned cultural significance by traditional users” (NPS 1998). Director’s Order #28 also states that, “The decision to call resources ‘ethnographic’ depends on whether associated peoples perceive them as traditionally meaningful to their identity as a group and the survival of their lifeways” (NPS 1998). Ethnographic resources can also include traditional cultural properties, sacred sites, cultural landscapes, heritage resources, historic properties, or historical resources that are areas or places.

Traditional cultural properties (TCPs) are defined in NPS Bulletin 38 as a property “that is eligible for inclusion in the National Register because of its association with cultural practices or beliefs of a living community that are–rooted in that community’s history and are important in maintaining the continuing cultural identity of the community” (Parker and King 1998). Examples of Native American TCPs include locations associated with traditional beliefs of Native American groups about their origin, cultural history, or the nature of the world; traditional cultural practices such as plant gathering; or locations where Native American religious practitioners have traditionally gone and are known or thought to currently go to perform ceremonial activities per traditional cultural rules of practice. The TCPs on land administered by the BLM may be identified through BLM’s ongoing consultation with Native American tribes and/or any other interested parties.

Sacred sites are defined under Executive Order 13007 as:

“...any specific, discrete, narrowly delineated location on federal land that is identified by an Indian tribe, or Indian individual determined to be an

appropriately authoritative representative of an Indian religion, as sacred by virtue of its established religious significance to, or ceremonial use by, an Indian religion; provided that the tribe or appropriately authoritative representative of an Indian religion has informed the agency of the existence of such a site.”

Under EO 13007, federal agencies are required (to the extent practicable, permitted by law, and not clearly inconsistent with essential agency functions) to accommodate access to and ceremonial use of such sites on federal lands by Indian religious practitioners and avoid affecting the physical integrity of such sacred sites regardless of whether the sacred site qualifies as a historic property.

Cultural landscapes are defined by the National Park Service (NPS) in NPS Preservation Brief 36 as “geographic area[s], including both cultural and natural resources and the wildlife or domestic animals therein, associated with a historic event, activity, or person or exhibiting other cultural or aesthetic values” (Birnbaum 1994). Cultural landscapes may include TCPs as contributing elements.

NPS has defined four types of cultural landscapes that are not mutually exclusive: (1) historic sites are significant for their association with a historic event, activity, or person; (2) historic-designed landscapes were consciously designed or laid out by a landscape architect, master gardener, architect, or horticulturist according to design principles, or by an amateur gardener working in a recognized style or tradition; (3) historic vernacular landscapes evolved through use by the people whose activities or occupancy shaped it through social or cultural attitudes of an individual, a family, or community, and the landscape reflects the physical, biological, and cultural character of everyday lives; and (4) ethnographic landscapes contain a variety of natural and cultural resources that associated people define as heritage resources (Birnbaum 1994). Note that in the National Park Service’s usage, cultural landscapes can conform to more than one of the NRHP property types: site, building, structure, or district (Birnbaum 1994). Similarly, cultural landscapes may encompass more than one of CEQA and the CRHR’s historical resource types: building, structure, site, area, or place (PRC Section 5020.1[j]; 14 CCR Section 15064.5[a][3]; Office of Historic Preservation 1995).

The NPS is not the only agency to recognize the importance of cultural landscapes. For example, BLM guidance regarding land use planning calls out the importance of using social science information for resource planning decisions, and one of the relevant social science aspects highlighted in this particular document is the analysis of “how people interact with the landscape and sense of place issues” (BLM 2005). More recently, the BLM defined a landscape as “a large area encompassing an interacting mosaic of ecosystems and human systems that is characterized by a set of common management concerns” (BLM 2014a).

The importance of cultural landscapes has also been recognized on the state level. The California Office of Historic Preservation's (OHP) Statewide Historic Preservation Plan, 2013-2017, advocates for analyzing archaeological and ethnographic information together in the identification and evaluation phases of cultural landscape documentation. Moreover, OHP has specifically called out a need for cultural resources professionals working on renewable energy projects to shift focus from the site level to the landscape level of assessment (OHP 2013).

Historic-period archaeological resources are archaeological deposits, foundations, and other remains of human activity that were produced during the historic-period. Some examples of historic-era archaeological resources are camps, roads, trails, mines, railroads, graveyards, trash scatters, and military refuse. Camps are associated with a single activity like mining or railroad construction, and they are transient. Saddle trails and wagon roads are examples of roads and trails. Shafts, adits, tunnels, and buildings for habitation or storage are associated with mining activities. Trash scatters are made of discarded materials such as glass bottles, food cans, and construction debris. Military sites consist of remnants of military activities that include forts, camps, and outposts (BLM 1980). Historic-period archaeological resources may be considered traditional cultural properties or may contribute to cultural landscapes or traditional cultural properties.

Historic-period built-environment resources are elements of the built-environment, namely buildings, structures, and objects, that were constructed during the historic period. Examples of historic built-environment resources are town sites or districts, homesteads, canals, highways, single-family properties, and adobes. Town sites have evidence of permanent buildings and a wide range of activities. Homesteads have single-family homes or farmhouses and sometimes cultivated plots. Waterways and transmission lines are linear historic structures. Remnants of any of these built environment resources are considered historic period archaeological resources. Historic-period built-environment resources may be considered traditional cultural properties or may contribute to cultural landscapes or traditional cultural properties.

III.8.2.2 Prehistory

The prehistory of the Plan Area spans four general temporal periods: Late Pleistocene and Early, Middle, and Late Holocene. In light of the many cultural sequences, the temporal periods are described below.

Late Pleistocene (20,000 to 10,000 BP)

Human occupation before the Paleo-Indian Period has recently been established in North and South America (Erlandson et al. 2007). Prior to this study, some archaeologists had

argued that a Californian pre-Clovis occupation existed citing several sites within the Plan Area, including the Yuha Pinto Wash, Lake Manix, Calico Hill, and China Lake sites (Davis et al 1980). However, the dates assigned to these sites had been obtained from questionable materials that resulted in the archaeological community's skepticism of a pre-Clovis occupation in California (Erlandson et al. 2007; Sutton et al 2007). This point of view is changing with the acceptance of the Monte Verde site in Chile as dating to 14,300 BP (before the present), the Paisley Caves in Oregon dating as early as 14,300 BP (Jenkins et al. 2012), and the discovery of two sites (Arlington Man and Daisey Cave) on the Northern Channel Islands dating to as early as 12,700 BP and 11,500 BP, respectively. To date, no sites conclusively dated to the pre-Clovis period have been identified within the Plan Area (Erlandson et al. 2007; Schaefer and Laylander 2007; Sutton et al. 2007).

Human occupation during the Late Pleistocene has been termed the Paleo-Indian Period. The earliest part of the Paleo-Indian Period in the Plan Area, represented by the Clovis Complex, is characterized by the Fluted Point Tradition. The artifact assemblage for this tradition is characterized by lanceolate bifaces (blade edges) with edge-ground concave bases and at least one central flake-scar running from the bottom to the tip of the biface. However, the dates for these points are problematic in the Great Basin and California because no fluted points in California have been associated with radiocarbon dates nor found in association with Pleistocene fauna (Rondeau et al. 2007). Obsidian hydration measurements have been used to date fluted points in the Mojave Desert (Sutton et al. 2007). Fluted points are typically found on the surface and rarely in buried contexts, and have been identified more often in the north and west than in other parts of the Mojave Desert. Significant concentrations of these points appear in the drainage basins of the Pleistocene lakes China and Thompson (Sutton et al. 2007).

Olivella shell beads from several sites within the Plan Area, including the Stahl Site (CA-INY-182) in Inyo County, one site in Riverside County (CA-RIV-521), and the Goldstone, Awl, Rodgers Ridge, and Flood Pond sites in San Bernardino County (CA-SBR-2348, CA-SBR-4562, CA-SBR-5250, and CA-SBR-5251) have yielded radiocarbon dates within the Late Pleistocene range and indicate trade networks with coastal peoples. These sites were located adjacent to lakes or marshes (Erlandson et al. 2007; Fitzgerald et al. 2005; Sutton et al. 2007). Artifacts include debitage (waste materials produced during the manufacture of stone tools) and leaf-shaped bifaces (Moratto 1984). Traditionally the people during the terminal Pleistocene were thought to be mobile big-game hunters; however, recent studies suggest that their economies were more diverse and focused on smaller animals and plant foods, and that large game played a minor role (Erlandson et al. 2007). They lived in small populations in temporary camps located near permanent water sources (Sutton et al. 2007). Some researchers posit a terminal Pleistocene

presence in the Colorado Desert based on undated, heavily patinated cores or scrapers and sleeping circles (Schaefer and Laylander 2007).

Early Holocene (10,000 to 8,000 BP)

The best known archaeological complex during the Early Holocene is the Lake Mojave Complex. It spanned approximately 10,000 to 8,000 years ago. The Lake Mojave Complex consists of projectile points of the Great Basin stemmed series and abundant bifaces, along with steep-edged unifaces, crescents, and occasional cobble-core tools and ground stone implements. These sites tend to be surficial deposits found around fossil pluvial lakeshores such as Lake Mojave and China Lake. People of the Lake Mojave Complex had adapted to wetland environments and hunted and gathered. Site types in the Mojave Desert include residential bases, lithic workshops, and small camps. The people lived in small social units that used a forager-like strategy and revisited the same locations. In addition, a few reliable radiocarbon dates have been obtained from identified Lake Mojave Complex sites; however, some radiocarbon dates for these sites exist from Lake Mojave, Fort Irwin, Twentynine Palms, Rosamond Lake, and China Lake. (Sutton et al. 2007). Sites attributed to this period in the Colorado Desert are sleeping circles and heavily patinated scrapers or cores; both kinds of archaeological material still lack solid chronological verification. As noted above, these sites may have occurred during the terminal Pleistocene (Schaefer and Laylander 2007).

Middle Holocene (8000 to 5000 BP)

The Middle Holocene is characterized by the Pinto Complex (8,000 to 5,000 BP) in the Plan Area. Radiocarbon data from some sites in the Mojave Desert suggest that there was an overlap between the Lake Mojave and Pinto complexes and that the Pinto Complex may have begun in the Early Holocene (Sutton et al. 2007). During the first part of the Middle Holocene, a drier climate resulted in shallow and fluctuating lake levels. Sites occur within remnant pluvial lake basins, along ancient dry stream channels, spring/seep locations, and in upland contexts in the Mojave Desert. Larger Pinto Complex sites contain midden (refuse) and a broader range of archaeological materials than smaller archaeological sites. The Pinto Complex artifact assemblage includes Pinto points, leaf-shaped points and knives, drills, heavy-keeled scrapers, retouched flakes, choppers, hammerstones, shell beads, less frequent artiodactyl remains (goats, deer, antelope, etc.), and small fauna.

Handstones and flat millstones appear in abundance for the first time during prehistory. Based on this high abundance of milling tools, intensive plant exploitation was one of the inhabitants' subsistence strategies and access to plant resources must have been an important factor in determining site placement. Groups most likely consisted of multiple families living in centralized sites that were close to several locations used to gather resources

(Sutton et al. 2007). In the Colorado Desert, archaeological sites dating to the Middle Holocene are rare. One site, the early component of Indian Hill Rockshelter in Anza-Borrego Desert State Park, has been dated to this period (Cleland et al. 2003; Schaefer and Laylander 2007).

The Deadman Lake Complex recently has been identified in the Twentynine Palms area only. "Five radiocarbon dates from three separate site components range between *ca.* 7500 and 5200 cal (calibrated) BC" (9500 to 7200 BP) (Sutton et al. 2007). The date range in Table 15.3 in Sutton et al. 2007 is between 7970±70 and 6410±80 radiocarbon years before present (RCYBP). The area where Deadman Lake Complex is identified may expand with future work. The assemblage has small- to medium-size contracting stemmed points, an abundance of battered cobbles and core tools, bifaces, simple flake tools, milling tools, and shell beads from the Pacific Ocean and the Sea of Cortez. The artifacts are similar to Pinto Complex artifacts, but with greater use of local igneous materials, simple flake tools, and core implements. It is possible the Deadman Lake Complex reflects a localized version of the Pinto Complex with a different subsistence strategy in which the sites are located at higher elevations and thus have access to different resources than those of the Pinto Complex in remnant pluvial lake basins. Another possibility is that the Deadman Lake and Pinto complexes represent occupation of the same general region with different ecological niches by two different peoples (Sutton et al. 2007).

Late Holocene (After 4000 BP)

Following an approximately 1,000-year (*ca.* 5000 to 4000 BP) period of low site density in the Mojave Desert, the Gypsum Complex (*ca.* 400 to 2200 BP) emerged amid conditions somewhat wetter and cooler than the conditions of the Pinto Complex. The artifact assemblage of archaeological sites representing this period consists of corner-notched Elko, concave-base Humboldt, and shouldered contracting-stem Gypsum Cave points; leaf-shaped points with rounded or concave bases; large triangular knives with square bases; hammerstones; choppers; flake-based scrapers; scraper-planes; large drills with expanding bases; stone pendants; limited but regionally widespread shell beads; millstones; manos; mortars; and pestles. The presence of split-twig figurines and pit houses in the northeastern Mojave Desert reflected influence from the Southwest (Warren 1984). Evidence of ritual activities at several sites includes quartz crystals, paint, and rock art. Sites are smaller but more numerous and in more diverse locations; however, there is a paucity of major Gypsum Complex sites in the southern and eastern portions of the Mojave Desert. Trade and social complexity increased during the Gypsum Complex interval (Sutton et al. 2007). In the northeastern Mojave Desert, sites are located in dunes near mesquite, flat gravel-covered benches, lake margins, ridgetops, and along the Amargosa River and surrounding mountains (Warren 1984). Few sites in the Colorado Desert have been dated to this period (Cleland et al. 2003).

In Owens Valley and the eastern Sierra, the late Holocene is represented by the Newberry Period (3500 to 1350 BP). Gypsum Cave and Elko series projectile points characterize the early part of the period along with an increase in population. Locations of occupation sites shift from riverine places to desert scrub zones (Garfinkel 1976). The latter part of this period is characterized by highly mobile groups by some of the members of the community with the majority settled at winter base camps, caches of Elko and Humboldt Basal notched points, bifaces, and milling equipment (Eerkens and Spurling 2008; Faull 2007). The mobile groups had gathering camps and separate, specialized hunting camps that focused on bighorn sheep, other artiodactyls (even-toed hoofed animals such as antelope), and smaller mammals (Arnold and Walsh 2010). Sites dating to the latter part of this period are typically base camps with structures and associated lithic (consisting of stone) reduction loci. Obsidian quarrying at Coso, Casa Diablo/Upper Eastern Sierra, and Bodie Hills reached its peak during this period (Eerkens and Spurling 2008; Gilreath and Hildebrandt 1997). Sites occur more in the Volcanic Tablelands and northern Owens Valley than in the southern Owens Valley area (Polson 2009).

During the first part of the Late Holocene (1750 to 850 BP) in the Mojave Desert, evidence of the Rose Spring Complex appeared and marked the beginning of bow-and-arrow technology. These sites have well-developed middens and a variety of material culture, including Eastgate and Rose Spring projectile points, stone knives, drills, pipes, bone awls, milling tools, marine shell artifacts, and large quantities of obsidian (Sutton et al. 2007). The sites are found near springs (Saratoga, Rose), along washes, and sometimes along lakeshores (Rogers/Rosamond and Koehn lakes). Evidence of wickiups or grass huts, pit houses, and other structures has been found in the western Mojave Desert (Sutton et al. 2007).

The Rose Spring Complex is termed the Haiwee Period (1350 to 650 BP) in Owens Valley (Arnold and Walsh 2010). Sites dating to this period show evidence of more sedentary groups with semi-subterranean houses. The bow and arrow (Rose Spring and Eastgate points) and storage pits are introduced, while artifact caching mostly disappears (Faull 2007). Production at obsidian quarries drops off (Eerkens and Spurling 2008). The band-like structure is replaced by the household as the primary socioeconomic unit (Polson 2009).

The cultural complexes in the Mojave and Colorado deserts have been grouped in the Late Prehistoric Period, which spanned from about 850 BP to the time of the historic era (Sutton et al. 2007). There are three regional variants: (1) Hakatayan influence in the southern Mojave and Colorado deserts during the latter part of the period, (2) Ancestral Puebloan influence in eastern Mojave Desert during the early part of the period, and (3) Antelope Valley (western Mojave Desert), distinguished by its trade ties with coastal people and apparently limited Hakatayan influence (Warren 1984). Most archaeologists view the Late

Prehistoric Period as representing earlier forms of the Plan Area's modern ethnographic lifeways. A series of dry and wet episodes characterize the climate during this period (Sutton 1996, Weide et al. 1974).

In the southern part of the Mojave Desert and the Colorado Desert, sites are centered near the shores of Lake Cahuilla at its high freshwater mark, and sites along the Colorado River show evidence of a lacustrine (found in or near lakes) adaptation. Sites vary from simple pot drops to seasonal camps and more permanent residential bases. Settlement appears to be more intensive along the northwest shoreline of Lake Cahuilla in the Coachella Valley as represented by large-scale multiseasonal occupations and seasonal temporary camps. Sites along the eastern shoreline are less dense and smaller (Schaefer and Laylander 2007). As desert lakes dried during periods of low precipitation, people moved settlements away from the lakeshore to rivers, streams, and springs (Schaefer 1994). Artifacts in the southern Mojave Desert and the Colorado Desert include small projectile points (representing the use of bow-and-arrow technology), drills, flake scrapers, slate pendants, millstones, manos, metates (type of millstone), and shell beads. Burial practices also shifted from inhumations to cremations. Agriculture, paddle and anvil pottery (Brownware and Buffware from Arizona), and Desert Side-notched points were introduced in this period. These have been attributed to being influences of the Patayan or Hakataya on the Colorado River.

Other cultural traits include rock art and an intricate long-distance trade network as evidenced by numerous trail systems. Also, fish traps and house pits can be found along the northwestern shoreline of Lake Cahuilla (Schaefer and Laylander 2007). During the latter part of the Late Prehistoric Period, Lake Cahuilla evaporated forcing the area of occupation to shift to the Colorado River (Warren 1984). The majority of sites in the Colorado Desert date to this period (Laylander et al. 2010).

Similar to Lake Cahuilla, lakes in the Mojave Desert started to dry up and site locations were centered near ephemeral water sources during the latter part of the Late Prehistoric Period. Numic-speaking populations moved into the southern part of the western Mojave Desert at this time. Sites are centered in the Coso Volcanic Field, Coso Hot Springs, and near the Mojave River. There is evidence of Ancestral Puebloan materials near the turquoise mines near Halloran Springs, along the Mojave River and in the Cronese Lakes area (Sutton 1996).

In Owens Valley, the Late Prehistoric Period has been termed the Marana Period (650 BP to contact). The smaller household settlements continue. Cottonwood and Desert Side-notched points and Owens Valley Brownware (a coil and scrape type of construction) are introduced, and there is an increase in ground stone tools as harvesting green pinyon nuts become the focus (Bettinger 1989; Eerkens and Spurling 2008).

Populations dependent upon agriculture as well as hunting and gathering occupied the eastern Mojave Desert centered along the Colorado River. After 750 BP, the Chemehuevi moved into the eastern Mojave Desert. Artifact assemblages are similar to the Colorado Desert ones and consist of Desert series projectile points, buffware and brownware ceramics, shell and steatite beads, slate pendants, incised stones, and milling tools (Sutton et al. 2007).

Research Topics

Research topics commonly appearing in the California Desert archaeological literature include ceramic traditions, horticulture, trade and exchange, rock art traditions, and trails.

Ceramic Traditions

Schaefer and Laylander (2007) note that buffware pottery occurring within the Colorado Desert was initially assigned to the Hakataya ceramic series (Schroeder 1958, 1979). Subsequent studies (Waters 1982a, 1982b, 1982c) place it within the Lowland Patayan Ceramic Tradition. Both typologies are based on surface collections of sherds, with little data resulting from stratigraphic excavations or associated radiocarbon dates. Schroeder focuses upon details of temper, inclusions, and surface treatment, and Waters emphasizes rim form. Both attempt to define geographic limits of production for each type. Difficulties in applying either typology and problems with stratigraphic integrity, archaeological contexts, and anomalous associated radiocarbon dates, have allowed only gross chronological estimates and have limited identification of manufacturing regions.

In the Salton Basin, some sites dating between about 1600 to 750 BP contain pottery (Love and Dahdul 2002). This evidence suggests pottery was not introduced or rarely used prior to about 950 BP. Earlier dates from the preceding 200 years suggest Lake Cahuilla may have attracted Colorado River peoples (and their pottery). Early ceramic dates from the Colorado Desert correspond closely with the inception of widespread use of Tizon Brownware pottery in the Peninsular Ranges and along the Pacific Coast, although some dates suggest initial introduction of ceramics by 1200 BP, if not before (Griset 1996; Lyneis 1988).

Viewed regionally, pottery use within the Late Prehistoric Period of the Colorado Desert can be divided into three periods (Arnold et al. 2002; Love and Dahdul 2002; Waters 1982a, 1982b, 1982c). Patayan I times, about 1250 to 950 BP, witnessed the inception of several ceramic traditions. During Patayan II times, 950 to 500 BP, increased local manufacture and use of pottery occurred. Patayan III, 500 to 240 BP, saw the introduction of "Colorado Buff" pottery, and the westerly spread of ceramics to coastal southern California.

With respect to social and cultural factors governing pottery adoption and use within the Colorado Desert, recent analyses of pottery from the Mojave Desert and surrounding areas provide models focused on behavioral implications regarding its manufacture and function. One concern has been with determining if ceramic vessels were locally made (Eerkens 2001; Eerkens et al. 1999, 2002a; Griset 1996). Neutron activation analysis and petrographic studies have been used to identify chemical and material signatures (Eerkens et al. 2002b). Pottery manufacture does not appear to have been organized at a higher regional level. Instead, pots generally appear to have been locally produced and used, with limited exchange of pots between different groups. Production appears to have been organized at an individual or family level, emphasizing production of largely utilitarian wares.

A relatively high number of elemental signatures suggesting higher levels of mobility characterize pottery from sites in the northern Mojave (Eerkens et al. 2002b). In addition to a higher degree of residential mobility, Eerkens (2003b) suggests people inhabiting the northern Mojave Desert produced a fairly large number of pots. The combination of high mobility and a fairly high level of pottery production is seen as leading to caching pots near lowland wetlands, which were fixed in the landscape, development of pottery attributes promoting fuel consumption, and a high degree of standardization of largely utilitarian ceramics.

Sedentism in the Owens Valley, northeast of the Plan Area, appears to have developed concurrently with, or immediately prior to, an emphasis on resource storage, at approximately 1450 BP. Small seed intensification appears to have occurred about 700 to 600 BP, at the time brownware pottery became widely used. He concludes that social models, such as those suggesting the activities of aggrandizers or the stabilization of long-distance exchange networks, do not explain these developments. The role played by decrease(s) in population-to-resource balance(s), resulting from increased population pressure, remains unclear.

Eerkens (2003c; 2004) suggests the significant increase in small seed use and the advent of brownware pottery around 700 to 600 BP are linked. People focused upon seeds because they could easily be privatized. That is, they could be individually owned and would not be subject to unrestricted sharing. Pots were a critical component of small seed intensification, because they generally were individually made and owned and could be used within houses, allowing food preparation and consumption to occur in private. Privatization of small seeds may have resulted from increased population size yielding more potential “freeloaders,” new community kinship structures, and the creation of resource surplus.

Horticulture

At the time of sustained Euro-American contact, 240 years ago, native peoples living along the Lower Colorado River and the Colorado Delta were growing a wide variety of cultigens and wild grasses that provided 30% to 50% of their subsistence economy (Bean and Lawton 1993; Castetter and Bell 1951; Schaefer and Laylander 2007). Annual flooding along the Colorado rejuvenated the soil and provided enough moisture to sustain crops. Lower Colorado River agriculture is presumed to have begun around 1250 BP. It probably spread either from the Hokokam area (to the east) or from northern Mexico (to the southeast) (McGuire and Schiffer 1982).

Horticulture subsequently appears to have spread west from the Colorado River. Desert Tipai peoples practiced floodplain agriculture along the New and Alamo rivers. They also constructed small dams and ditches along washes to direct irrigation water onto adjacent terraces. Agricultural elements probably reached the Imperial Valley around 300 BP. Seed caches and mythological references to cultigens possibly indicate very late prehistoric adoption of agriculture. However, the caches contained both native and Old World cultigens. Thus it is unclear if agriculture penetrated west of the Peninsular Ranges in southern California before Euroamerican contact and the sustained influence that came with the establishment of Spanish missions.

Native cultigens may have reached the western Colorado Desert through trade instead of by local production (Schaefer and Laylander 2007). Within the Colorado Desert, several archaeological sites have ceramic jars or rock-lined cache pits containing food remains of native or Old World plants (cf., Bayman et al. 1996; Swenson 1984; Wilke 1978; Wilke and McDonald 1989; Wilke et al. 1977). Pumpkin seeds occur in human coprolites (fossilized feces) from the Myoma Dunes at the north end of Lake Cahuilla, and in a ceramic jar from the west shore of Lake Cahuilla, north of the Fish Creek Mountains. The latter dated to 580 to 340 BP (Wilke 1978; Wilke et al. 1977). Early accounts of the first Mexican intrusion into the Coachella Valley in 1822-1823 noted walk-in wells dug by the Cahuilla that would have allowed for pot irrigation of crops (Schaefer and Laylander 2007).

Early-to mid-nineteenth-century Cahuilla archaeological sites contain glass beads, flaked glass, domestic animal bones, carbonized maize and tepary beans, and uncarbonized gourds. Abundant evidence exists indicating the Cahuilla practiced irrigated agriculture during the early- and mid-nineteenth century. The small quantity of macro- and micro-fossil cultigen remains from prehistoric archaeological deposits in Cahuilla territory strongly suggests agriculture did not play a significant role in the Cahuilla economy until the early nineteenth century. Early historic intensification of agriculture may have resulted from final desiccation of Lake Cahuilla, regional population growth, decreased mobility, and acculturation, including introduction of Euroamerican irrigation techniques.

The Owens Valley Paiute were Great Basin Numic-speaking horticulturalists (Lawton 1976; Liljeblad and Fowler 1986; Steward 1930, 1933, 1938, 1941, 1970). Ditch and surface irrigation of blue dicks (*Brodiaea capitata*), yellow nut grass (*Cyperus esculentus*), and spikerush (*Eleocharis* sp.), was practiced. This most likely developed during late prehistoric times, possibly triggered by increased population pressure resulting from climatic change and/or immigration (Bouey 1979).

In the Mojave Desert and environs, in the approximate period from 2000 to 800 BP, agriculture first was practiced in southern Nevada and environs as a consequence of the Anasazi Intrusion (Warren 1984). Maize, squash, beans, grain amaranth, and sunflowers were grown. Agriculture was practiced along with foraging for wild plants and animals. Fields probably were irrigated in some manner, and agriculture appears to have intensified over time. Contrary to this, Wallace (1980) suggests Native American agriculture in the Mojave region was exclusively a historic-period phenomenon.

Yohe (1997) notes aboriginal cultigens, such as melons, squash, and beans, were present at two rockshelters dating to the late nineteenth or early twentieth century in Death Valley. Fowler (1995; 1996) details garden horticulture among the Southern Paiute and Panamint and Timbisha Shoshone. Stream-irrigated gardens were cultivated, in which corn, beans, squash, sunflowers, and amaranth were grown. These groups also planted gardens near springs, had communal fields with irrigation ditches, and unirrigated stream-bank garden plots. Various land management practices were employed, including intentional burning, clearing, pruning, and coppicing (cutting trees to the ground to encourage growth), transplanting and cultivation, and cleaning of water sources.

Winter and Hogan (1986) note that during protohistoric times, agriculture was practiced by the southern California/Nevada Chemehuevi and Ash Meadows, Pahrump, Las Vegas, and Moapa Southern Paiute bands. Among the crops grown were corn, beans, squash, and sunflowers. Forms of plant husbandry directed toward non-domesticates included burning to encourage growth of new plants, broadcast seed sowing, and irrigation of wild stands of bulb and seed plants (Winter and Hogan 1986). These practices are thought to have begun prehistorically, continuing and possibly expanding during early historic times.

Trade and Exchange

As Schaefer and Laylander (2007) note, prehistoric and ethnohistoric Colorado Desert peoples had a highly developed network of connections linking locations within and beyond the region. High mobility produced considerable cross-cultural interaction and integration in spite of frequent open aggression and warfare between different groups. This integration and interaction occurred between mobile hunter-gatherers and sedentary horticultural peoples. They are archaeologically manifested by the spatial distribution of

site types, rock art, artifacts (especially ceramics and shell ornaments), and toolstones (especially obsidian).

Archaeologists trace the dynamics of prehistoric trade in the Colorado Desert by— analyzing the distributions of artifacts made from various toolstones, shell beads and ornaments, and ceramic types and composition (Schaefer and Laylander 2007). As previously stated, with respect to toolstones, obsidian from Obsidian Butte is fairly commonly represented in sites located within montane and coastal southern California (Hughes 1986; Hughes and True 1982; Laylander and Christensen 1988). Obsidian from sources in northern Baja California may have been routed via the Colorado Desert to coastal southern California sites (McFarland 2000). Wonderstone (a glass striped rhyolite) from the Rainbow Rock source is present in western San Diego County and the northern Coachella Valley (Bean et al. 1995; Pignoli 1995). Material for steatite (soapstone) artifacts found in Colorado Desert sites probably comes from sources in the Peninsular Ranges and Southern Channel Islands. Material for argillite (clay) artifacts may be from a central Arizona source.

Artifacts made from shellfish species inhabiting the northern Sea of Cortez occur in coastal southern California and the Great Basin (Bennyhoff and Hughes 1987; Fitzgerald et al. 2005) and may have been traded through the Colorado Desert (Schaefer and Laylander 2007). Shells from southern California coastal species have been found at a number of Colorado Desert sites and in the Southwest (Ford 1983). These artifacts may have resulted from direct procurement of shells or exchange. At the Elmore site, associated with the protohistoric recession of Lake Cahuilla, shell debitage (waste materials produced from chipping a hard substance such as shell or stone) indicates local manufacture of shell beads and ornaments (Rosen 1995). In the Coachella Valley, shell artifacts may reflect close ties to peoples living along the Santa Barbara Channel.

A cache of Lower Colorado Buffware (i.e., Patayan) anthropomorphic figurines found in an Orange County site indicates interregional connections (Koerper and Hedges 1996). These also are suggested by the frequency of Lower Colorado Buffware (i.e., Patayan/Hakataya) pottery throughout the Colorado Desert (Bean et al. 1995; Cordell 1997; McGuire 1982; Schaefer and Laylander 2007; Schroeder 1979; Shaul and Hill 1998; Waters 1982a, 1982b, 1982c). However, its use occurred among a number of prehistoric peoples practicing divergent settlement and subsistence patterns. Consequently little effort has been made to refine or apply the Patayan tradition as an integrative model.

Davis (1961) and Sample (1950) note that a considerable degree of historic-period trade between Native Americans occurred within and across both the Mojave and Colorado deserts. Trade networks across the deserts extended to the Yokuts, Chumash, and Gabrielino. Native peoples living along the Colorado River received and reciprocated goods from many groups living to the east and west.

Trails

During prehistoric and ethnohistoric times, an extensive network of Native American trails was present in the Colorado Desert and environs (Apple 2005; Cleland 2007; Earle 2005; Davis 1961; Fowler 2009; Heizer 1978; ; McCarthy 1993; Melmed and Apple 2009; Sample 1950; Von Werlhof 1986). Segments of many trails are still visible, connecting various important natural and cultural elements of landscape, for example, these trails are often marked by votive stone piles (cairns) and ceramic sherd scatters (pot drops). These trails were used both for exchange and ceremonial purposes (Fowler 2009). Overviews of trail systems that enter the Plan Area can be found in works by Davis (1961) and Fowler (2009).

Examples of these trails include a late prehistoric-early historic Native American trail traversing roughly east/west through the Chuckwalla Valley (Johnson and Johnstone 1957). Johnson (1980) identifies this route as part of the Halchidhoma Trail (recorded as CA-Riv-53T) running from San Bernardino through San Gorgonio Pass to the Colorado River at present day Palo Verde Valley. The Mojave Trail was a route that connected the Pacific Coast with the interior deserts. This traveled from near Fort Mohave to Soda Lake, and then followed the Mojave River, passing out of the Plan Area through Cajon Pass into the Los Angeles Basin (Fowler 2009).

The Salt Song Trail is a Southern Paiute sacred trail corridor partially within the Plan Area that makes a circuit between the Mojave Desert and the southern portion of the Wasatch Range, passing through Utah, Nevada, California, and Arizona. At times it closely follows the Colorado River and passes out of the Plan Area. The trail is believed to be traveled by the deceased, with the aid of traditional practitioners who, through song, story, and prayer, usher the deceased along the path on their post-burial journey to the afterlife. The trail consists of physical marks on the land, both trail marks and natural land patterns, wayside locations where specific songs and other ceremonies are sung or conducted, and a corridor along the trail system (Musser-Lopez and Miller 2010).

Rock Art Traditions

Rock art is a fundamental component of the landscape throughout the Plan Area and consists of “designs, motifs, or patterns that are permanently placed on a feature on the natural landscape” (Whitley 2000). It is important to note that using the word “art” can imply that the designs were created for reasons analogous to that of western art (Whitley 1998). However, production of rock art occurred for a variety of reasons, many of which may never be known. Rock art can be seen as a type of communication between the creator and the viewer that is embedded in the landscape. This communication can involve a variety of messages over time, including signifying territorial claims, messages between the spiritual world and the corporeal world or between living beings and the dead, spiritual

lessons between elders and students, or signs about the natural or spiritual world surrounding the rock art location. Portions of rock art meaning are no longer available because the creators of the rock art are no longer present to provide intent, thus meaning must be deciphered. Interpretation usually relies on the depiction informed by the relationships between various depictions and relationships of various rock art locales to other known natural and cultural locales, as well as ethnographic, ethnohistoric, and current oral history evidence and analogy (Braun and Gates 2013).

In California, rock art is generally classified based upon the designs and motifs of the art, the medium (i.e., rock art that is painted - pictographs, etched/chiseled/pecked - petroglyphs, or scraping large areas of desert pavement to reveal a lighter subsoil - earth figures/intaglios/geoglyphs), and ethnographic and ethnohistoric evidence (Braun and Gates 2013). Within the Plan Area, the majority of the rock art belongs to Great Basin Tradition, although the Earth Figure Tradition is found along the Colorado River and in portions of the Colorado Desert and the California Tradition is found in the Peninsular Ranges (Braun and Gates 2013; Whitley 1998).

Californian Tradition rock art generally consists of monochrome pictographs displayed on a small number of panels within small rock shelters and depicting up to a dozen motifs. Common colors include red, black, and white, with yellow, orange, and blue appearing less frequently. The most common motifs are simple geometric patterns, including circles and discs, "ladders," diamonds, and zigzags. The last two are often identified as representing rattlesnakes. When figural motifs appear, they are usually simple depictions of humanoids, handprints, and lizard-like figures (Whitley 1998).

Earth figures are typically found in clusters of one or a few images, and are usually found in association with archaeological features (see trails section above). The most common motifs are thin anthropomorphic or human figures, but other motifs such as animals, concentric circles, crosses, arrows, quarter-moons, a maze-like grid, six-pointed stars, and interlocking ovals are also found. The earth figures are important sites for the Yuman speakers along the Lower Colorado River and are critical to understanding the relationship of these groups to the Xam Kwatcan/Dream Trail (Braun and Gates 2013).

The Great Basin Tradition is the primary rock art tradition of the Plan Area, found principally east of the Peninsular Ranges in the desert regions and portions of the Sierra Nevada (Whitley 2000). It differs from the California Tradition in that it is primarily engraved, rather than painted, it is concentrated in specific locales, and it consists of different motifs. Whitley Two variants are identified, the Great Basin Painted and the Great Basin Engraved. The latter variant is dominated by pecked and abraded motifs, fine-line incising or scratching, a variety of geometric designs, including curvilinear meanders, dot patterns, grids, zigzags, concentric circles, spirals, and circular designs.

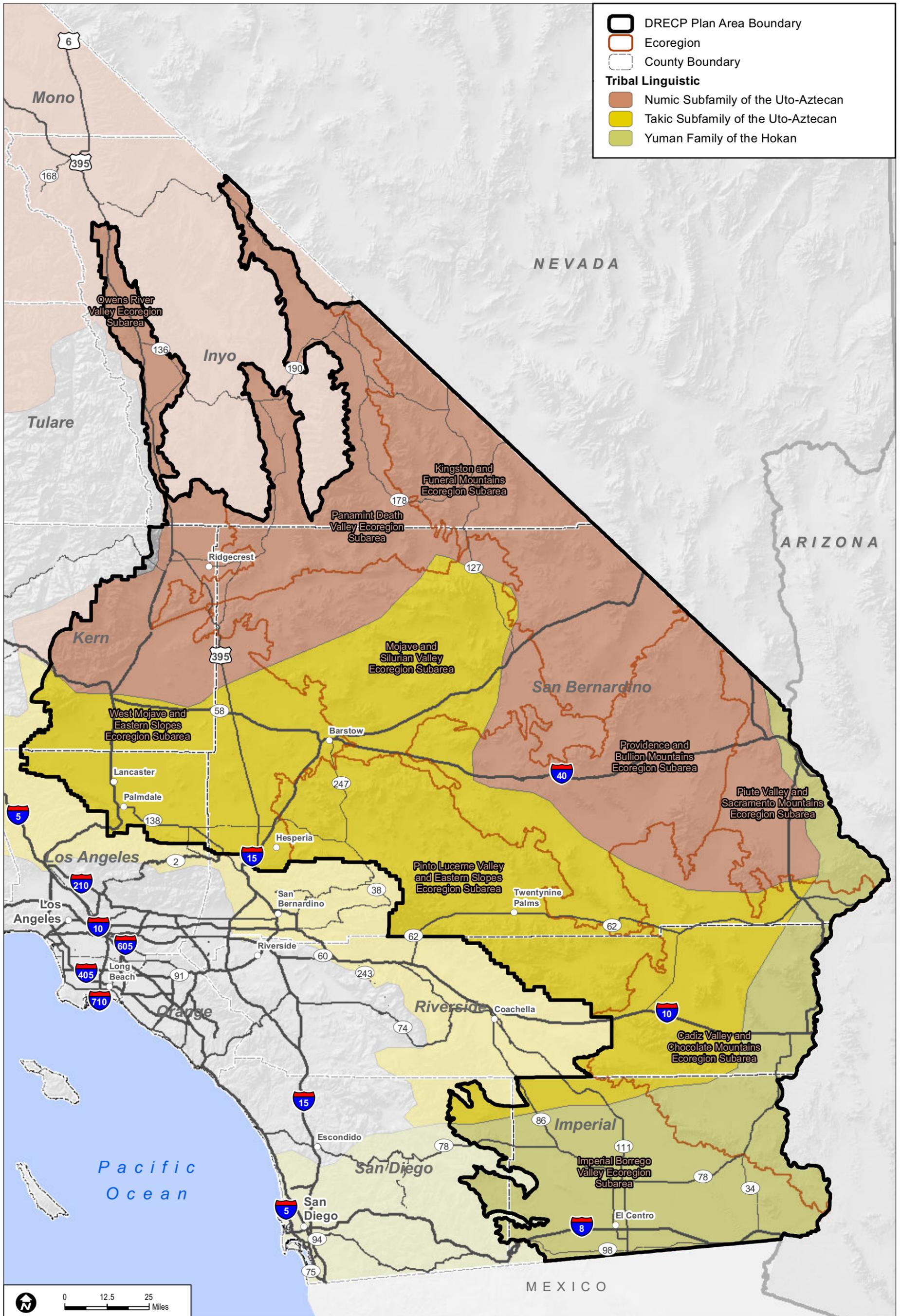
The scarce representational images from the Colorado Desert are predominately snakes and simple humanoid figures with exaggerated fingers and toes (Braun and Gates 2013; Whitley 2000).

III.8.2.3 Ethnographic Context

The following section provides an ethnographic context for the Native American groups in the Plan Area. It is organized by language family, and it describes the role of linguistic evidence in understanding the prehistoric and historic development of tribal territories. This section identifies the cultural characteristics that distinguish each tribe from one another. It also discusses the influence of European colonialism and later intrusions by miners and ranchers onto tribal lands on Native American groups in the Plan Area. The current population, location, and federal status of each tribe is also provided.

Chapter III.9, Table III.9-1, Tribes with Traditional Ties to the Plan Area, lists federally and non-federally recognized tribes in the Plan Area, current tribal enrollment, and their cultural affiliation. Chapter III.9, Section III.9.2, Tribes with Interests in the Plan Area, describes what it means to be a “federally recognized” Indian tribe and the relationship of the United States government to federally recognized tribes. It is important to keep in mind that many of the cultural practices associated with various tribes, such as plant gathering, continue to be practiced today.

Two major linguistic divisions exist within the Plan Area: the Hokan and the Uto-Aztecan stocks (Figure III.8-1). Within the Plan Area, the Hokan stock includes the Yuman language family and the Uto-Aztecan stock includes the Numic and Takic language families. For the purposes of this discussion, within the Plan Area these language stocks associate reasonably well with the two primary geomorphic areas: the Mojave Desert/Western Great Basin and the Colorado Desert/Colorado River. Uto-Aztecan languages—Numic and Takic speakers—are found in the Mojave Desert and Hokan languages—Yuman speakers—in the Colorado Desert (Golla 2007, 2011; Kendal 1983; Miller 1986; Shipley 1978).



Sources: ESRI (2014); CEC (2013); BLM (2013); CDFW (2013); USFWS (2013); California. Handbook of North American Indians, vol. 8 (1978); Southwest. Handbook of North American Indians, vol. 10 (1983); Great Basin. Handbook of North American Indians, vol. 11 (1986)

FIGURE III.8-1
Tribal Linguistic Divisions in the Plan Area

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The five Plan-Area Native American groups that speak Yuman languages are the Kumeyaay, Cocopah, Quechan, Halchidhoma, and Mojave (sometimes spelled Mohave). Speakers of languages derived from the Numic branch of the Uto-Aztecan language group include the Kawaiisu, Southern Paiute (Pahrump, Moapa, and Chemehuevi), Western Shoshone (including Panamint or Koso), and Owens Valley Paiute; the speakers of the languages derived from the Takic branch include the Kitanemuk, Serrano, and Cahuilla (Kelly and Fowler 1986; Luomala 1978; Thomas et al. 1986; Warren 1984).

Evidence for population movements and the location of these groups at contact have been evaluated based on diagnostic artifacts, projectile points, milling technology and ceramics, burial patterns, and specialty items such as crescentics and beads. It should be noted that the ethnographically recorded groups associated with the Plan Area and the boundaries between groups were not like those of modern nation states and were instead indistinct, changeable, and permeable. Contact between groups, such as trade, marriage, and conflict all affected boundaries, as did changes in environmental conditions.

Yuman Language Family (Colorado Desert)

The general linguistic explanation for the distribution of modern California Indian languages is that the Hokan stock has the greatest antiquity and was, at one time, distributed throughout California (Taylor 1961). In the far Southwest, the Hokan stock is represented by the Yuman family. The Yuman family extends from the Colorado River Valley across the southern portion of California and Northern Mexico to the Pacific Ocean (Golla 2007, 2011; Kendal 1983).

The languages that make up the Yuman family exhibit great similarity, as demonstrated by examination of comparative vocabularies (Wares 1968). The division and expansion of the proto-Yuman language may have begun *ca.* 2000 BP (Laylander 1985). Laylander believes the expansion originated from northern Baja California. Howard Law (1961), on the other hand, believes that the Proto-Yuman speakers are native to a desert area similar to their present location, which is primarily in the lower Colorado River Valley. This would seem to indicate that the Yuman languages may have expanded from the lower Colorado River Valley or Baja California about 2,000 years ago (Golla 2011).

Confirmation, or refutation, of the long-term development and ultimate expansion of the Yuman languages from the Colorado River or Baja California is critical to the explanation of the cultural development of southern California. If the Yuman languages expanded roughly 2,000 years ago, they either filled a void or replaced an existing speech community.

As noted earlier, the five tribes that speak Yuman languages are the Kumeyaay, Cocopah, Quechan, Halchidhoma, and Mojave. To understand what archaeological materials these

tribes may have left behind, it is important to understand where their traditional territories are located. Below is a description of lands traditionally occupied by each tribe (Figure III.8-2). The territory locations suggested by this figure are approximate and cannot represent all of the nuances of multiple tribe, present day ancestral claims.

Kumeyaay

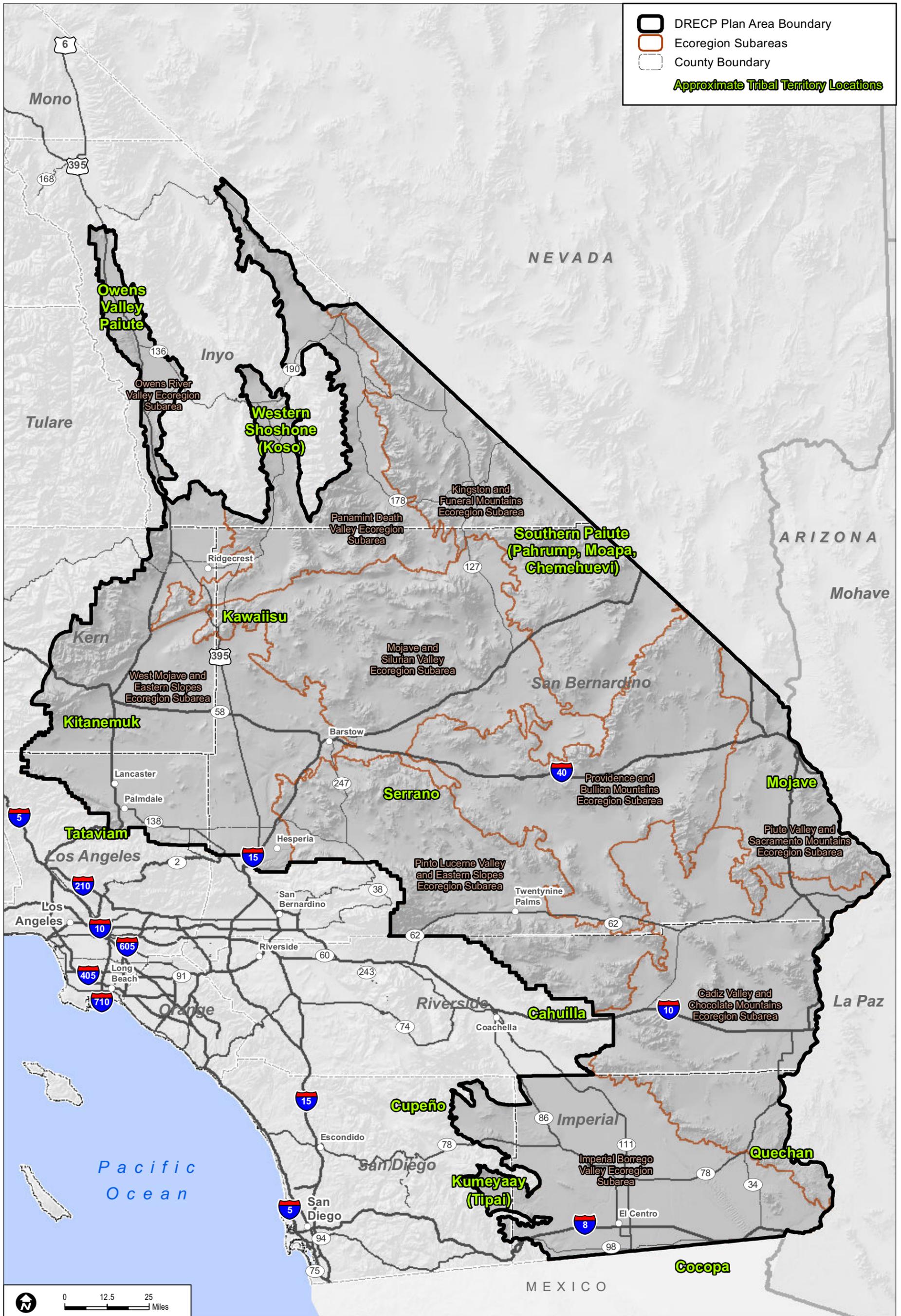
At the time of the Spanish exploration of the area, the Kumeyaay (also referred to as the Tipai, or Kumiai in Baja California) occupied the southern two-thirds of San Diego County from Agua Hedionda on the north to Todos Santos Bay, Mexico, on the south, the Imperial Sand Dunes on the east, and the Pacific Ocean on the west (Luomala 1978).

Beginning with the Spanish invasion in 1769, continuing through the Mexican Period of 1826 to 1848, and on through the American Period, the Kumeyaay were forced off their ancestral lands. Nearly all of the Kumeyaay lands were taken into private ownership or made U.S. government holdings (Viejas Band of Kumeyaay Indians 2014). In 1875 President Grant gave an executive order that set aside Indian land and allowed for the (later) establishment of reservations for the Santa Ysabel, Pala, Sycuan, La Jolla, Rincon, Viejas, and Capitan Grande bands. In 1891 the La Jolla and Cuyapaipe Reservations were established and in 1893, the Pauma, Yuima, and Rincon Reservations were established. In 1932 the Barona Band of Kumeyaay were forced off ancestral land on the San Diego River to make way for the El Capitan Dam and reservoir, and they were relocated to the present-day Barona reservation (Kumeyaay.com 2014).

Today, Kumeyaay tribal members are divided into 12 separate tribal organizations – Barona, Campo, Ewiiapaayp, Inaja-Cosmit, Jamul, LaPosta, Manzanita, Mesa Grande, San Pasqual, Santa Ysabel, Sycuan, and Viejas. Kumeyaay governments have jurisdiction over approximately 70,000 acres in mostly eastern San Diego County, from El Cajon, Lakeside, Poway, and Ramona, to the desert (Viejas Band of Kumeyaay Indians 2014).

The Ewiiapaayp Tribe is a federally recognized Indian tribe listed in the Federal Register as “The Cuyapaipe Community of Diegueño Mission Indians of the Cuyapaipe Reservation, California.” Their reservation was established in 1893 and increased in size to 4,542 acres by 2000. The Ewiiapaayp tribal office is located in Alpine, California (Gates and Crawford 2010).

Campo Kumeyaay Nation was established in 1893 on the Campo Indian Reservation, and has 351 enrolled members. The tribe operates Muht Hei, Inc, an economic development branch that with a casino, construction materials facility, and a wind energy facility. The Tribal government consists of a seven member Executive Committee elected by the General Council of the Tribe (Campo Kumeyaay Nation 2009).



- DRECP Plan Area Boundary
- Ecoregion Subareas
- County Boundary
- Approximate Tribal Territory Locations



Sources: ESRI (2014); CEC (2013); BLM (2013); CDFW (2013); USFWS (2013); California. Handbook of North American Indians, vol. 8 (1978); Southwest. Handbook of North American Indians, vol. 10 (1983); Great Basin. Handbook of North American Indians, vol. 11 (1986)

FIGURE III.8-2
Tribal Territories in the Plan Area

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The Manzanita Band of Kumeyaay Nation reservation, with a population of 69 people, encompasses 3,580 acres in the Carrizo Desert located approximately 20 miles west of the northwestern shore of the Salton Sea (SCTCA n.d.).

La Posta Tribe of Kumeyaay Indians is a small tribal group with lands adjacent to the Manzanita and Campo Tribes located in the Jacaumba Mountains near the Mexico – California border. It operates a casino and has tribal headquarters on the reservation near the town of Boulevard California (Gates and Crawford 2010).

The Iipay Nation of Santa Ysabel, formerly the Santa Ysabel Band of Diegueño Indians, occupy the Santa Ysabel Indian Reservation, near Lake Henshaw, California. This reservation is over 15,000 acres spread between three tracts of land. The tribal government is divided into four branches: General Council, Legislative, Executive, and Judicial. The General Council consists of over 700 adult voting members, the Executive Branch is comprised of a Chairman and Vice-Chairman, the Legislative Branch consists of seven Legislators, and the Judicial is composed of tribal judges (Iipay Nation of Santa Ysabel 2014).

The Mesa Grande Band of Mission Indians is a federally recognized tribe of Kumeyaay closely related to the Iipay Nation of Santa Ysabel. Their 920-acre reservation in Black Canyon is located near Santa Ysabel (SCTCA n.d.).

The Sycuan Band of the Kumeyaay Nation is a federally recognized tribe with a 640-acre reservation in El Cajon, California. The tribal government is made up of a seven-member council. The Sycuan operate the Sycuan Casino (Sycuan Tribe 2012).

The San Pasqual Band of Mission Indians is a Kumeyaay federally recognized tribe, with a reservation near Lake Wohlford. The Tribe is led by a Tribal Council comprised of five tribal members. The 1438-acre reservation is home to the Valley View Casino (San Pasqual Band of Mission Indians n.d.).

The Jamul Indian Village is a federally recognized tribe of Kumeyaay. Their reservation is a mere 6 acres in size, located ten mile south of El Cajon. . Their tribal government is a six person tribal council (SCTCA n.d.; Jamul Indian Village 2014).

The Inaja-Cosmit Band of Indians is a federally recognized tribe of Kumeyaay with a 852 acre reservation near Julian, California (SCTCA n.d.)

The Barona Band of Mission Indians is a federally recognized tribe of Kumeyaay. Their reservation is in the mountain foothills of San Diego County, near Lakeside, California. It has a total area of 5,903 acres. Tribal membership is about 490 (Barona Band of Mission Indians Tribal Office n.d.; White 2011). Together with the Viejas Band of Kumeyaay Indians,

the Barona share a joint-trust patent for the 15,000 acres of the Capitan Grande Reservation that were not flooded in 1931 to create El Capitan Reservoir (Viejas Band of Kumeaay Indians n.d.).

The Viejas Band of Kumeyaay Indians, is a federally recognized tribe of Kumeyaay residing on a 1,600-acre reservation in the Viejas Valley, east of the community of Alpine in San Diego County, California. Like the Barona Band, their ancestors were forced to leave the Capitan Grande Reservation when the central portion of it was flooded to create the El Capitan Reservoir in 1931. Together with the Barona Band, the Viejas Band share a joint-trust patent for the 15,000 acres of the Capitan Grande Reservation (Viejas Band of Kumeaay Indians n.d.). The Viejas tribal membership is approximately 290 (White 2011). The Viejas Band government is formed of the general council of all eligible voting tribal members and a seven member tribal council. The tribe operates a variety of economic ventures, including the Viejas Casino (Viejas Band of Kumeaay Indians n.d.).

Cocopah

The Cocopah lived on the west side of the lower Colorado River delta from the tidewater area, north from a little above the latitude of Volcano Lake or Cerro Prieta to several miles south of the U.S.–Mexico border (Castetter and Bell 1951). Today there are two branches of Cocopah, one in the United States (“American Cocopah”) and one in Mexico (“Mexican Cocopah”). This division resulted from the actions of the United States and Mexican governments concerning Indians residing within the boundaries of these two dominant nations. For instance, in 1917 the United States gave the “American Cocopah” title to three small land areas under the jurisdiction of the Yuma agency (Williams 1983). Increased border enforcement in 1930 exacerbated the separation of the two groups (Kelly 1977).

The Cocopah in Arizona began to organize in 1961, beginning with a revision of the tribal constitution and bringing electricity to tribal lands. The Cocopah have four reservations: Cocopah West Reservation, Cocopah East Reservation, Cocopah North Reservation, and Cocopah Lots 5 and 6 (Williams 1983). In 1964 the Cocopah Indian Tribe formed its first constitution and a five-person tribal council. Originally the reservations totaled 1,800 acres, but in 1985 the Cocopah obtained an additional 4,200 acres of reservation land, including the North Reservation, via the Cocopah Land Acquisition Bill. A chairperson, vice chairperson, and three council members currently lead the tribe (Cocopah Indian Tribe n.d.). The tribe also employs a cultural resources director to facilitate cultural resource issues for them.

Quechan

Quechan territory was centered at the confluence of the Gila and Colorado rivers (present-day Yuma, Arizona), but extended north on the Colorado about 15 miles above the confluence and 30 miles up the Gila (Kroeber 1925). In 1605 Spanish explorer Juan de Oñate first noted the Halchidhoma, who were northern Quechan, below the confluence of the Gila and Colorado rivers. There were eight pueblos, with the northernmost containing 160 houses and 2,000 people. In 1702, Jesuit Padre Eusebio Kino saw them north of this confluence. They had moved up the Colorado River to escape Mojave and Quechan enemies. By 1776, when Francisco Garcés traveled through the area, the Halchidhoma had moved farther north along the Colorado River near Parker, Arizona, due to continued raids from the Mojave and Quechan (Yumans). Eventually the Halchidhoma settled along the confluence of the Gila and Salt rivers among the Maricopa in Arizona after the Mojave drove them east (Kroeber 1925).

The Quechan Tribe is a federally recognized tribe with its governmental office in Yuma, Arizona (BIA 2012). The U.S. government established the Fort Yuma-Quechan Reservation on the California side of the Colorado River in 1884, although Euro-American settlers appropriated much of the land. Reservation lands were further broken up by allotment to individual Quechan members in 1912. The tribe ratified a constitution and elected a seven-person tribal council in 1936. In 1978 the tribe had 25,000 acres of land restored to them (Bee 1983). Today, the Quechan Tribe's reservation spans the Arizona-California border at the Colorado River near the confluence with the Gila River and encompasses 45,000 acres of land.

A president, vice president, and five council members head the tribal government. Business enterprises include a 700-acre agricultural lease to a nontribal farmer and a sand-and-gravel lease to a private company. The tribe also manages trailer and RV parks, a museum, a casino, a utility company, and a fish and game department (Inter-Tribal Council of Arizona 2011). The tribe employs a cultural resources director and maintains the Quechan Cultural Committee.

Mojave

The Mojave controlled the area north of the Bill Williams River up to the present Nevada border, but their main settlements were in the Mojave Valley from about Davis Dam, Arizona, at the north to the vicinity of Topock in the south (Castetter and Bell 1951; Kroeber 1925; Stewart 1983). They also lived south in the Colorado River Valley in 1604 when Juan de Oñate's Spanish expedition passed through the area (Stewart 1983). They also inhabited the Chemehuevi Valley periodically after the Halchidhoma were forced to move east (Kroeber 1925). Violent confrontations occurred between the Mojave and beaver trappers

in the 1820s over disputes regarding payment for beaver taken from the river. The U.S. annexation of Arizona and increasing military presence in the 1850s led to the establishment of a military outpost in 1859 on the east bank of the Colorado River to give safe passage to American immigrants traveling from east to west. The military fort was originally called Camp Colorado but was later renamed to Fort Mojave. When the fort closed in 1891, the buildings were turned into a boarding school, which operated until 1930 (Fort Mojave Indian Tribe 2014; NPS 2014b).

Currently, the Mohave Indians are members of one of two tribes: (1) former residents of the Fort Mojave Reservation in Arizona, now residing in Needles, and (2) Mohave of the Colorado River Reservation, part of the Colorado River Indian Tribes (Stewart 1983).

The Fort Mojave Indian Tribe of Arizona, California, and Nevada is a federally recognized tribe with its governmental seat in Needles, California (BIA 2012). The Fort Mojave Reservation covers almost 42,000 acres in Arizona, California, and Nevada. The land is divided into three major segments: 23,669 acres in Mojave County, Arizona; 12,633 acres in San Bernardino County, California; and 5,582 acres in Clark County, Nevada (Fort Mojave Indian Tribe 2014). The Fort Mojave tribal government consists of a chairperson, vice-chairperson, secretary, and four council members. The tribe operates the Avi Resort and Casino, which contains a casino, hotel, restaurants, and a movie theater. The tribe also hosts an annual Pow Wow every February (Fort Mojave Indian Tribe 2014). The tribe's cultural affairs are directed by the Aha Makav Cultural Society.

Colorado River Indian Tribes

The Colorado River Indian Tribes include people from four distinct groups within the membership: Mohave, Chemehuevi, Hopi, and Navajo. Their approximately 300,000-acre reservation includes portions of San Bernardino and Riverside counties in California and La Paz County in Arizona. The tribal government is composed of a nine-member council that includes a tribal chairman, secretary, and treasurer. Active tribal membership is about 4,070 as of 2009. The largest element of the tribal economy is agriculture, but economic development includes sand and gravel quarrying, real estate development, and tourism, with the BlueWater Resort and Casino in Parker, Arizona (Colorado River Indian Tribes 2009).

Cultural Characteristics for the Yuman Language Speakers

Cultural characteristics for Yuman language speakers in the Colorado Desert include cremation of their dead, hunting and gathering, river agriculture, and diagnostic artifact classes. Three diagnostic artifact classes have been commonly used to define the appearance of the ethnographic Yuman groups. These include Cottonwood and Desert Side-notched

points, use of mortars, and the appearance of Tizon Brown and Colorado River Buff wares. Although point types have not been identified in the ethnographic literature, there are numerous references to bow hunting. Both Desert Side-notched and Cottonwood points, used for bows, have been typically associated with ethnographic occupations of the area. These point types have an established date range of 650 BP to 50 BP in the Colorado Desert (Justice 2002).

Acorns were also gathered and traded from groups to the west. For the Kumeyaay, the use of mortars has been ethnographically associated with the processing of acorns. Mortars were usually in bedrock outcrops and were sometimes portable (Luomala 1978). In the Colorado Desert, mortars were made of cottonwood and used to process acorns, mesquite pods, screwbeans, and various seeds (Castetter and Bell 1951, Gifford 1931). These types of portable mortars have not survived though stone mortars have. Dating the appearance of mortars could help mark the appearance of Yuman speakers in the area.

Numic/Takic Language Subfamilies (Mojave Desert/Western Great Basin)

Golla (2007, 2011) proposes the development of the Takic languages in California as dating from prior 2000 years ago, and that the Numic languages developed somewhat more recently between 1500 and 2000 years ago. The time for the split between the Numic dialects has been estimated to have begun— between 1000 and 800 years ago (Golla 2011).

In most explanations, the expansion of the Uto-Aztecan languages within the Mojave Desert and Western Great Basin show similar time depths to those of the Yuman languages in the Colorado Desert (see “Yuman Language Family [Colorado Desert]” above). As with the Yuman languages, expansion toward the coast either filled a void or replaced an existing speech community. Early explanations described the “Uto-Aztecan wedge” based principally on the assumption of a broad Hokan dispersed language group in which the Chumash and Yuman speakers were split by the Uto-Aztecan speakers who moved from the Mojave Desert, the southern Sierra Nevada, and southern San Joaquin Valley to the coast in what is present-day Los Angeles and Orange counties (Sutton 2009).

As noted earlier, the four groups that speak languages from the Numic branch are the Kawaiisu, Southern Paiute (Moapa, Las Vegas, Pahrump, and Chemehuevi), Western Shoshone (specifically the Panamint or Koso), and Owens Valley Paiute. The three groups that speak languages from the Takic branch include the Kitanemuk, Serrano, and Cahuilla. As stated above, to understand what archaeological materials may have been left behind by these groups, it is important to know where their traditional territories are located. The following is a description of lands traditionally occupied by each group.

The Kawaiisu, or “Nuwa,” occupied the southern end of the Sierra Nevada watershed by the Piute and Tehachapi mountains at the line between the Great Basin and California cultures. The habitat was in the mountainous ridge between the Mojave Desert and the San Joaquin Valley. One source suggests that there were Mountain Kawaiisu who lived in the Piute and Tehachapi mountains and Desert Kawaiisu who lived east of Tehachapi into southern Death and Panamint valleys where they sometimes lived with Shoshone (Garfinkel and Williams 2009).

Relocation by the United States government in the late 1800s resulted in the loss of much of the Kawaiisu traditional dress, music, language, and knowledge of traditional practices. In the early 2000s, there were only five native speakers remaining and few tribal members who had retained knowledge of the tribe’s traditions. In response to this, in 2002 tribal members came together to form the Kawaiisu Language and Cultural Center. In 2007, the Center became a nonprofit organization and formed an 11-member board of directors. The Center provides for Kawaiisu tribal members and members of other tribes with tools for teaching traditional language and culture (Kawaiisu Language and Cultural Center 2014; Lawrence 2009). Currently, the Kawaiisu number around 250 and are a non-federally recognized Indian tribe (Kawaiisu Language and Cultural Center 2014). An additional Kawaiisu organization is the Kawaiisu Tribe of the Tejon Indian Reservation. This is also not a federally recognized tribe. Members are represented by a five-member tribal council (Kawaiisu Tribe of the Tejon Indian Reservation 2014).

The Southern Paiute represent a population of people who were the traditional inhabitants a territory ranging from the northeastern Mojave Desert through southern Nevada into southwestern Utah and northwestern Arizona to the north of the Colorado River. The Pahrump and Las Vegas bands are the two most southwestern groups of Southern Paiute, except for the Chemehuevi.

The Pahrump Paiute Tribe, located in Pahrump, Nevada, is not a federally recognized tribe, but is recognized as an established tribal entity by the State of California and is often consulted by federal land managing agencies that operate within their traditional territory. The tribe currently consists of approximately 100 tribal members. The tribe is led by a chairperson and is based in Pahrump, Nevada. While the Pahrump Paiute Tribe has no reservation, they do assert an ancestral territory that includes the southeastern portion of Inyo County and the northeastern corner of San Bernardino County, as well as the adjacent portion of Nevada. The primary focuses of the tribe are to maintain their unique cultural identity, to protect important cultural resources that are in harm’s way of various projects, and to attain federal recognition (Gates 2012).

The Las Vegas Tribe of Paiute Indians of the Las Vegas Indian Colony is a federally recognized tribe. It consists of approximately 71 enrolled members with a 3,800-acre

reservation generally referred to as “Snow Mountain,” located several miles north of Las Vegas. The Pahrump Paiute and Las Vegas Paiute are closely related to one another and to some of the Moapa Tribe membership. Isabel Kelly identified both Pahrump and Las Vegas under the Las Vegas Paiute Tribe, however, each tribe has continuously maintained their distinct identities and function independently. The tribe’s original reservation was a 10-acre plot of land located in downtown Las Vegas and deeded to the tribe in 1911 by a private ranch owner. The 10-acre plot is still part of the reservation. The tribe has a constitution adopted in 1970, and is governed by a tribal council. The tribe has several businesses, including an extensive golf resort, gas station, and two smoke shops. Recent issues that involve the Tribe concern on-going desecration of tribal cultural sites, including graffiti of sacred sites in the Red Rock area, a popular tourist destination for visitors to Las Vegas. Cultural resources issues are dealt with by the Tribal Environmental Protection Office (Gates 2012).

The Chemehuevi are considered a subgroup of the larger Southern Paiute group. They are differentiated from the rest of the Southern Paiute by their cultural ties with the Mojave and Quechan, from whom they also took many loanwords. The Chemehuevi occupied territory west of and along the Colorado River, south of Needles into eastern Mojave Desert as far east as Providence Mountains (Kelly and Fowler 1986; Kroeber 1925). In 1776, no Chemehuevi were along the Colorado River; however, they moved into the Chemehuevi Valley after the Halchidhoma were forced to move east with the Maricopa. After 1867, they moved back to the remote desert when war broke out with the Mojave (Kroeber 1925). The modern descendants of the Chemehuevi belong to a number of different federally recognized tribes, including the Colorado River Indian Tribes (see “Yuman Language Family [Colorado Desert]” above), the Chemehuevi Tribe of the Chemehuevi Reservation, and the Twenty-Nine Palms Band of Mission Indians.

The Chemehuevi Tribe is a federally recognized tribe and the official name is the Chemehuevi Indian Tribe of the Chemehuevi Indian Reservation (BIA 2012). Rather than remain on the Fort Mojave Reservation near Needles, California, where they had been forced to live with some of the Mojave, the Chemehuevi requested that the federal government establish their home in their traditional area, the Chemehuevi Valley. They remained there and at Beaver Lake and Cottonwood Island until dam construction forced them out in 1929. The Chemehuevi Reservation was founded on the Colorado River in Chemehuevi Valley north of Parker, Arizona (Kelly and Fowler 1986).

In 1935, Congress authorized the Metropolitan Water District to obtain as much reservation land as needed to create Parker Dam, which ultimately caused the inundation of 8,000 acres of tribal lands in 1940. In the 1960s, some Chemehuevi members from the Colorado River Indian Reservation joined with off-reservation tribal members in reorganizing the Chemehuevi Tribe and reactivating the Chemehuevi Reservation. The

Chemehuevi Indian Tribe's constitution was established February 14, 1970 (Rusco and Rusco 1978).

The current reservation encompasses 32,000 acres of trust land with 30 miles of Colorado River frontage (Chemehuevi Indian Tribe 2013). The tribe is based in Havasu Lake, California (BIA 2012). An executive committee comprising a chairperson, vice chairpersons, and secretary treasurer oversees daily tribal operations and enterprises. The tribe also has a nine-person tribal council and a tribal court (active since 1996). The tribe's Cultural Center seeks to educate its younger generations about contemporary and traditional Chemehuevi life. The tribe operates the Havasu Landing Resort & Casino (Chemehuevi Indian Tribe 2013b, 2013c, 2013d, 2013e).

The Twenty-Nine Palms Band of Mission Indians is a federally recognized tribe of Chemehuevi people whose reservation is near Coachella. The Tribe consists of descendants of those who traditionally inhabited the desert area of the Oasis of Mara (Mar'rah) near the City of Twentynine Palms and Joshua Tree National Park. Most of the tribe moved to the Morongo Reservation in 1908 because of the Office of Indian Affairs determination that the tribal children needed to attend school there. In 1910, the Tribe was granted 640 acres with the Cabazon Band of Mission Indians, a reservation that was divided between the groups in 1976. The Tribe is governed by a tribal council consisting of every enrolled member over the age of 18, presided over by a Tribal Chairperson, a Tribal Vice-Chairperson, and a Tribal Secretary. The Twenty-Nine Palms Band owns and operates the Spotlight 29 Casino and is currently pursuing the establishment of another, the Tortoise Rock Casino. The Twenty-Nine Palms Band have appointed a THPO to represent them in cultural resources matters (Twenty-Nine Palms Band of Mission Indians, 2014).

The Western Shoshone occupied a region that included Death, Panamint, and Saline valleys in eastern California through the highlands of central Nevada into northwestern Utah including Skull and Deep Creek valleys (Norwood et al. 1980, Thomas et al. 1986).

The Timbisha Shoshone Tribe, California, is a federally recognized tribe. It currently has approximately 306 tribal members and occupies a 7,914-acre reservation, comprised of several parcels in and around Death Valley National Park, including a 314-acre parcel near Furnace Creek, California. Some reservation parcels are located in Nevada near Uda, Scotty's Junction, and Death Valley Junction. The tribe also has several areas that are co-managed with the National Park Service or the Bureau of Land Management.

The tribe's main office is in Bishop, California. The tribe was originally represented in the 1863 treaty of Ruby Valley. However, that treaty did not result in any specific representation for the Timbisha Shoshone, who fought for and eventually achieved federal recognition in 1983. However, the tribe did not receive a land base until 2000 with the

passage of the Timbisha Homeland Act. The tribe holds general elections; it is led by a chairperson and holds monthly meetings. A Tribal Historic Preservation Office manages the tribe's cultural programs.

The Owens Valley Paiute, also called the Eastern Mono, occupied a narrow valley along the Owens River on the eastern side of the southeastern Sierra Nevada. Owens Valley Paiute territory extends north to Benton, California, and east to Fish Lake Valley, Nevada (Liljeblad and Fowler 1986; Norwood et al. 1980; Steward 1933). Five separate tribes represent the Owens Valley Paiute. All of the tribes are members of the Owens Valley Indian Water Commission. In the 1860s, the discovery of gold and silver in the Sierra Nevada and Inyo mountains attracted a flood of prospectors, who were later followed by ranchers and farmers, who often utilized Paiute irrigation systems and grasslands. A harsh winter and scarce food in 1861-1862 resulted in conflicts between the Paiute and settlers. In 1863 the military intervened and forcibly removed 1,000 Paiute to Fort Tejon in the mountains south of Bakersfield (NPS 2014). Many Paiute eventually left Fort Tejon and returned to the Owens Valley where they lived in camps near towns and farms. They integrated farm and domestic labor with traditional food gathering, and by 1866 were indispensable to the Owens Valley's agricultural economy.

In 1912 the government set aside over 67,000 acres of reservation land in the Owens Valley for the Indians of this area. In 1932 President Hoover revoked the 67,000 acres reserved land and placed the lands in watershed protection status for the City of Los Angeles. In 1936 the City of Los Angeles wanted the remaining lands and the federal government traded these lands for the 875 acres that now comprise the Bishop Paiute Reservation located at the base of the Eastern Sierra Nevada Mountains (Bishop Paiute Tribe 2014). Currently, the Owens Valley Paiute belong to five federally recognized tribes: Lone Pine Paiute, Fort Independence Paiute, Big Pine Paiute, Utu Utu Gwaitu Paiute, and Bishop Paiute.

The Lone Pine Paiute Tribe of Lone Pine, California, is a federally recognized tribe. The tribe consists of approximately 425 tribal members and a 237-acre reservation near Lone Pine, California. The tribal government consists of a general council that holds monthly meetings. Some Lone Pine Paiute Tribal members are of Timbisha Shoshone descent. Cultural resources issues are managed through the tribal Environmental Protection Program (Gates 2012).

The Fort Independence Paiute Tribe is a federally recognized tribe with a reservation on the site of a US Army camp. The 580-acre reservation is located near Independence, California, and was established in 1915. The Tribe consists of 136 members, roughly half of whom live on the reservation. The Tribal government, consisting of a chairman, a vice chairman, and a tribal administrator, was established in 1965. As of 2005,

cultural resources issues were handled by their THPO (Fort Independence Indian Reservation 2005).

The Big Pine Paiute Tribe of the Owens Valley is a federally recognized tribe with approximately 403 enrolled members and a 279-acre reservation near Big Pine, California. Tribal government consists of a constitutionally established Tribal Council and a General Council. The Tribal Council holds monthly meetings; the General Council meets quarterly. At least one Big Pine Paiute Tribe family shares a tribal affiliation with the Pahrump Paiute. The Big Pine Tribe's cultural resources program is managed by a THPO (Gates 2012).

The Utu Utu Gwaitu Paiute Tribe, previously referred to as the Benton Paiute, is a federally recognized tribe. Tribal membership is approximately 138 people and their reservation, near Benton, California, is 162 acres in size. The tribal government consists of the Utu Utu Tribal Council, which meets monthly, and the General Council of all members, which meets annually (Gates 2012).

The Paiute-Shoshone Indians of the Bishop Community is a federally recognized tribe. The 875 acre reservation is located near Bishop, California, and tribal enrollment stands at approximately 1040 members. The governing body of the tribe is the Bishop Indian Tribal Council. The Bishop Paiute Tribe's cultural resources program is maintained through a Tribal Historic Preservation Office (Gates 2012).

The Kitanemuk lived in the Tehachapi Mountains at the southern end of the San Joaquin Valley with Antelope Valley being their southern boundary (Blackburn and Bean 1978; Kroeber 1925). The most widely known Kitanemuk settlement was located at Tejon Creek, just south of Tehachapi Valley, and was first visited by the Spanish in 1776 who estimated the Kitanemuk population to be between 500 and 1000. The introduction of the Spanish mission system into Kitanemuk life brought changes similar to those experienced by other indigenous groups in California. Most Kitanemuk were assimilated into life at Mission San Fernando and Mission San Gabriel Arcangel in the Los Angeles area, while others remained near Tejon Creek and became ranch hands. They established Fort Tejon and referred to themselves as the Tejon Indian Tribe.

In 1864, the Tejon Agency formed the Tule River reservation near Bakersfield, California, and relocated a small Kitanemuk community to this location that still resides there today. Currently, two groups of Kitanemuk have stayed close to their ancestral land near Tejon Creek: (1) the Tinoqui-Chalola Council of Kitanemuk and Yowlumne Tejon Indians; and (2) the Tejon Indian Tribe. In 2012, the Tejon Indian Tribe became a federally recognized tribe (Haramokngna American Indian Cultural Center 2014).

Serrano territory generally encompassed the San Bernardino Mountains east of Cajon Pass, east to Twentynine Palms and south to Yucaipa Valley (Bean and Smith 1978a). When an *asistencia*, an outpost of the San Bernardino mission, was established at Redlands in 1819 the Spanish forced most of the Western Serrano into the missions away from their homeland. Those who were located in the area north of San Gorgonio Pass, near Banning, California, were able to preserve what remains of Serrano culture today (Bean and Smith 1978a). Oral history accounts of a massacre in the 1860s at Twentynine Palms may have been part of a larger American military campaign in the region that lasted 32 days (Bean and Vane 2002; Mission Creek Band of Indians 2013). Surviving Serrano sought shelter at Morongo with their Cahuilla neighbors; Morongo later became a reservation (Bean and Vane 2002). Other survivors followed the Serrano leader Santos Manuel down from the mountains and toward the valley floors, and eventually settled in what later became the reservation of the San Manuel Band of Mission Indians, a federally recognized tribe. Other Serrano descendants belong to the San Fernando Band of Mission Indians and Morongo Band of Mission Indians.

The San Manuel Band of Mission Indians reservation was established in 1891 and encompasses 800 acres in the Southern California foothills of the San Bernardino Mountain region. The reservation contains within it gaming operations and other enterprises that ensure the Tribe's self-sufficiency. They have an established General Council and a seven-member Business Committee that are elected by the Council (San Manuel Band of Mission Indians 2013).

The San Fernando Band of Mission Indians, also called the Fernandeno Tataviam Band of Mission Indians, are primarily descendants of Tataviam-speakers from northern Ventura and Los Angeles counties, specifically San Fernando and Santa Clarita valleys, and parts of Antelope Valley. However, the Tribe is listed by the NAHC as a consulting tribe for Serrano descendants in Los Angeles and San Bernardino counties (NAHC 2014). In 2002, the Fernandeno Tataviam Band of Mission Indians officially adopted a constitution. Members of the band are governed by a nine-member Tribal Senate. Recently, the tribe established a web development company called Pahi Creative Group Ltd that offers low-cost web development services to native non-profits (Fernandeno Tataviam Band of Mission Indians, 2014).

The Cahuilla occupied mountains, passes, canyons, valleys, and desert from the Colorado Desert north of the Chocolate Mountains and across to Borrego Springs, westerly along Palomar Mountain, northerly to the Santa Ana River near Riverside, then easterly along the San Bernardino Mountains to Orocopia Mountain, and encompassing the San Jacinto and Santa Rosa mountain ranges (Bean 1978).

Cahuilla leaders Juan Antonio and Cabeson, among others, acted as negotiators for the treaties between the Cahuilla and the U.S. Government in 1851. Reservations were established for the Cahuilla in 1875 and they were able to maintain their traditional patterns in combination with wage labor until about 1891, when federal supervision of the 10 Cahuilla reservations increased. This supervision included enrollment in government schools and cultural suppression of traditional Cahuilla lifeways (Bean 1978). Today, Cahuilla reside on eight different reservations in and around the San Jacinto Mountains and Coachella Valley.

The Agua Caliente Band of Cahuilla Indians were granted the Agua Caliente Indian Reservation in 1907 dedicating all even-numbered township-range sections to the Tribe and all odd-numbered sections were set aside to entice the construction of a transcontinental railroad. The Agua Caliente Band consists of smaller tribal groups that were living in the area at the time the reservation was established in the 19th century. By 1959, individual Indian allotments were finalized and certain lands were set aside for ceremonial use. Represented by a five-member tribal council, The Agua Caliente Band and its members embody the largest single landowner in Palm Springs. The Agua Caliente have appointed a THPO to represent them in cultural resources matters (Agua Caliente Band of Cahuilla Indians, 2014).

The Augustine Band of Cahuilla Indians were granted the Augustine Reservation was by Congress in 1891. They are based in Coachella and are the smallest tribal nation comprised of six descendants of Roberta Augustine, the last surviving adult member of tribe who passed away in 1987. In 2002, 20 acres of reservation land were used to construct the Augustine Casino, a small casino that has thus far helped the Augustine Band achieve cultural self-sufficiency (Augustine Tribe, 2010; Planet Palm Springs, 2013).

The Cabazon Band of Mission Indians received the federal land grant for the Cabazon Indian Reservation in 1876 for the 600-member Tribe. The Reservation is defined by three parcels of desert totaling 2,400 acres. Currently, the Cabazon Band of Mission Indians consists of fewer than 35 members that are descendants from their heroic leader of the mid-19th century, Chief Cabazon. In 1987, the tribe was the first to establish non-regulated gaming in the form of a high-stakes bingo facility, resulting in the future Indian gaming industry. The largest parcel of land contains the tribal office and the Fantasy Springs Casino which is owned and operated by the Tribe (Indian Gaming, 2008).

The Cahuilla Band of Mission Indians resides on the Cahuilla Indian Reservation that was established in 1875 spanning 18,884 acres. It is located about 25 miles east of Temecula and 35 miles west of Coachella Valley, based out of Anza (BIA 2012). The Cahuilla Band currently has 325 enrolled members.– The Cahuilla tribal government consists of a five-member tribal council elected by the general membership. The Council

consists of a tribal chairperson, a vice chairperson, a secretary, and two council members. In addition, various tribal committees are appointed to address specific government functions within the tribe. Major sources of income for the tribe include the Cahuilla Casino, the Cahuilla Travel Website, and the Cahuilla Smoke Shop. In addition, the tribe has recently allocated 2,000 acres for future economic development, including renewable energy development, commercial warehousing, and a gas station/convenience store (Cahuilla Band of Indians 2013a).

The Los Coyotes Band of Cahuilla and Cupeño Indians occupy the Los Coyotes Indian Reservation. This is the largest Native American reservation in San Diego County, encompassing 25,000 acres. The Reservation is located about 15 miles northwest of the Anza-Borrego Desert State Park. The Mountain Cahuilla Tribe consists of 328 enrolled members, 82 of which reside on the Los Coyotes Indian Reservation. The Los Coyotes band established the Los Coyotes Campground and Horsecamp on their property and opened the reservation to tourists and other visitors as a means of income. The Barstow Casino and Resort was underway as of 2011 that would serve as an off-reservation Indian casino (Los Coyotes Indian Reservation, 2012).

The Morongo Band of Mission Indians were granted the Morongo Indian Reservation in 1865, spanning 35,000 acres at the foot of the San Jacinto and San Gorgonio Mountains. The Morongo Band contains a mixture of several small diverse groups including the Serrano, Cahuilla, and Cupeño. In 1983, the Tribe established a small bingo hall that has since evolved into one of the oldest, most successful Indian gaming facilities in California. The Morongo Casino, Resort, and Spa is the largest of its kind in the nation. The Tribe is a major contributor to the economy of Coachella Valley and has also become the largest private sector employer in the Banning-Beaumont region, employing over 3,000 people (The Morongo Band of Mission Indians, 2014).

The Ramona Band of Cahuilla are descendants of the Apatcem Clan that originally settled the Ramona Indian Reservation that was established in the Sauppalpisa Territory in 1893 spanning 560 acres at the base of Thomas Mountain in Anza. The Ramona Band is a Mountain Cahuilla tribe and is the first Tribe to develop an entirely off-grid reservation, using renewable energy as their primary power source. The Tribe's members and families live in residences on the reservation that are powered by hybrid electrical systems including solar rays and wind turbines. In 2009, the Tribe received the 2009 Environmental Achievement Award from the United States Environmental Protection Agency. Currently they are working to establish an Eco-Tourism Cultural Resort as a profitable renewable-energy business, where electricity will be distributed via underground mini-grid (Ramona Band of Cahuilla Indians, 2008).

The Santa Rosa Band of Cahuilla Indians reside on The Santa Rosa Reservation that consists of four non-contiguous parcels spanning 11,021 acres. The Santa Rosa Band is a Mountain Cahuilla tribe comprised of descendants from three Cahuilla bands that traditionally inhabited areas of Toro Peak, Garner Valley, Coyote Canyon/Anza Borrego, Pinion and the Santa Rosa Indian Reservation, located in Riverside County. The largest parcel of land, New Santa Rosa, is used as residence land for members and the tribe operates a telecommunication relay station at Toro Peak.– The Santa Rosa Band of Cahuilla Indians recognizes 110 tribal members, 70 of which live on the Reservation, and it's represented by a seven-member Tribal Council (Santa Rosa Band of Cahuilla Indians, 2011).

The Torres Martinez Desert Cahuilla Indians reside on The Torres Martinez Reservation that was established in 1876 spanning 24,000 acres in Imperial and Riverside Counties near the Salton Sea. The Tribe is named after their reservation and an early village named Toro and the Martinez Indian Agency which was located in Coachella Valley. Currently there are about 90 members within the Tribe. The Reservation contains desert as well as private agricultural land that is one of the most productive agricultural areas on the nation. In 2007, the Torres Martinez Desert Cahuilla Band established the Red Earth Casino consisting of a gas station, travel center, sandwich shop and café. The Tribe also has plans to open another casino in the near future.

Cultural Characteristics for Numic and Takic Language Speakers

Cultural characteristics similar for Numic and Takic language speakers in the Mojave Desert include diagnostic point types and coil and scrape pottery or paddle and anvil pottery (Bean 1978; Bean and Smith 1978a; Thomas et al. 1986). Four point types may be associated with contact-period populations in the Numic/Takic language area: Rose Spring, Eastgate, Cottonwood, and Desert Side-notched. These tribes also traditionally cremated their dead with the exception of the Kitanemuk and Kawaiisu (Blackburn and Bean 1978; Garfinkel and Williams 2009; Kelly and Fowler 1986; Strong 1929; Zigmund 1986).

The Western Shoshone and Owens Valley Paiute practiced both cremations and burials (Busby et al. 1979; Thomas et al. 1986). The Cahuilla and Southern Paiute (Chemehuevi) also were agriculturalists and the Owens Valley Paiute practiced a specialized irrigation system to grow crops (Bean 1978, Busby et al. 1979, Kelly and Fowler 1986; Steward 1933). Sutton et al. (2007) suggest a geographic difference for artifact types. They note that the northern Mojave Desert or the Numic language areas have a combination of Desert Side-notched and Cottonwood triangular points, brownware pottery, some buffware pottery near the Mojave River, and primarily Coso obsidian artifacts. The eastern portion of the Mojave Desert also representing Takic language areas have only Cottonwood triangular points, brownware and buffware pottery, and local obsidian

artifacts. The Mojave River appears to have been a boundary between the Takic and Numic speakers (Sutton et al. 2007).

III.8.2.4 Historic Period

Initial Exploration by Europeans

The term historic period generally is defined as the period after initial contact between Native American groups and European explorers/settlers, when written sources about the area become available. An arbitrary date for the beginning of the historic period for California would be 1540, with the expedition of Spanish explorer Hernando de Alarcon. Alarcon's expedition brought the first Europeans to what is now the Plan Area. The expedition sailed up the Colorado River as far as the confluence of the Colorado and Gila rivers (Woznicki 1968). In the same year, Melcior Diaz led an expedition by foot up to the confluence of the Colorado and Gila rivers. In 1700, Father Eusebio Francisco Kino traveled from Sonora, Mexico, to the Yuma area, and for the next few years Spanish priests and missionaries moved up and down the Colorado and Gila rivers visiting the tribes.

Exploration into central and northern portions of the Plan Area was slower and more intermittent. While searching for potential mission sites in 1771, Father Francesco Tomas Garcés crossed the Colorado River at Yuma and traveled west into the Colorado Desert. He continued west to the vicinity of the San Jacinto Mountains before turning back to the Colorado River. In 1772 Pedro Fages, a Spanish army officer and commander of California's Spanish force, crossed into (what is now) the Plan Area while following a band of runaways from the presidio at San Diego. His chase appears to have led him through the San Bernardino Valley, over to the high desert near Cajon Pass, and into the Mojave Desert before proceeding on to the south end of San Joaquin Valley and then on to Monterey (Greene 1983).

The opening of the mission system in 1769 created the need to link Alta California, with Sonora, Mexico. Juan Bautista de Anza of Tubac, accompanied by Father Garcés and Father Juan Díaz, was commissioned to open a road across the Colorado Desert to San Gabriel and on to Monterey (Rolle and Verge 2008). The first de Anza Expedition in 1774-1775 entered Alta, California, at Yuma and proceeded to San Gabriel, establishing the de Anza Trail as an overland route from New Mexico to the Pacific Coast (Lawton 1976). A second de Anza expedition in 1775-1776 explored portions of the central Plan Area (Malouf and Findlay 1986). Father Garcés accompanied this troop initially, but split off from the main group at Yuma and traveled along the Colorado trail up to the vicinity of present-day Needles. He then crossed the width of the Mojave Desert via the Mojave Indian Trail, becoming the first European to do so (Greene 1983).

In 1780 the military commander of the Sonora district established Mission Puerto de Purísima Concepción, the only Spanish mission within the Plan Area. The mission and associated pueblo were located on the west bank of the Colorado River at Yuma, where the de Anza Trail crossed the Colorado River (California Department of Parks and Recreation 1990). Purísima mission was placed in charge of Father Francisco Garcés, the explorer, with Father Juan Barreneche as his assistant (Access Genealogy 2012). A second mission, Mission San Pedro y San Pablo de Bicuñer, was set up 8 or 10 miles lower down, possibly just across the present Mexican border and outside the Plan Area. Both missions were abandoned permanently after the missionaries and a small garrison were killed during the Quechan rebellion of July 17-19, 1781 (Access Genealogy 2012; CDPR 1990; Rolle and Verge 2008). Although military and civilian expeditions passed through the Yuma area after the rebellion, effective Spanish, and later Mexican control of the area was lost (Bee 1983). Effective Anglo-European control was eventually reestablished with the construction of Camp Independence (later Fort Yuma) by the U.S. Army in 1849 (California State Military Museum 2011a).

Trails, Trading Routes, and Transportation

Many historic trails, roads, and trading routes, were originally used by Native Americans in prehistoric and ethnohistoric times (see Sections III.8.2.1 and III.8.2.2). As noted earlier, the first Spanish period trails in the Plan Area were pioneered by the de Anza Expeditions in 1774-1775 and 1775-1776. Mexico gained its independence from Spain in 1821, but travel in what is now the Plan Area was still limited. Travel on the existing trails in the Plan Area increased after restrictions against private traders were lifted. American trappers and traders began working the northern portion of the Plan Area in increasing numbers in the early 1800s, including groups led by Jedediah Smith in 1826-1827 and Peter Ogden in 1829-1830. Both groups came into California in the region of Needles and moved west through the Mojave Desert, using the Mojave Indian Trail, and then north into the San Joaquin Valley (Malouf and Findlay 1986).

A primary route for the growing trade was the Old Spanish Trail, pioneered as a trade route between New Mexico and California by Antonio Armijo in 1829 (Beck and Haase 1974). The Old Spanish Trail began in Santa Fe, New Mexico, and ended at the Pacific Ocean at the Pueblo of Los Angeles. Armijo's route included portions of the routes blazed by de Rivera, Dominguez and de Escalante, and Jedediah Smith (Malouf and Findlay 1986). The portion of the trail route within the Plan Area followed the Mojave River west past what is now Barstow, then southwest through the Cajon Pass to Mission San Gabriel and on to Los Angeles (Beck and Haase 1974). Many American trappers and traders used the Old Spanish Trail and it became increasingly important to trade in the 1830s. The Mojave River Valley was also a popular route for horse and cattle thieves and Native American slave traders

bound for the established settlements in New Mexico (Malouf and Findlay 1986). The trail is now designated a National Historic Trail. For more details, see the end of Section III.8.3.

The first railroad line in the southern portion of the Plan Area was the Southern Pacific Railroad line to Yuma in 1876 (Engstrand 2005). The establishment of several sidings (short stretches of railroad track used to store rolling stock along the route), including one at Ogilby, greatly increased access to the area and consequently mining increased at a rapid pace in the Cargo Muchachos Mountains (Morton 1977).

Southern Pacific Railroad started railroad service between Yuma and Indio in 1877, with a track running through Imperial Valley, which increased the exploitation of the region's mineral resources (Clark 1970; Heath 1945). The Southern Pacific Railroad constructed a line from Mojave to Needles, on the Colorado River, between 1882 and 1883, which also increased the exploitation of the regions' mineral resources (Feller 2013). Numerous watering stations for locomotives were set up along the route, to which wagon roads from mines in the Mojave Desert were constructed, significantly decreasing the cost of supplying the mining operations in the area (Hatheway 2001) The town of Barstow, originally named Fishpond and later Waterman, was incorporated in 1886 as a town for railroad workers (Hart 1987). The establishment of a main transfer station at Yermo, 10 miles from Barstow, resulted in significant growth in Barstow (Hector 1987).

The completion of the San Pedro, Los Angeles, and Salt Lake Railway line from Salt Lake City, Utah, to Barstow in May 1905 further increased the town's importance (Burbank 2009; Strack 2012). Much of the route ran through only sparsely inhabited areas in the Plan Area, Barstow being the only town of any size. Although not a large town, Kelso, on the line east of Barstow, was a major staging stop for the railroad.

Numerous small railroads were constructed in the Plan Area for the express purpose of servicing mining operations. The Borate and Daggett Railroad, constructed in 1898, was used to haul borate the dozen miles from the mines at Borate to the Southern Pacific line at Daggett (Ross 2002). Many Navajo Native Americans and Mexicans worked on the construction of the line. The Borate and Daggett ran for nine years, carrying mail and passengers in addition to its main cargo of borate (Ross 2002).

The Carson and Colorado Railroad was incorporated in 1880 and ran from Mound House, Nevada, to Keeler, California, below the Cerro Gordo Mines on the east side of Owens Valley. Much of the route paralleled U.S. Route 395. The Southern Pacific Company bought the line in 1900, renamed it the Nevada and California Railway in 1905, and in 1912 was renamed again the Southern Pacific. Portions of the railway lines closed in the 1930s and 1940s. The final portion from Laws to Keeler was abandoned in 1960 and the rails were removed in 1961 (Turner 1965).

The Tonopah & Tidewater Railroad, constructed between 1905 and 1907, was a 170-mile rail line that ran from Ludlow, California, to Beatty, Nevada. The line went through Death Valley Junction, where borax from the borax mines in Death Valley was loaded onto railcars for shipment. Both cargo and passenger trains operated on the line. The Pacific Coast Borax Company began shutting down operations in Death Valley in 1928, which dealt a substantial blow to the revenue of the railroad. The line continued to run reduced operations for several years afterward, but finally closed down in June 1940 (Jennings and Wyant 1976).

The Ludlow & Southern Railway, constructed in 1902 and completed in June 1903, ran from the Buckeye Mining District north to Ludlow, where it connected to the Atchison, Topeka, & Santa Fe Railroad. The small town of Rochester was the southern terminus of the railroad, a company town owned by the Bagdad Chase Gold Mining Company. The railroad closed down in 1916 when the gold mine shut down, but the line kept up until 1932 when a large segment was washed out (Ross 2000). After that, the line was abandoned.

When the railroad route from Barstow to Needles was constructed in 1882 by the Southern Pacific Railroad, a dirt road was also established adjacent to the tracks (Feller 2013; Hatheway 2001). This road was most likely built as part of the construction of the railroad, but was soon used for wagon transportation. Through the rest of the 1800s and into the first decade of the 1900s, the road had light use because the train provided a much more cost-effective way of transporting people and goods through the area. After the turn of the century, however, the rise of the automobile made the road a potential route from Nevada to the west coast. The County of San Bernardino improved the existing dirt road in 1911 (Hatheway 2001), possibly to entice the State of California to adopt the route as a highway. Plans were being formed for a highway connecting the east coast and west coast, and the Needles to Barstow to Los Angeles route, later known as Route 66, was one of the main routes considered.

U.S. Highway 66, or Route 66, was designated in 1926 when a national numbering system plan for U.S. Highways first took effect (Roland et al. 2011). It was originally part of the National Old Trails Road, the nation's first transcontinental highway formed in 1912 as the result of the efforts of road advocacy groups in Missouri (Roland et al. 2011; Weingroff 2013). The National Old Trails Road extended 3,096 miles from Washington, D.C., to Los Angeles, California, crossing 12 states (Lowe 1925). For most of the route west of Albuquerque, the route of the National Old Trails Road became Route 66, though much of Route 66 across the Mojave Desert still bears the name of the Old Trails Road (Roadside Photos 2014). Route 66 has been evaluated as potentially eligible for the NRHP and is part of the National Park Service multistate Route 66 Corridor Preservation Program (NPS 2014).

Mining

Mining has been a recurring and significant factor in the development of the Plan Area. Father Garces first discovered gold in the Colorado Desert in 1776, in the area of the Cargo Muchacho Mountains north-northwest of Yuma (Hector 1987). Limited mining took place during the Spanish Period in the Cargo Muchachos and southern Chocolate Mountains along the Colorado River in dry placer deposits. These consisted mainly of small claims worked by a few individuals (Greene 1983). The cost and difficulty of working these few prospects on hillsides and dry washes and the Quechan rebellion of 1781 led to their eventual abandonment (Morton 1977).

Mining restarted in the Cargo Muchacho Mountains during the 1830s (Morton 1977). The prospects again consisted mostly of hand-dug shallow pits, and the ore was processed by hand (Hector 1987). Like the initial finds in the Spanish period, the difficulty in working the mines restricted development.

Although not initially extensive, mining was probably the most common reason for settlement in much of the Plan Area after the American acquisition of California on February 2, 1848 (Rolle and Verge 2008). The Cargo Muchacho-Tumco Mountain Mining District, also known as the Cargo Muchacho-Tumco District, near Yuma was established in an area originally opened in the early 1780s by Spanish prospectors. Initially, mining operations were on a small scale due to the harsh conditions and difficult access. Mining conditions changed dramatically in 1877 with the completion by the Southern Pacific Railroad of a line to Yuma. After the establishment of the railroad, mining increased at a rapid pace in the Cargo Muchachos with several mines opening up in the late 1890s. Mining in the area continued well into the early 1900s, and then intermittently from about 1910 to the late 1930s (Clark 1970).

By the early 1850s, gold deposits had been discovered in San Bernardino County around Leach Lake and Lytle Creek. In the early 1860s, gold was discovered in the Picacho Peak area south of Blythe and in the Bear and Holcomb valleys in the San Bernardino Mountains. In the 1870s, gold mining began in earnest in the Little San Bernardino and Eagle mountains (Riverside County), near Twentynine Palms and Joshua Tree National Park. A military survey party led by Colonel Henry Washington explored the oasis at Twentynine Palms in 1858 (Greene 1983). At its height of operations, the area supported numerous mining districts (Clark 1970). At its full extent the area in and around the park supported numerous mining districts, including Twentynine Palms, Washington, Gold Park, Piñon, Cottonwood, Eagle Mountain, Iron Mountain, Monte Negras, Rattler, and Dale (Clark 1970; Greene 1983). The Dale mines yielded more than \$3 million in gold before the turn of the century. By the 1890s, mining operations were sufficient to warrant the development of haul roads, linking the remote mining districts with towns such as Indio and Mecca.

One major mining area, the Buckeye Mining district, opened up as a result of the Southern Pacific line from Mojave to Needles. This district was located in the mountains south of the rail line and approximately 50 miles east-southeast of Barstow. Two of the principal mines begun in the area in the late 1880s were the Bagdad and Roosevelt mines, established by John Suter. A rich gold ore deposit was found in the late 1890s, after Suter had sold the claims. The first shipment of ore was delivered to the Randsberg-Santa Fe reduction company's stamp mill in Barstow in 1901. A second mining company, the Benjamin E. Chase Gold Mining Company, had been set up in the Buckeye district. Chase was also the president of the Ludlow & Southern Railway, which was built in 1903 to transport ore from the Chase mines to the railhead at Ludlow. The two operations merged in 1904, and between then and 1910 it was the largest gold producing operation in San Bernardino County. It was also the largest copper-producing operation in the county. Gold production fell after 1910, and the mines were worked intermittently from 1910 to the 1970s (Ross 2001).

A mining boom started in the Mojave Valley in 1860 after Robert W. Waterman and John L. Porter discovered silver (Hector 1987). By the early 1880s the Calico silver mining district was established, and the town of Calico was founded in 1881 along the Mojave River. Silver deposits were also discovered around Ivanpah, which became a major mining district in the 1870s, and in the Providence Mountains in the 1870s and 1880s (Greene 1983). In addition to silver and gold, borate deposits were found in 1882 north of Daggett by Hugh Stevens and Bill Neel (Ross 2002). Mining commenced soon after, and in 1888 the most promising claims were purchased by Francis M. Smith, who also owned the borax mines in the Death Valley area (California Department of Transportation 2008).

Mining in the Death Valley-Furnace Creek area was slow to develop due to transportation difficulties. The Telescope Mining District, organized in 1860, was located just west of Death Valley on a spur of the Panamint Range. Worked only marginally in the beginning, by the late 1860s a substantial mining district had developed (Greene 1981). Mormon immigrants traveling west discovered gold in 1854 and 1856 in the Amargosa River area (Norwood et al. 1980). Silver was found in the Panamint Range in 1858, and the area was worked with limited success in the 1860s. Beginning in the 1880s a revival of gold mining in the Panamint Mountains occurred, centered in the Tuber Canyon area (Greene 1981). The towns of Ballarat and Garlock developed as a result of the mining industry in the Panamint Mountains.

One of the most successful mining operations in the Death Valley area during the late 1800s was the Harmony Borax Works. In 1881, William T. Coleman formed the Greenland Salt and Borax Mining Company, which began operating the Harmony Borax works north of Furnace Creek in 1882 (California Department of Transportation 2008, Greene 1981). The operation mined borate that formed on the surface of the salt flats, called "cottonballs."

Coleman also ran another borate mining operation, the Amargosa Borax Works, near Resting Springs. The Amargosa Borax Works operated during the summer months when work in the valley was suspended because of extreme heat. (Greene 1981). It was from the Amargosa works that the famous 20-mule teams hauled the borate to the Daggett railhead, a 330-mile round trip (Zentner 2012). In 1883 a richer type of borate, occurring underground, was discovered south of Furnace Creek and subsequently southwest of Death Valley Junction. In 1890 Francis M. Smith acquired the borate mines in Death and Amargosa valleys, Furnace Creek, and Borate, consolidating them all under the Pacific Coast Borax Company (California Department of Transportation 2008). Smith closed down all the works except the Borate works, which could be worked most profitably (Greene 1981). Borate became the main producer of borax and boric acid in the United States between 1890 and 1907.

Numerous silver mines were also established during the early 1860s in the Coso Range, resulting in the establishment of the Coso Mining Company and the Coso Gold and Silver Mining Company, among others (Norwood et al. 1980). Mining success fluctuated greatly in these areas and was never as successful as some other areas. A third mining area was established in 1865 in the Inyo Range on the southeast side of the Owens Valley, centered at Cerro Gordo. This area was very productive, and by 1868 the Union Mine at Cerro Gordo was the most productive silver mine in the United States (Norwood et al. 1980).

In addition to gold and silver, salt was mined in the Saline Valley east of Independence. Salt mining began in 1864, but transportation costs kept the enterprise from growing to a major operation (Norwood et al. 1980). The Saline Valley Salt Company constructed the Saline Valley Salt Tram between 1911 and 1913 to transport salt over the Inyo Mountains to Owens Valley where it was then shipped via railroad (Ver Planck 1957). It was the steepest tram in the United States rising from 1,100 feet in the Saline Valley to 8,500 feet at the crest of the Inyo Mountains, and then dropping to 3,600 feet in Owens Valley. The tram is on the National Register of Historic Places (#74000514) (Conrad 1973). The Saline Valley Salt Company was bought out by the Owens Valley Salt Company in 1915, which continued to mine salt until 1918 when it closed operations. Salt mining continued on an intermittent basis by various companies until 1930 when the Sierra Salt Company closed (Ver Planck 1957)

Agriculture and Ranching

As a result of the mining operations in the area around the Owens and Panamint valleys, farmers and cattlemen also moved into the area, especially the Owens Valley, to supply food to the miners. The influx of Americans into the area resulted in conflicts with the indigenous Native American groups (Norwood et al. 1980). In 1862, the Army established Camp Independence in Owens Valley to quell Native American–White miner violence that had broken out in the area. Temporarily abandoned in 1864, the camp was re-occupied in

1865 after violence again broke out, and remained active until abandoned in March 1877 (California State Military Museum 2011c).

After an initial, unsuccessful attempt to irrigate the Imperial and Coachella valleys by Dr. O.M. Wozencraft between 1859 and 1887, Charles R. Rockwood developed a plan to irrigate 1,250,000 acres in the Imperial Valley in 1892 (Dowd 1956). Rockwood set up the California Development Company in 1896 to implement his plan, and the first canal was completed in 1901. A plan to improve the canal backfired in the winter of 1905, and the flooding Colorado River broke through a levee in Mexico and diverted almost the entire volume of the Colorado into the Imperial Valley, creating the Salton Sea (Dowd 1956). The breach was not permanently closed until February 1907 by the Southern Pacific Railroad. The Imperial Irrigation District, the current supplier of water to the Imperial Valley, was set up in 1911 (Dowd 1956). Around Blythe, the Palo Verde Joint Levee District was set up in 1917 to control periodic flooding (Palo Verde Irrigation District History 2005). Hoover Dam, completed in 1935, put an end to periodic flooding of the lowlands around the Colorado River (Rolle and Verge 2008).

Indigenous agriculture had existed in the Owens Valley, along the Colorado River, and at various springs throughout the Plan Area well before the Spanish arrived (see Section III.8.2.1). Historic era agriculture in the Owens Valley provided food for the miners who flocked to the region following the discovery of gold in San Bernardino in the 1850s. Although the area received little rain, the Owens River supplied enough dependable water for irrigation. By the beginning of the twentieth century, the city of Los Angeles was experiencing a severe water shortage and it was proposed to William Mulholland, president of the Los Angeles Water Department, that the Owens River be tapped to supply Los Angeles with water (Norwood et al. 1980). Los Angeles voters approved a \$23 million bond, water rights were purchased, and an aqueduct was completed by 1913. The diversion of water to Los Angeles did not immediately impact agriculture in the Owens Valley, but a drought in 1921-1922 began a decline that ended farming in the area by the mid-1930s (Norwood et al. 1980).

During the 1880s, the area around Twentynine Palms began to be used as a cattle range, with a number of large cattle companies based in the Banning and Big Bear areas running their herds from Morongo Valley to Twentynine Palms (California State Military Museum 2011g). Ranches in the area included the Barker and Shay Ranch, Jim Mart's "I-S" outfit, the Chase and Law Ranch, and the Talmadge brand, all of which used the area during the winter months. Warren's Well was also the gathering point for the spring and fall cattle roundups until World War II (California State Military Museum 2011g).

Military Installations in the Plan Area

The first military installation in the Plan Area was Camp Independence, established in 1849 to guard the Yuma ferry crossing, an important point on the overland route to California (Mikesell 2000). Originally established in the Colorado River floodplain, the camp was moved to a small hill on the California side of the river in 1851 and renamed Fort Yuma (California State Military Museum 2011a). Fort Yuma continued to be an important stop on the route to California, and, in 1854, the town of Yuma was laid out. In 1857, James E. Birch began a stage line from San Antonio, Texas, to San Diego, California,– which crossed the Colorado Desert west of Yuma, went south into Mexico for 50 miles around the Imperial Valley Sand Dunes, moved northwest to Carrizo Creek, proceeded to Vallecitos, and finally traveled southwest to San Diego (Pourade 1963). Fort Yuma was abandoned temporarily in 1851, reoccupied in 1852, and permanently abandoned in May 1883 (California State Military Museum 2011a).

Captain James H. Carleton established a chain of military posts in San Bernardino County between 1859 and 1860. These posts were created to protect the travel route, called the Old Government Road, from San Bernardino across the Mojave Desert to Fort Mojave, near Needles (Hector 1987). The posts were garrisoned by elements of the California Volunteers during the Civil War, and most were evacuated at the war's end. Due to local concerns for protection of the travel route and increasing mining activity, the posts were reoccupied in 1866 (California State Military Museum 2011b).

Two of the more substantial posts were Fort Piute and Camp Cady. Fort Piute was established about 25 miles northwest of Fort Mojave, and Camp Cady was located about 20 miles east of Barstow. Both had permanent buildings constructed of either adobe or rock. Both also had histories of abandonment and reoccupation, with Fort Piute finally being abandoned in 1868 and Camp Cady in 1871 (California State Military Museum 2013a).

As cattleman and ranchers moved into Owens Valley and cattle grazed on the Paiute food supply, the Paiute stole and killed some cattle for food. The ranchers armed themselves and violence between the Native Americans and whites escalated; this became known as the Owens Valley Indian War (1861-1865). The ranchers asked for the help of the military in Los Angeles, Fort Tejon, and Camp Independence. More than 900 Paiute were escorted to San Sebastian Indian reservation in 1863 (California State Military Museum 2013b).

The presence of the military in the Plan Area increased dramatically in the years immediately before and after America entered World War II. Fort Irwin, originally established as the Mojave Anti-Aircraft Range, opened in 1940. In 1942 the range was renamed Camp Irwin, in honor of Major General George LeRoy Irwin (California State Military Museum 2011e). It was deactivated in 1944 and reactivated in 1951 as Camp Irwin Armoured

Combat Training Area for troops destined for the Korean conflict (California State Military Museum 2011e). The first antenna to support the National Aeronautics and Space Administration's unnamed exploration of deep space, called Pioneer Deep Space Station, was constructed near the Goldstone Dry Lake, within Camp Irwin in 1958 (Norwood 2008). Renamed Fort Irwin again 1961, it was declared a permanent installation. Deactivated again in 1971, it was reactivated in 1980 as the National Training Center and serves as a major training facility for the Army, Marine Corps, and National Guard (California State Military Museum 2011e). The Pioneer Deep Space Station National Historic Landmark is located within Fort Irwin and is on the National Register (#85002813).

Edwards Air Force Base (EAFB), located north and east of Lancaster, was established in 1942 on land first purchased in 1933 for use as a bombing range of units stationed at March AFB (Mikesell 2000). The facility was from inception used for testing of highly secret developmental aircraft (Mikesell 2000). Rogers Dry Lake is located within the base and its natural attributes of clean air, isolated location, weather, variable terrain, and large expanse was ideal for the military to flight test aircraft. The base emerged during the Cold War as a premier Air Force high-technology complex, especially important in the areas of experimental flight testing, captive flight testing (test tracks), rocket propulsion research, and in the 1960s, a center for astronaut training (California State Military Museum 2011d). EAFB continues to be a major testing facility of new and experimental aircraft. In 1985 Rogers Dry Lake was added as a National Historic Landmark and is now listed on the NRHP (# 85002816). It is also a National Historic Site and part of the National Park system.

In February 1942, the Army Ground Forces command determined a training facility was necessary for troops expected to fight in North Africa. Command was given to General George S. Patton, who flew to Riverside in March 1942 and reconnoitered the proposed location (Lynch et al. 1982). He set up a command center close to Desert Center, approximately 20 miles east of Indio, and troops began arriving in early April. The training area, initially named the Desert Training Center, was renamed the California-Arizona Maneuver Area (C-AMA) in 1943 after the fighting in North Africa ended and troops destined for other theaters of operations trained at the facility (Lynch et al. 1982). The C-AMA ultimately included an area approximately 350 miles east-west by 250 miles north-south. The C-AMA stretched from Pomona, California, on its westernmost end almost to Phoenix, Arizona, on the east, and from Yuma at its south end to Boulder City, Nevada, on its north (Bischoff 2009; Lynch et al. 1982). The main maneuver areas were located in the eastern half of the C-AMA, east of a line running north from Niland, through Desert Center, and up to Kelso and Nipton. Eleven camps were set up, consisting mostly of temporary buildings and tents to house the troops. Seven of the camps were in California: Camp Young (headquarters), Camp Pilot Knob, Camp Coxcomb, Camp Granite, Camp Iron Mountain, Camp Essex, and Camp Ibis (all in the Plan Area). The C-AMA finally closed in mid-1944, by which time

approximately 1 million troops had received their advanced training at the facility (Bischoff 2009; Lynch et al. 1982).

In addition to the military camps and bases, the Manzanar Relocation Center was established in 1942 as one of the ten camps where more than 110,000 Japanese Americans were incarcerated during WWII. These were one-story barracks with common bathrooms, showers, laundries, and mess halls for 10,000 people. It was closed in 1945 at the end of WWII; it is the best preserved internment camp (Thompson 1984). The Manzanar Relocation Center is listed on the NRHP (#76000484) and is designated a National Historic Landmark (#850) and a National Historic Site (N432).

In 1964 the Mojave Desert was again the site of a large military exercise, named “Desert Strike.” Concentrated west of Needles, approximately 89,000 troops participated (Nystrom 2003). Exercises included amphibious landings on the banks of the Colorado River, construction of gun and other emplacements, and movement of heavy equipment across the desert. This exercise, as in the case of the maneuvers conducted in the C-AMA during World War II, left substantial permanent scars on the desert landscape, including vehicle tracks, remnants of emplacements, and military debris and trash scattered across the landscape (Nystrom 2003).

Associated with the C-AMA, the Blythe Army Air Field was established in June 1942 when the Army leased the existing Blythe airport facilities at about 290 acres. Blythe Army Air Field was an Army Air Forces heavy bombardment crew training facility that was enlarged to 2,354 acres between 1942 and 1944. The Army constructed more than 650 buildings at the facility during its operations, including buildings, runways, ammunition storage bunkers, and water and sewer facilities. After the war the Air Field was returned to the City of Blythe and the vast majority of the structures were demolished. The airport is still using the main runways and a few buildings (California State Military Museum 2011f).

The Marine Corps Air Ground Combat Center (MCAGCC), Twentynine Palms, first opened in 1940 as an Army glider training area (California State Military Museum 2011g). Converted to an Army fighter pilot training and bombing range in 1943, it was decommissioned and the land transferred to the County of San Bernardino in 1945. In 1952 the Marine Corps took control of the property and named it Headquarters Marine Corps Training Center, Twentynine Palms, California. It became the MCAGCC, Twentynine Palms in 1979. At approximately 932 square miles, it is the largest Marine Corps Base in existence (California State Military Museum 2011g).

The Marine Corps Logistics Base, Barstow, opened in the summer of 1942 as Navy Supply Depot, Barstow, but was transferred to the Marine Corps as it was being completed in December of the same year. The logistics base supplied material needed for the Fleet

Marine Forces in the Pacific theater during World War II. The base also saw significant expansion during the Korean War years, and has continued to expand its services to the Marine Corps in the subsequent decades (California State Military Museum 2013c). Because it employs a large number of civilian workers, the growth of the base has also resulted in the growth of the nearby town of Barstow.

China Lake Naval Weapons Center (CLNWC), originally called Naval Ordnance Test Station Inyokern, was established in 1943 for the California Institute of Technology to conduct research into rockets and rocket propellants (Mikesell 2000). CLNWC continued after World War II with development and testing of guided missiles, jet aircraft ejection systems, and later space program capsules and the intercontinental ballistic missile development program (Mikesell 2000). CLNWC is the Navy's largest single land holding at 19,600 square miles and continues as their center for research, testing, and evaluation of weapons systems. The Coso Rock Art District National Historic Landmark is within the boundaries of CLNWC and is on the National Register (#66000209).

III.8.3 Known Cultural Resources in the Plan Area by Ecoregion Subarea

To describe the cultural resources within the Plan Area on a programmatic level, various sources were researched to gather information regarding the known cultural resources within the Plan Area. Sources included the CDCA Plan and Plan Amendment Resource Management Plans (West Mojave Desert [WEMO], Northern and Eastern Mojave Desert [NEMO], Western Colorado Desert [WECO], Northern and Eastern Colorado Desert [NECO]), Bishop Resource Management Plan (RMP), Bakersfield Proposed RMP/FEIS, Eastern San Diego County RMP, Imperial Sand Dunes Recreation Area Management Plan, the NRHP, the online list of California Historical Resources, and the BLM Cultural Resources Geodatabase.

The online list of California Historical Resources is organized by county and includes California Historical Landmarks (CHLs), California Points of Historical Interest (POHI), and a non-comprehensive list of historical resources from the CRHR or historic properties from the NRHP (<http://ohp.parks.ca.gov/listedresources/>). This information covers both federal and non-federal land. It includes only a small portion of the resources that may actually be present. Nonetheless, these resources are presented as examples of the kinds of resources that are present in the Plan Area and that can be expected to be present in areas where survey has not yet taken place. A full record search for the entire Plan Area was not completed because the resource data is housed in five different CHRIS Information Centers with different database systems. It was not feasible to produce a record search of over 22 million acres using the CHRIS.– Volume IV, Chapter IV.08 and Appendix R2.8 present estimates of the number of resources that may be present in the Plan Area.

The publically available portions of the NRHP and CRHR were used to identify and quantify significant historic properties and historical resources within the Plan Area. The following sections present a description of the cultural resources that have been identified within the Plan Area. It is important to note that large portions of the California Desert region remain unsurveyed and that identification, evaluation, and treatment of cultural resources would need to be conducted on a project-specific level to ensure proper compliance with cultural resources regulations.

III.8.3.1 CDCA Surveys and ACECs

The CDCA has the most extensive cultural resources dataset of any portion of the Plan Area. The CDCA Plan provides management for approximately 25 million acres in Imperial, Kern, Los Angeles, Mono, Riverside, San Diego, and San Bernardino counties. Approximately 96% of the Plan area is contained within the CDCA (21,769,195 acres). The planning phase of the CDCA Plan included a systematic cultural resource inventory of approximately 179,200 acres between 1969 and 1981. These inventories included stratified random sample surveys and intensive purposive surveys focused on locating specific sites and/or hypothesis testing. Together, these inventories form the baseline of cultural resources data within the CDCA Plan area.

As an effort to preserve cultural resources, the CDCA Plan lists Areas of Critical Environmental Concern (ACECs). An ACEC is an area “within the public lands where special management attention is required ...to protect and prevent irreparable damage to important historic, cultural, or scenic values, fish and wildlife resources, or other natural systems or processes” (FLPMA 103a). BLM regulations for implementing Federal Land Policy and Management Act ACEC provisions are at 43 CFR 1610.7-2(b). The ACECs within the Plan Area that were designated for their cultural resources values are presented in Table III.8-1. These “values” have one or more of the following properties: (1) they have significant qualities that go beyond local importance and t give special worth, consequence, meaning, distinctiveness, or cause for concern, especially compared to any similar resource; (2) they have properties that make them particularly fragile, rare, irreplaceable, or vulnerable to adverse change; (3) they have been identified as needing protection to satisfy national priority concerns or comply with FLPMA; (4) they have qualities that warrant highlighting to satisfy public or management concerns about safety and public welfare; and/or (5) they pose a significant threat to human life and safety or to property (BLM Guidance Manual 1613).

Each ACEC within the CDCA has its own management plan with specific protection goals and descriptions of the cultural resources within its boundaries. There are 43 cultural resources ACECs within the DRECP. These have been designated for prehistoric resources, historic-era resources, for Native American values, and for combinations of these values.

**Table III.8-1
 Cultural Resources ACECs Within the Plan Area**

Ecoregion Subarea	ACEC	Designated Management Values
Cadiz Valley and Chocolate Mountains	Alligator Rock	archaeological values
	Corn Springs	prehistoric and historic values
	Mule Mountains	prehistoric values
	Palen Dry Lake	prehistoric values
	Patton's Iron Mountain Divisional Camp	historic military camp
	Whipple Mountains	Native American values
Imperial Borrego Valley	East Mesa	prehistoric values
	Indian Pass	prehistoric values
	Lake Cahuilla A (#2)	prehistoric values
	Lake Cahuilla B (#3)	prehistoric values
	Lake Cahuilla C (#5)	prehistoric values
	Lake Cahuilla D (#6)	prehistoric values
	Pilot Knob	prehistoric and Native American values
	Plank Road	unique historic road
	San Sebastian Marsh/ San Felipe Creek	prehistoric, historic, and Native American values
	West Mesa	cultural values
	Yuha Basin	prehistoric and historic values
	Singer Geoglyphs	prehistoric values
Kingston and Funeral Mountains	Clark Mountain	prehistoric and historic values
	Halloran Wash	prehistoric values
	Mesquite Lake	prehistoric values
	Mountains Pass Dinosaur Trackway	historic and paleontological values
Mojave and Silurian Valley	Calico Early Man Site	prehistoric human occupation
	Christmas Canyon	prehistoric values
	Cronese Basin	cultural resources
	Denning Springs	prehistoric and historic values
	Mesquite Hills/Crucero	prehistoric values
	Salt Creek Hills	prehistoric values
	Bedrock Spring	prehistoric values
	Steam Well	prehistoric and historic values
	Squaw Spring	prehistoric and historic values
Owens River Valley	Fossil Falls	prehistoric values
	Rose Spring	prehistoric values

**Table III.8-1
 Cultural Resources ACECs Within the Plan Area**

Ecoregion Subarea	ACEC	Designated Management Values
Panamint Death Valley/ West Mojave and Eastern Slopes	Last Chance Canyon	prehistoric and historic values
Pinto Lucerne Valley and Eastern Slopes	Juniper Flats	prehistoric occupation, historic mining
	Rodman Mountain Cultural Area	cultural values
	Whitewater Canyon	Native American values
	Dead Mountains	Native American values
West Mojave and Eastern Slopes	Mopah Spring	cultural resources
	Black Mountain	prehistoric and Native American values
	Horse Canyon	Prehistoric and ethnographic and contemporary Native American traditional cultural values
	Jawbone/Butterbredt	Native American values
	Rainbow Basin/Owl Canyon	prehistoric values

As noted above, during the planning for the CDCA, there were a number of cultural resources investigations designed to identify where cultural resource sensitivity was higher, to identify they types of resources present, and the ethnographic and historic-era contexts for the region. Recommendations for the protection of cultural resources, including installation of fencing, signage, and road closures, were also a part of these studies. These investigations, their coverage, results, and culturally sensitive areas are detailed in Table R1.8-1 (in Appendix R1). Of the ten investigations, five included surveys covering a total of approximately 37,080 acres. The cultural resource types identified a wide range of cultural resources including habitation sites, temporary camps, rock shelters, caves, milling stations, lithic scatters, chipping circles, quarries, ceramic scatters, cemeteries, cremation features, rock alignments, geoglyphs, petroglyphs, pictographs, trails, roasting pits, cairns, isolated artifacts, mines, homesteads, historic-era campsites, and historic-era debris concentrations.

As of January 1, 1980, 14,229 cultural resources had been recorded in the CDCA. For the CDCA plan, a representative sample of 2,903 of these cultural resources were categorized by site type and period. The site types included villages, temporary camps, shelter/cave, milling station, lithic scatter, quarry site, pottery locus, cemetery, cremation locus, intaglio/geoglyph, rock alignment, petroglyph, pictograph, trail, roasting pit, isolated find, cairn, historic, other, and multiple (Table III.8-2). For definitions for these site types, see

the Final Environmental Impact Statement and Proposed Plan: Appendix Volume D for the CDCA (BLM 1980). Categorized by period, 84.3% of the 2,903 sampled cultural resources were prehistoric sites (n=2,447), 11% were historic-era resources (n=319), 3% contained both historic and prehistoric components (n=88), and 1.7% were categorized as other (n=49), with no assigned time period. It should be noted that the lower incidence of historical resources was due to the fact that during the time surveys were being conducted for the CDCA (late 1970s through 1981), historical archaeology was in its infancy in the western United States and California and, more importantly, only resources that were clearly the result of activities only up until 1930 were given consideration. Additionally, the number of TCPs and sacred sites is likely underrepresented because the regulations and guidance documents for these types of resources, NPS Bulletin 38 and Executive Order 13007 respectively, did not appear until the late 1980s and 1990s.

Table III.8-2 presents the results of the cultural resources sample analysis, including number of resources within each types and the likelihood of a particular resource in each type being eligible for nomination to the NRHP or CRHR.

**Table III.8-2
Sample of Sites From the CDCA Plan**

Resource Types in CDCA Plan	# of Resources	Time Period	Eligibility
Village	27	Prehistoric	Eligible
Temporary camp	426	Prehistoric	Possibly
Shelter/cave	163	Prehistoric	Possibly
Milling station	262	Prehistoric	Possibly
Lithic scatter	689	Prehistoric	Possibly
Quarry site	30	Prehistoric	Possibly
Pottery locus	67	Prehistoric	Possibly
Cemetery	0	Prehistoric	Eligible
Cremation locus	2	Prehistoric	Eligible
Intaglio/geoglyph	1	Prehistoric	Eligible
Rock alignment	11	Prehistoric	Possibly
Petroglyph	57	Prehistoric	Eligible
Pictograph	0	Prehistoric	Eligible
Trail	41	Prehistoric	Possibly
Roasting pit	342	Prehistoric	Possibly
Isolated find	311	Prehistoric	Not eligible
Cairn	18	Prehistoric	Unknown
Historic-era	319	Historic	Possibly
Other	49	Unknown	Unknown

**Table III.8-2
 Sample of Sites From the CDCA Plan**

Resource Types in CDCA Plan	# of Resources	Time Period	Eligibility
Multicomponent	88	Both	Possibly
Total	2903		

CDCA Plan Amendments

The WEMO, NEMO, NECO, and WECO RMPs were all amendments to the CDCA Plan. These plans contain more specific management direction for areas within the CDCA and add to the overall cultural resources data. For more explanations of these plans, see Volume II, Section II.3.1.1.

The WEMO RMP provides management for 3.3 million acres of public lands in Inyo, Kern, Los Angeles, and San Bernardino counties. There are 29 ACECs within this plan area, 17 of which are significant for their cultural resources values. These ACECs include Rose Spring, Fossil Falls, Last Chance Canyon, Jawbone-Butterbrecht, Christmas Canyon, Bedrock Spring, Steam Well, Red Mountain Spring, Afton Canyon, Calico Early Man Site, Black Mountain, Cronese Lakes, Denning Spring, Juniper Flats, Rodman Mountains, Rainbow Basin, and Salt Creek Hills. In addition to these areas, the RMP lists potentially significant areas: (1) the area around Owens Lake, Haiwee Reservoir, Rose Valley, Cactus Flat, and McCloud Flat down to Fossil Falls-Little Lake; (2) canyons on the east side of Sierra Nevada; (3) El Paso Mountains; (4) the area around Searles Lake; and (5) Lava Mountains.

The NEMO RMP provides management for 2.7 million acres of public lands within Inyo, Mono, and San Bernardino counties.– Of the 15 ACECs within NEMO, 10 are within the DRECP, 8 of which are designated for their cultural, prehistoric, historical, or Native American values: Clark Mountain, Dead Mountains, Denning Spring, Halloran Wash, Mesquite Hills/Crucero, Mesquite Lake, Mount Dinosaur Trackway, and Salt Creek (Dumont).

The WECO RMP provides management for 475,000 acres and 2,300 miles of off-highway vehicle (OHV) routes in Imperial and San Diego counties. The purpose of the plan was to designate routes as open, limited, or closed to support recreational and general access while conserving cultural and natural resources. Eight ACECs are within the Plan Area and are designated for their cultural resources: San Sebastian Marsh/San Felipe Creek, Yuha Basin, East Mesa, West Mesa, and Lake Cahuilla #2, #3, #5, and #6. A total of 4,250 archaeological sites were recorded within the WECO Plan Area during the CDCA amendment period. The majority are associated with prehistoric Lake Cahuilla within the

Yuha Desert. The Southwest Lake Cahuilla Recessional Shoreline Archaeological District encompasses 2,700 acres, and is composed of a series of prehistoric resources that follow the shoreline (paleoshores) as the lake receded. Prehistoric resource types along Lake Cahuilla include seasonal camps, ceramic and lithic scatters, rock alignments, geoglyphs (intaglios), pecked rock figures (petroglyphs), pedestrian trail segments, fish traps, and cremations. The main cultural resource type identified within the Yuha Desert are lithic scatters. These show that all phases of stone tool production (material assay, reduction, detailed shaping). Large geoglyphs and round features called “dance circles” are present along the edge of the Yuha Desert. Campsites containing hearths, evidence of small brush structures and pit houses, pottery sherd scatters, stone tool manufacturing debris, milling tools, cleared sleeping circles, and food debris (fresh and saltwater shell fragments and fish and bird bones) are located along Pinto Wash and the paleoshores of Lake Cahuilla. Additional resource types include rock alignments, trail segments, petroglyphs, fish traps, and cremations.

The NECO RMP provides management for 3.8 million acres in the northern and eastern Colorado Desert within Imperial, Riverside, and San Bernardino counties. The main purpose of the plan was to create specific management prescriptions for species and habitats on federal lands, in particular for the desert tortoise. There are 17 ACECs within the NECO area 10 of which are valued in part for their cultural resources. Survey coverage is approximately 3.9% (220,000 acres) of the 5,547,000 acre NECO Plan area. As of the year 2000, there have been— over 3,700 historic-era and prehistoric resources recorded.

The Bishop RMP provides management for 750,000 acres of public lands in the eastern Sierra region of Mono and Inyo counties. Only a small portion of this RMP is in the DRECP. It contains six ACECs, none of which are in the DRECP.

The Bakersfield RMP provides management for 13.8 million acres in portions of Kern, Kings, San Luis Obispo, Santa Barbara, Tulare, and Ventura counties. Of the 14 ACECs within the Bakersfield RMP, only one, Horse Canyon, is within the Plan Area. Horse Canyon is associated with important prehistoric, ethnohistoric, and contemporary Native American traditional cultural values.

The Eastern San Diego County RMP provides management for approximately 100,000 acres of public lands in a transitional zone between the California Peninsular Range and the Colorado Desert. Only a portion of this area is within the Plan Area and neither of the two ACECs are within the Plan Area.

The Imperial Sand Dunes Draft Recreation Area Management Plan provides management for 160,000 acres in Imperial County. There are three ACECs within the Plan Area, two of which are designated for their cultural resources significance: East Mesa and Plank Road.

III.8.3.2 Surveys Unrelated to the CDCA Planning Phase

Since the completion of the CDCA Plan in 1980, additional surveys and research studies have been completed within the Plan Area on BLM-managed land as well as non-federal lands.– Large-scale surveys, including those for China Lake Naval Weapons Center (125,000 acres), Edwards Air Force Base (150,000 acres), Fort Irwin (220,000 acres), Twentynine Palms Marine Corps Center (150,000 acres), and the BLM (2,500,00 acres), inventoried an approximate total of 3,145,000 acres and recorded over 20,000 prehistoric resources. All sites types, from large habitations, camps and quarries, to shelters, have been identified ranging from the early Holocene to the late Holocene (Sutton et al. 2007). In addition, 200 sites have been recorded since the 1970s at the Chocolate Mountains Aerial Gunnery Range. Common site types include lithic scatters and flaking stations, rock rings and cleared circles, and trail segments. At the Marine Corps Logistics Base Barstow, more than 50 archaeological sites have been recorded, including rock art, cleared circles, and trail segment site types (USMC Cultural Resources Program Guide 2009).

Surveys conducted for large-scale alternative energy projects have also contributed to the overall knowledge concerning cultural resources of the Plan Area.– Examples of these larger projects include Desert Sunlight Solar Farm, Alta Wind (I-VI and VIII), Centinela Solar, Genesis NextEra, Alta East Wind, North Sky River Energy, Ivanpah Solar Electric Generating System, Ocotillo Express Wind, Imperial Solar Energy Center South, and NextLight Antelope Valley (AV Solar Ranch) PV1. For a complete listing of projects that are under construction and/or operational, see Appendix O. These include– 5 BLM projects and 47 projects on private and/or other public lands. Some of these survey areas and cultural resources have not been included in the BLM Cultural Resources Geodatabase (described below in Section III.8.3.3) because GIS data was not readily available.

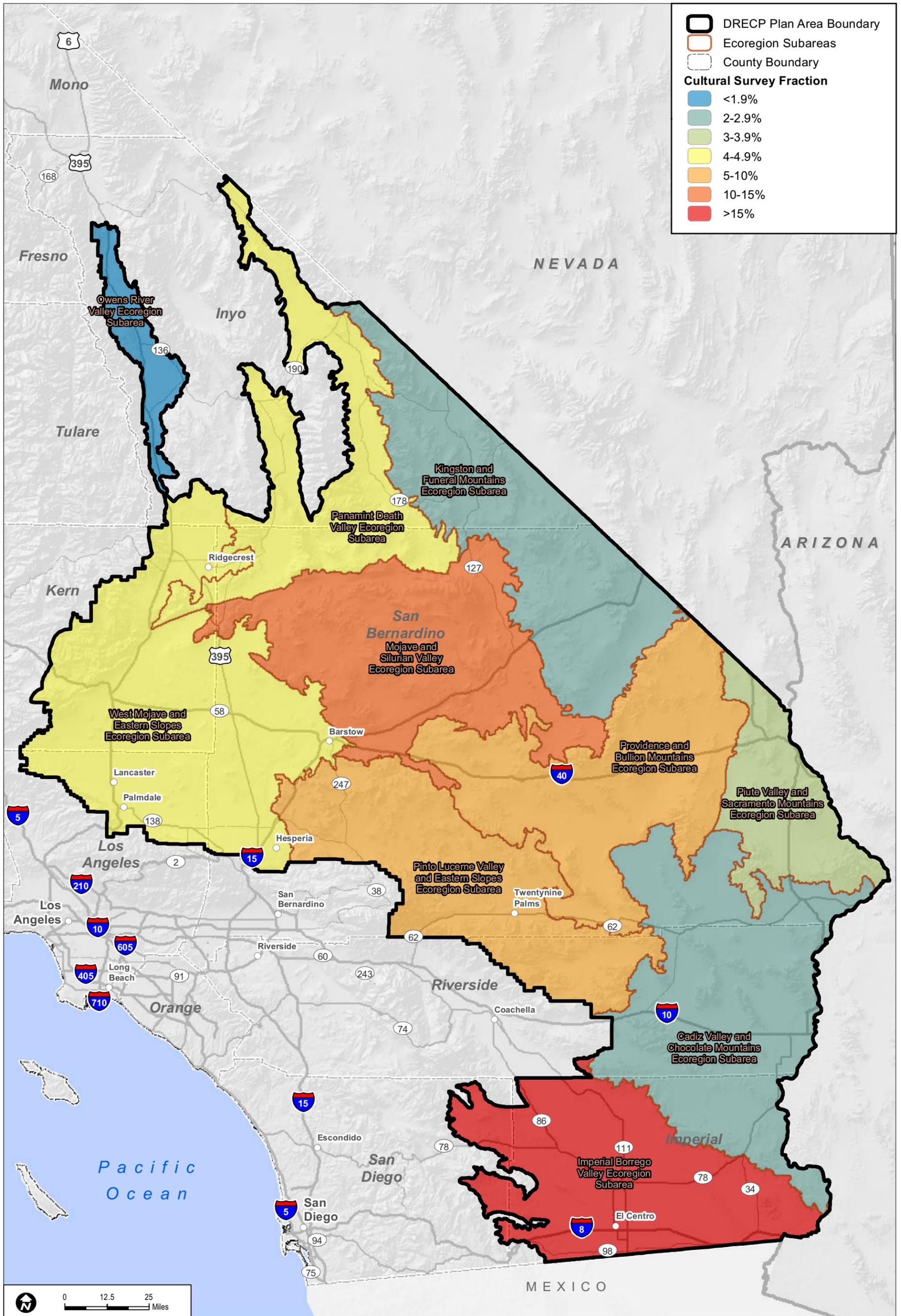
III.8.3.3 BLM Cultural Resources Geodatabase

The characterization of known cultural resources within the Plan Area also included consulting the BLM Cultural Resources Geodatabase (CRG). This database was compiled from: (1) seven BLM field office geodatabases within the Plan Area (Needles, Barstow, and parts of Palm Springs, El Centro, Bakersfield, Bishop, and Ridgecrest); (2) the BLM GIS 2004 Legacy data; (3) the South Coastal Information Center Mapping for Eastern San Diego County; (4) the West Mojave Plan Court Remedy records review mapping; (5) mapping associated with renewable energy projects; and (6) the State Historic Resource Information Mapping Project. The CRG includes data from the surveys described above in Sections III.8.3.1 and III.8.3.2. The data that was compiled through March 2013 contains cultural resource locations and survey information, but the data sets have varying degrees of completeness. For example, some cultural resource entries include their period of occupation, site attributes, and NRHP eligibility while other cultural resource entries only

consist of a numerical identification. CRHR eligibility was not part of the site attributes of the CRG. The GCP provides geospatial information for resources on lands outside of BLM jurisdictional boundaries. This may include resources found on lands administered by the: Department of Defense, United States Forest Service, National Park Service, Bureau of Reclamation, United States Fish and Wildlife Service, Bureau of Indian Affairs, State of California, and City and County Government entities. Resources located on private lands are also included in this database. The attributes for the survey data are limited so that the surveyed acres reflect only those associated with BLM inventories. Some of the recent large renewable energy projects have not been included in the dataset.– Additional research, records search, field survey and documentation, and Native American consultation need to be conducted at the regional and project specific levels to aid in filling in these data gaps.

Based on the CRG, there have been at least 1,069 surveys and/or investigations in the Plan Area that together identified 36,262 cultural resources.– Of the previously identified resources, 23,941 were located on Federal lands (66%), while 11,800 were located on non-Federal land (32.5%). A small number, 521 (1.5%) overlapped both Federal and non-Federal land. These numbers were tabulated using the Cultural Resources GIS geodatabase resource points, resource polygons, resource lines, and survey polygons. This database is the most comprehensive digital data available at the time of this writing. Before tabulation, the resource points and resource lines were converted into polygons with a 15-meter buffer to consolidate the data into one useable dataset. Multiple lines and/or multiple polygons with the same primary number in the same ecoregion subarea were only counted once. If a cultural resource fell in more than one ecoregion subarea, it was counted one time in each ecoregion subarea it fell in.

Prior to tabulating the number of surveys and acre coverage, raw data from the CRG was compiled and subjected to quality control measures. Large polygons that matched the geometry of U.S. Geological Survey map quadrangles or those polygons that were more than 10,000 acres and shared a boundary with a quadrangle were assumed to be data errors (not actually surveyed areas) and were omitted from the analysis. The point and line data set could not be used to calculate acres. The number of surveys was tabulated using the survey polygon, point, and line datasets while the number of acres surveyed was tabulated using only– the survey polygon dataset. Approximately 1,625,500 acres are known to have been surveyed within the Plan Area. This represents 7.2% of the total Plan Area. Of this, 1,063,373 acres (4.7% of the total) were on Federal lands while 561,794 acres (2.5% of the total) were on non-Federal lands. Ownership information could not be determined for a small number of acres (332). Federal lands had a survey coverage of 6.2% while non-Federal lands had a survey coverage of 10.6%. Figure III.8-3 displays the percentage of previously survey BLM-managed land– by ecoregion subarea — with the ecoregion subarea with most surveyed acres identified in red and the ecoregion subarea with the least surveyed acres identified in blue.



Sources: ESRI (2014); CEC (2013); BLM (2013); CDFW (2013); USFWS (2013)

FIGURE III.8-3

Surveyed Acres by DRECP Ecoregion Subarea

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The total number of acres of Federal land surveyed and the total number of resources identified during those surveys were used to calculate an average cultural resource density for each ecoregion subarea and for the Plan Area as a whole. These density estimates are applicable to all lands in the Plan Area regardless of land ownership. The Federal land within the Plan Area consist of approximately 17,001,200 acres. Density calculations suggest that there are a minimum of 379,266 resources in this area. The exact survey coverage for non-Federal land was not calculated for this programmatic document, because there is no single, comprehensive, readily available source of that information. However, the non-Federal land within the Plan Area consist of approximately 5,584,000 acres, leading to a minimum of 124,569 resources in this area following density calculations.

III.8.3.4 Results of Cultural Resources Analysis

The information produced through analysis of known surveys shows that the number of cultural resources is very high in the Plan Area. On top of this, calculations of the density of cultural resources show that a very large number of cultural resources remain unidentified. Additional cultural resources will be identified when more of the Plan Area is surveyed on a project-by-project basis as required by the Conservation and Management Actions defined in Volume IV, Chapter IV.8. Both prehistoric and historic-era sites are present, representing a wide range of resource types. Cultural resources, their densities, and eligibility are discussed first, followed by National Historic Trails. This separation is due to the particular issues surrounding long linear features and the specific legal context used for the National Historic Trails, as well as data availability.

Cultural Resources

Table R1.8-2 (in Appendix R1) displays the number of cultural resources by ecoregion subarea, the resource type, and NHRP eligibility status. In addition, the percentage of surveyed acreage and the density of cultural resource per acre were calculated by ecoregion subarea. Cultural resource densities were calculated from the number of known cultural resources (the historic, prehistoric, multicomponent sites with both prehistoric and historic, and unknown types minus isolated artifacts) divided by the number of acres surveyed within each ecoregion subarea.

Table R1.8-3 (in Appendix R1) shows the number of cultural resources by ecoregion subarea, the resource type, and the land ownership information (Federal, non-Federal, or unknown). This table also includes a breakdown of acres surveyed and the density of cultural resource per acre calculated by landownership within each ecoregion subarea.

As noted above, because only a fraction (7.2%) of the Plan Area has been surveyed, the actual number of cultural resources is highly underrepresented. Approximately half of the

alternative energy projects that are under construction or in operational status (such as Alta East Wind, NextLight Antelope Valley PV2, and North Sky River Energy) occur within the West Mohave and Eastern Slopes ecoregion subarea where the cultural resource density is 0.04 cultural resources per acre (see Appendix O for more details on projects under construction or in operational status). This number is at the higher range when compared to other ecoregion subarea cultural resources densities. The Owens River Valley ecoregion subarea, with only a single in-construction or operational renewable energy project (a wind project located within the Naval Air Weapons Station China Lake), has the highest cultural resources density at 1.76 cultural resources per acre.

During the permitting of future projects, cultural resources surveys would be completed on a project-by-project basis pursuant to applicable regulations including the Section 106 process of the NHPA as implemented in 36 CFR 800, NEPA 42 U.S.C. 4321 et seq., and/or CEQA Guidelines Section 15064.5 (as amended in 1999), and PRC Sections 21083.2 and 21084.1. As indicated in Table III.8-3, the majority of known cultural resources have not been evaluated for eligibility on the NRHP or have an unknown eligibility status. An alternative for planning purposes would be to consider all cultural resources eligible for listing on the NRHP, with the exception of isolated finds. Likewise for CEQA planning purposes, all cultural resources could be considered historical resources eligible for the CRHR or unique archaeological resources (PRC 21083.2[g]) and therefore impacts to these resources could be significant and require mitigation.

Of the cultural resources within the Plan Area, a number are determined eligible or listed on the NRHP and/or CRHR, or have been designated California Historical Landmarks or POHIs. These terms are defined in more detail in Section III.8.2. Table R1.8-4 (see Appendix R1) lists the name of the resource and its designation on one of the lists. There are 66 cultural resources on the NRHP, 2 cultural resources on the CRHR, 54 California Historical Landmarks, and 46 Points of Historical Interest within the Plan Area. As these are the publically available portions of the registers, they are not complete and do not provide geospatial information so it was not possible to distinguish the data between Federal and non-Federal lands.

San Bernardino County contains the highest number of listed resources. Table R1.8-4 (in Appendix R1) includes linear resources that may cross multiple ecoregion subareas. Examples of historically significant linear resources include the Mojave Road, Plank Road, Eichbaum Toll Road, National Old Trails Monument, and Fages-De Anza Trail–Southern Emigrant Road. National Historic Trails are discussed in further detail below.

It is important to note that these numbers do not include prehistoric and historic resources that have been recommended eligible and not yet nominated to the NRHP or CRHR, nor do they include consensus determinations that result in resources being automatically placed

on the CRHR. Therefore, the number of prehistoric and historic resources that should be treated as significant is much higher. For example, according to the WECO RMP, the All-American Canal, Coachella Canal, East Highline Canal, and Southern Pacific Railroad line have been determined to be eligible for listing on the NRHP; however, they are not currently on the list. In addition, 139 prehistoric and 9 historic-era resources have been evaluated through the Section 106 process and determined eligible or potentially eligible for listing on the NRHP (WECO RMP). When more of the Plan Area is surveyed on a project-by-project basis as a requirement for future projects, and additional CHRIS records searches are conducted, the number of significant cultural resources will increase. Cultural resources that have not yet been formally evaluated for their eligibility to the NRHP and CRHR are considered eligible for listing, with the exception of cultural isolated finds. Any adverse impacts to these cultural resources will need to be addressed and mitigated under CEQA and resolved under Section 106.

Historic Trails

National Historic Trails with alignments within the Plan Area include the Pacific Crest Trail, the Juan Bautista de Anza National Historic Trail, and the Old Spanish National Historic Trail. Both are administered by the NPS, while segments of the trails located on public lands are managed by the BLM. As of the writing of this document, the NPS is considering designating the Butterfield Overland Trail as a National Historic Trail. The Pacific Crest National Scenic Trail runs from Mexico to Canada, a distance of 2,650 miles. It is administered by the USFS in partnership with the BLM, NPS, California State Parks, and the Pacific Crest Trail Association. The Pacific Trail Comprehensive Management Plan was published in 1982 to provide overall guidance, direction, and strategy for management of the trail, its use, and its significant resources. Approximately 114 miles of this trail passes through the Plan Area in the Pinto and Lucerne Valley ecoregion subarea (11 miles) and in the West Mojave and Eastern Slopes ecoregion subarea (103 miles). In 1932, Clinton C. Clarke organized the Pacific Crest Trail System Conference with the vision that existing trails would be interconnected with new segments of trail and would extend from Canada to Mexico. Points along this scenic trail provide views east to various portions of the Plan Area (USDA 1982). This trail is not listed on the NRHP.

Approximately 83 miles of the 1,210-mile (from Arizona to California) Juan Bautista de Anza National Historic Trail alignment are in the DRECP, in the Imperial Borrego Valley ecoregion subarea. The trail commemorates the story of the 1775-1776 Spanish Expedition, whose members traveled this route from Mexico to what is now the San Francisco Bay area. In some cases, the path taken by the de Anza party is on privately owned lands, on government military bases, or in some other way inaccessible. A signed auto tour route parallels the historic corridor on paved highways throughout Arizona and California (NPS 1996). Points along this trail offer vistas and panoramic views of the Imperial Valley

and Anza-Borrego desert lands. In many areas of the California desert, this landscape has changed very little since the time of the expedition and its integrity allows visitors the opportunity to vicariously experience that time period. The NRHP-listed Fages-De Anza Trail–Southern Emigrant Road refers to the southern part of this historic trail. The Comprehensive Management and Use Plan for the trail envisions a continuous recreation trail paralleling the route of the historic trail. Large segments of the recreation trail are signed on BLM lands in the Imperial Valley and within the Anza-Borrego Desert State Park. The Trail’s historic corridor is part of the BLM’s National Landscape Conservation System and is considered a federal protection component.

Approximately 367 miles of the Old Spanish National Historic Trail are within the Plan Area and cross six of the DRECP ecoregion subareas (Western Mohave and Eastern Slopes, Mohave and Silurian Valley, Kingston and Funeral Mountains, Providence and Bullion Mountains, Pinto Lucerne Valley and Eastern Slopes, and Piute Valley and Sacramento Mountains). In total, this trail is more than 2,700 miles in length and crosses New Mexico, Colorado, Arizona, Utah, Nevada, and California. The various route alignments of this historic trail network were a combination of indigenous people’s paths and horse and mule exploration and trade routes utilized to transport merchandise and people in the early 1800s. Mexican trader Antonio Armijo is said to have led the first commercial caravan from Abiquiú, New Mexico, to Los Angeles late in 1829. By 1848, at the end of the Mexican–American War, the United States had taken control of the southwest, and with the subsequent Gadsden Purchase, planned a southern route for a transcontinental railroad. After 1848, use of the Old Spanish Trail declined as other routes to California were used. The Old Spanish National Historic Trail was established in 2002 and is co-administered by the NPS and BLM, but includes all land ownerships. The Old Spanish National Historic Trail is not a constructed contiguous trail with a demarcated alignment, and it has very few officially designated hiking trails along the trail corridor. Although portions of the trail are in private ownership, points along it have public access, viewpoints, and interpretive sites for visitors. Almost none of Old Spanish National Historic Trail is listed in the Register, and because it is hard to find through pedestrian survey, it is not likely to even be recorded and evaluated. Therefore, the designated alignment of the Old Spanish National Historic Trail will be considered and treated as eligible for the NRHP on the basis of its setting and visual characteristics and verified historical significance, unless the particular segment lacks integrity (NPS 2001).

Approximately 64 miles of the Butterfield Overland Trail are within the Plan Area in the Imperial Borrego Valley ecoregion subarea. As authorized under the Omnibus Public Lands Management Act (Public Law 111-11), NPS is conducting a special resource study and environmental assessment to evaluate the suitability and feasibility of this trail for designation as a National Historic Trail. The Butterfield Overland Trail was established in

1858 to create a transportation system for mail and passengers from the East Coast to California in 25 days. Butterfield Overland Mail Company ran the service between 1858 and 1861. It was the first regular communication and transportation service across the United States. The route was approximately 2,800 miles between San Francisco and two eastern limits of St. Louis, Missouri, and Memphis, Tennessee. These two lines joined in Little Rock, Arkansas and continued through Texas to Fort Yuma near present-day Yuma, Arizona, and ended in San Francisco (Helmich 2008; Norris 2013).

III.8.4 Bureau of Land Management Land Use Plan Amendment

The BLM LUPA Affected Environment includes cultural resources found within BLM-administered lands in the Plan Area. Table III.8-3 indicates the number of cultural resources under the BLM LUPA Affected Environment.

**Table III.8-3
 Cultural Resources of the BLM LUPA Affected Environment
 (All Ecoregion Subareas)**

NR Status	Prehistoric	Historic	Multi-Component	Unknown Type	Isolate	Total
Unknown Status	623	819	124	12,507	0	14,073
Not Evaluated	945	480	122	3	0	1,550
Ineligible	40	95	9	0	1,776	1,920
Eligible	274	56	29	13	0	372
Listed	7	0	0	0	0	7
Total	1,889	1,450	284	12,523	1,776	17,922

III.8.5 Natural Community Conservation Plan Existing Conditions

The affected environment for the NCCP is the same as that described above for the entire Plan Area. While there are Department of Defense (DOD) lands and tribal lands within the Plan boundaries, the Plan does not analyze effects on these lands so they are not included in the description of the affected environment.

III.8.6 General Conservation Plan Affected Environment

The affected environment for the GCP includes a subset of the lands covered by Plan-wide analysis and the NCCP. In addition to excluding DOD and tribal lands, the GCP lands exclude all other federal lands (BLM-administered public lands, national parks, etc.). The GCP

represents approximately 17% of the entire Plan Area (3,866,116 acres out of a total 22,585,573 acres).

Table III.8-4 depicts the number of cultural resources previously identified within the GCP Affected Environment. This is not a comprehensive number, as formal CHRIS record searches have not been completed for the GCP area. Of the 36,262 resources known to be present within the Plan Area (see Table R1.8-2 in Appendix R1), 12,783 (35%) are within the GCP area.

**Table III.8-4
 Cultural Resources of the GCP Affected Environment (All Ecoregion Subareas)**

NR Status	Prehistoric	Historic	Multi-Component	Unknown Type	Isolate	Total
Unknown Status	191	281	19	10,995	0	11,486
Not Evaluated	490	222	80	1	0	793
Ineligible	52	45	7	0	264	368
Eligible	104	12	17	0	0	133
Listed	3	0	0	0	0	3
Total	840	560	123	10,996	264	12,783

III.8.7 Cultural Resources Outside of Plan Area

III.8.7.1 Transmission Outside of Plan Area

The transmission required outside of the Plan Area would fall into four geographic regions: San Diego, Los Angeles, Central Valley, and North Palm Springs–Riverside. The following discusses cultural resources in these regions using information gathered from four large transmission projects. Section III.8.1 provides the regulatory setting for cultural resources, including federal acts and regulations (National Historic Preservation Act, Archaeological Resources Protection Act, Antiquities Act, Preserve America, and CDCA Plan Cultural Resources Element), and state regulations (CEQA and PRC Section 5024.1).

This affected environment discussion covers three kinds of cultural resources, classified by their origins: prehistoric, ethnographic, and historic. Prehistoric archaeological resources are associated with the human occupation and use of California before prolonged European contact. In California, the prehistoric period began more than 12,000 years ago and extended through the eighteenth century until 1769, when the first Europeans settled in California. Ethnographic resources represent the heritage of a particular ethnic or cultural group, such as Native Americans or African, European, Latino, or Asian immigrants. Historic-period resources, both archaeological and built-environment, are associated with

Euro-American exploration and settlement of an area and the beginning of a written historical record. The following prehistoric, ethnographic, and historical background provides the context for the cultural resources in the Outside of Plan Area.

III.8.7.1.1 San Diego Area

This transmission corridor extends from Ocotillo in southwestern Imperial County to San Diego and uses the existing Sunrise Powerlink corridor as a proxy for cultural resources.

III.8.7.1.1.1 Cultural Resources Background and Context

The San Diego area encompasses at least four major environmental provinces: coastal, foothill, mountain, and desert. An understanding of the differences among these four provinces concerning water and subsistence resource availability, and how the relative habitability of these areas changed over time based on climatic and other factors (both environmental and cultural), is essential to deciphering and explaining the specific details of the region's cultural history.

Prehistory

The body of current research of pre-contact occupation in San Diego County and western Imperial County recognizes the existence of at least two major cultural traditions, Early Period/Archaic and Late Period, based upon general economic trends and material culture. Within the region, the Early Period/Archaic spans from roughly 9500 to 1300 BP, and the Late Period begins approximately 1300 BP and ends with historic contact.

The Early Period/Archaic includes the San Dieguito Complex and regional manifestations of what is generally termed the Archaic Complex, including the coastally oriented La Jolla, the inland valley/foothills Pauma, and the Desert Archaic. These archaeological complexes are as yet poorly defined, as are the interrelationships between contemporaneous coastal, inland, and desert assemblages. The San Dieguito Complex is typified as a nonspecialized hunting and gathering society.

Early Period/Archaic site types from 9500 to 1300 BP within San Diego County include coastal habitation sites; inland hunting, gathering, and seed milling camps; and quarry sites. Material cultural assemblages during this long period are remarkably similar in many respects. The Archaic period in western Imperial County is not strongly represented.

In San Diego County, Late Period cultural patterns include the San Luis Rey Complex in northern San Diego County and the Cuyamaca Complex of the central Peninsular Range. A subsistence pattern is characterized by winter village occupation at lower elevations with a

reliance on stored resources and movement to mountain villages for the summer and fall months (CPUC and BLM 2008).

Ethnography

The San Diego area falls mainly within ethnographically recorded Kumeyaay/Diegueño/Kwaaymii territory and skirts Cupeño/Cahuilla territory. Territorial boundaries are not precisely mapped and may have been fluid. Language families and territories of these groups are presented in Table III.8-5 (CPUC and BLM 2008).

**Table III.8-5
 Ethnographic Groups in the San Diego Area**

Ethnographic Group	Language Family	Territory
Kumeyaay (also referred to as Ipai-Tipai, Northern and Southern Diegueño, or by clan name, such as Kwaaymii)	Yuman	San Diego Coast to Colorado Desert
Cahuilla	Takic	San Bernardino Mountains in the north to Borrego Springs and the Chocolate Mountains in the south, a portion of Colorado Desert west of Orocopia Mountain to the east, and the San Jacinto Plain near Riverside and the eastern slopes of Palomar Mountain to the west
Cupeño	Takic	San Luis Rey River headwaters

History

The San Diego area includes a variety of diverse historic period resources that represent most of the major trends that have affected the development of San Diego and Imperial counties over the past 200 years. The history of the region is generally divided into the Spanish (1769-1821), Mexican (1821-1846), and American (after 1846) periods. The Spanish Period began in July 1769 with the establishment of a mission and presidio on a hill overlooking San Diego Bay. The Mexican Period began in 1821 when Mexico achieved independence from Spain. During the 1820s, a small village began to form at the base of Presidio Hill that became the Pueblo of San Diego (present-day Old Town). In 1846, San Diego was occupied by American troops and officially became part of the United States in 1848 with the Treaty of Guadalupe Hidalgo. The Southern Overland Trail, which often corresponds with the corridor, became the major overland entrance to Southern California

before construction of the Southern Pacific Railroad, and in 1857 overland mail service was established along the trail.

The modern City of San Diego was founded in 1867. A land boom in 1870 brought a successful start to the new metropolis, which soon replaced the old pueblo of San Diego as the region's commercial hub. A railroad connection completed in the mid-1880s initiated a second building boom and brought widespread urban development to many areas of San Diego County.

Large-scale mining in San Diego County's backcountry was stimulated by the discovery of gold at Julian in the late 1860s and early 1870s. A number of mines are located within or near the San Diego area and include the Shenandoah, Himalaya, and San Diego mines in Mesa Grande; the Montezuma Mine north of Ranchita; the Grapevine Mine in Grapevine Canyon; and the Elliott Dolomite Mine near Sweeney Pass.

At their peak, between 1900 and 1910, approximately 112 rural farmstead communities existed within the county's present-day boundary. By 1940, however, the number of people living on San Diego County farms was only 2% of the total population. Meanwhile, from 1870 to 1970, livestock ranching continued to thrive in San Diego County, but had to compete with expanding crop agriculture and urbanization (CPUC and BLM 2008).

III.8.7.1.1.2 Cultural Resources in the San Diego Area

The San Diego area encompasses land under BLM, USFS, California State Parks, DOD and tribal jurisdiction. Some areas potentially containing cultural resources include the Yuha Basin ACEC, San Sebastian Marsh ACEC, Anza-Borrego Desert State Park, Cleveland National Forest, and Juan Bautista de Anza National Historic Trail. Tribal land in the corridor is mostly in eastern San Diego County and includes the Santa Ysabel, Mesa Grande, Barona, and Capitan Grande reservations.

Although the total number of cultural resources present in this area is unknown, a rough order of magnitude estimate can be derived based on recent surveys related to the Sunrise Powerlink Project. Table III.8-6 presents information on the types of cultural resources identified during these surveys. Fourteen of these resources were eligible or potentially eligible for the NRHP and the CRHR. Prehistoric site types include lithic and ceramic scatters, bedrock milling stations, temporary camps, habitations, roasting pits, rock features, trails, cremations, and marine shell scatter. Historic site types include refuse scatters, reservoirs/dams, homesteads, buildings, walls, foundations, roads, railroads, transmission lines, and historic addresses (CPUC and BLM 2008).

Table III.8-6
Cultural Resource Types in the San Diego Transmission Corridor Area

Time Period	No. of Resources	Percent	No. of Resources/Acre ¹
Prehistoric	205	85%	0.125
Prehistoric (human remains)	6	2%	0.003
Historic	21	9%	0.013
Multicomponent and Unknown	9	3%	0.005
Total	241	100%	0.147

¹ Based on a survey acreage of 1,644 acres

Tables III.8-7 and III.8-8 show the typical number of cultural resources that could potentially be affected by transmission line corridors and substations.

Table III.8-7
Typical Right-of-Way (ROW) Widths and Linear Impacts of Bulk Transmission to San Diego Area Cultural Resources

Transmission Line Voltage	Transmission ROW Corridor Width (feet)	Access Road Width (feet)	Potential Extent of Effects/Linear Mile (in Acres)	Potential No. of Resources Affected/Linear Mile
<i>230 kV</i>				
Double-Circuit Tower Line	100	24	15	2.21
<i>500 kV</i>				
Single-Circuit Tower Line	200	24	27	3.97
Two Single-Circuit Tower Lines	450	24	57	8.38
Three Single-Circuit Tower Lines	700	24	88	12.94
Four Single-Circuit Tower Lines	950	24	118	17.35

Note: Access road width is added to ROW width for total width of linear disturbance.

Table III.8-8
Impacts of Substation Construction to Cultural Resources in the San Diego Area

Substation Type	Size (Acres)	Potential Number of Resources Affected
66 kV Collector Substation	39 acres	5.73
230/66 kV Collector Substation	77 acres	11.32
500/230 kV Collector Substation	176 acres	25.87
500/230/66 kV Super Collector Substation	215 acres	31.61

III.8.7.1.2 Los Angeles Area

This transmission corridor extends from Palmdale to the Los Angeles Basin, and uses Tehachapi Renewable Transmission Project (TRTP) Segments 6, 7, and 11 as a proxy for cultural resources.

III.8.7.1.2.1 Cultural Resources Background and Context

The Los Angeles area extends from the western Mojave at the base of the Tehachapi Mountains, south through the Angeles National Forest and into the Los Angeles Basin. It is located within Los Angeles County. The corridor encompasses at least three major environmental provinces: foothill, mountain, and desert.

Prehistory

Scholars have defined a series of cultural traditions and periods for this region beginning at the end of the Pleistocene Epoch (*ca.* 12,000 BP) and running through the Contact Period (*ca.* 300 BP). These periods are often overlapping in duration and regional distribution.

Within the West Mojave Desert region the Terminal Pleistocene/Paleo-Indian period (12,000 to 10,000 BP) featured increasing post-glacial temperatures and unstable climates. Archaeologists hypothesize that the earliest occupants of the region led a foraging lifestyle focused around lakeshore or wetland environments. As climatic conditions became warmer and more arid during the transition from the late Pleistocene to the early Holocene (10,000 to 7000 BP), human populations responded by focusing their subsistence efforts on a wider variety of faunal and floral resources. It is presumed that the adaptive strategy continued to be one of generalized hunting and gathering focused on the exploitation of wetland resources.

Relatively recent paleoecological and paleohydrological evidence suggests maximum aridity in the desert regions existed between *ca.* 7000 and 5000 BP. During this period, it is believed that populations diminished and dispersed due to the decrease in permanent wetland habitats; thus, the Pinto Period reflects a settlement pattern in which the population relocated from the ancient lakeshores to seasonal water sources. As a result of increased precipitation after 5000 BP, modern vegetation and climate conditions were well established by 4300 BP. During the Gypsum Period (4000 to 1500 BP), large village sites appear in the archaeological record.

The Saratoga Springs Period (1500 to 800 BP) is marked by strong regional cultural developments, especially in the Southern California desert area, which was heavily influenced by the Hakataya (Patayan) culture of the lower Colorado River. The Late Period (800 to 300 BP) saw the end of the obsidian trade and an increased use of local

cryptocrystalline toolstones. Changes in regional networks of raw material exchange may be associated with a drought episode (*ca.* 850 to 650 BP) and the migration of Numic-speaking populations out of southeastern California. With the return of wetter conditions around 500 BP, there is some evidence of population increase in southern California and archaeological evidence indicates that the Late Period populations utilized a greater variety of subsistence resources, including both small and large mammals, and in some areas, fish (CPUC and USFS 2010).

Ethnography

When Europeans arrived in southern California, the western Mojave Desert, San Gabriel Mountains, and eastern Los Angeles Basin were inhabited by at least three distinct cultural groups with the occasional presence of several others. These groups include members of the Kitanemuk, Tataviam, Vanyume, and Gabrielino tribes; their languages and territories are presented in Table III.8-9 (CPUC and USFS 2010).

**Table III.8-9
 Ethnographic Groups in the Los Angeles Area**

Ethnographic Group	Language Family	Territory
Kitanemuk	Takic	Southern foothills of the Tehachapi Mountain
Tataviam	Takic	South side of the Antelope Valley and into the San Gabriel Mountains
Vanyume	Takic	Mojave River area
Gabrielino	Takic	Eastern San Gabriel Mountains and south into the Los Angeles Basin

History

As discussed earlier, the history of the region is generally divided into the Spanish (1769-1821), Mexican (1821-1846), and American (after 1846) periods. During the Spanish period the two missions that most influenced the Los Angeles area are Mission San Gabriel Arcangel (1771) near modern day San Gabriel and Mission San Fernando Rey de España (1797) near modern day Mission Hills district of Los Angeles.

The first Europeans to enter the Antelope Valley were Spanish soldiers and missionaries exploring the interior of Alta, California, including Captain Pedro Fages in 1772, Father Francisco Garces in 1776, Jedediah Smith and Kit Carson in the 1820s, and John Fremont in 1844. California’s accession to the union in 1850 led to several developments in the region. In 1854, Fort Tejon was established to protect the major north–south throughway

west of the corridor. The Butterfield Stage began service through the Antelope Valley in 1858. A telegraph line between Los Angeles and San Francisco was run through the region in 1860. With construction of the Southern Pacific Railroad through the Antelope Valley in 1876, farming became popular in the area. The towns of Acton, Alpine (Palmdale), Lancaster, and Rosamond were established along the rail line. Ranching declined due to a series of severe droughts in the late 1800s, but the completion of the Los Angeles Aqueduct between the Owens Valley and Los Angeles in 1913 brought increased agriculture and ranching to the area.

Throughout the late eighteenth and nineteenth centuries, the San Gabriel Mountain region was used for a variety of commercial enterprises including lumbering, mining, herding stock, as well as for hunting, camping, and other recreation. Beginning in the 1770s, lumber was cut for the construction of the missions and later for the construction of the communities of the Los Angeles Basin. The first gold rush in the San Gabriel's was triggered by Francisco Lopez in 1842. Land in the eastern Los Angeles Basin was settled throughout the mid to late nineteenth century, beginning with El Monte in 1852, at the terminus of the Santa Fe Trail. Other cities followed, including Rosemead, Pasadena, Irwindale, and Baldwin Park (CPUC and USFS 2010).

III.8.7.1.2.2 Cultural Resources in the Los Angeles Area

Although the total number of cultural resources present in this area is unknown, a rough order of magnitude estimate can be derived based on recent surveys related to TRTP. Table III.8-10 presents information on the types of cultural resources identified during the TRTP surveys. Prehistoric site types include habitation sites, lithic scatters, bedrock milling stations, hunting blinds, trails, quarries, and rock art. Historic-era resources include roads, trails, and refuse scatters. Other historical themes represented in the inventory include electrical transmission, mining, ranching/farming, water distribution, and national defense. Of the 135 resources, 6 are eligible or potentially eligible for the NRHP and the CRHR (CPUC and USFS 2009, 2010).

**Table III.8-10
 Cultural Resources Types in the Los Angeles Transmission Corridor Area**

Time Period	No. of Resources	Percent	No. of Resources/Acre ¹
Prehistoric	66	48.9%	0.009
Historic	64	47.4%	0.009
Multicomponent	5	3.7%	0.001
Total	135	100%	0.019

¹ Based on surveys of 7,297 acres out of 7,750 acres in the proposed route.

Table III.8-11 and Table III.8-12 show the typical number of cultural resources that could potentially be affected by transmission line corridors and substations.

**Table III.8-11
Typical ROW Widths and Linear Impacts of Bulk Transmission to
Los Angeles Area Cultural Resources**

Transmission Line Voltage	Transmission ROW Corridor Width (feet)	Access Road Width (feet)	Potential Extent of Effects/ Linear Mile (Acres)	Potential No. of Resources Affected/ Linear Mile
<i>230 kV</i>				
Double-Circuit Tower Line	100	24	15	0.29
<i>500 kV</i>				
Single-Circuit Tower Line	200	24	27	0.52
Two Single-Circuit Tower Lines	450	24	57	1.08
Three Single-Circuit Tower Lines	700	24	88	1.67
Four Single-Circuit Tower Lines	950	24	118	2.24

Note: Access road width is added to ROW width for total width of linear disturbance.

**Table III.8-12
Impacts of Substation Construction to Cultural Resources in the Los Angeles Area**

Substation Type	Size (Acres)	Potential No. of Resources Affected
66 kV Collector Substation	39 acres	0.74
230/66 kV Collector Substation	77 acres	1.46
500/230 kV Collector Substation	176 acres	3.34
500/230/66 kV Super Collector Substation	215 acres	4.09

III.8.7.1.3 Central Valley Area

This transmission corridor extends from Rosamond in the Mojave Desert to Tracy and uses studies for the existing Path 15 and 26 corridors through Los Angeles, Kern, Fresno, Kings, Merced, Modesto, and San Joaquin counties as a proxy for cultural resources. For a discussion of the southern portion in the West Mojave, see Section III.8.7.1.2, Los Angeles Area.

III.8.7.1.3.1 Cultural Resources Background and Context

The Central Valley area encompasses at least three major environmental provinces: foothill, mountain, and desert.

Prehistory

The Paleo-Indian period (13,550 to 10,550 BP) begins with the first human occupation of California. Sites from this time period are characterized by “lanceolate bifaces, usually with an edge ground concave base, that exhibits a large central flake scar running from the basal end up the middle of at least one face toward the tip” (Rondeau et al. 2007). At the regional level the people who made them are also referred to as Folsom and Clovis, and in California the assemblages have been referred to as the “Fluted Point Tradition.” Paleo-Indian finds are rare and mostly consist of isolated artifacts without clear stratigraphic associations, but are understood to represent the earliest occupants of the New World. Paleo-Indian sites in the interior primarily date to around 10,000 BP and are located near lakes and marshes.

The Lower Archaic (10,550 to 7550 BP) has also been referred to as the “Western Pluvial Lakes Tradition” in interior California and the “Paleo-Coastal Tradition” along the coast. It is primarily represented by isolated finds of distinctive stemmed projectile points and other flaked stone tools such as stone crescents. The common occurrence of large heavily worked projectile points has led to the interpretation that hunting artiodactyls was the focus of Early Archaic economies.

The Middle Archaic (7550 to 2550 BP) is marked by a dramatic increase in temperatures that resulted in the shrinking and complete disappearance of regional lakes. In general, this time period is associated with a shift to mortar and pestle, more intensive subsistence practices, greater residential stability, the increasing importance of fishing, basketry, simple pottery, and clay objects, and the establishment of extensive exchange networks. During this time there were two distinct settlement–subsistence patterns in the San Joaquin Valley: the valley floor pattern and the foothills pattern. Archaeological sites associated with the foothills pattern are common, especially in buried contexts. Middle Archaic sites on the valley floor are rare, probably due to natural geomorphic changes.

The Upper Archaic (2550 to 900 BP) was cooler and wetter than the Middle Archaic. This evidence suggests that this period was characterized by the development of distinct sociopolitical entities, marked by contrasting burial postures and artifact styles. Subsistence practices within the valley emphasized a heavy reliance on acorns; at the valley edge, acorns were supplemented with pinyon nuts.

The Emergent period (900 BP to historic contact) is characterized by the onset of cultural patterns similar to those existing at the time of European contact. During this time, large

populous mound villages were established along river channels and sloughs. These communities invested in the construction of fish weirs and became increasingly dependent on fishing, small seeds, and plant harvesting in general over time. The local production of shell beads also became common, indicating the adoption of beads as a monetized system of exchange (Rondeau et al. 2007).

Ethnography

The Central Valley area is located within the vast traditional territory claimed by the California Native American group known as Yokuts, as presented in Table III.8-13.

Table III.8-13
Ethnographic Groups in the Central Valley Area

Ethnographic Group	Language Family	Territory
Yokuts	Penutian	San Joaquin Valley, eastern South Coast Ranges, and Sierra Nevada foothills of central California

Source: Rosenthal et al. 2007

History

As discussed earlier, the historic period of the San Joaquin Valley is generally divided into the Spanish Period, the Mexican Period, and the American Period. The San Joaquin Valley’s combination of large wetland areas and the surrounding arid lands made it unsuitable for the kind of agriculture Euro-Americans practiced so non-Native American settlement did not occur on any significant scale in the Plan Area until the late nineteenth century, when irrigation systems were developed.

Sporadic Spanish, and later Mexican, Russian, and American explorations in the “Great Valley” fed international tensions, but resulted in no settlement. The missionaries recruited and settled a few Southern Valley Yokuts at missions San Luis Obispo, San Juan Bautista, Soledad, and San Antonio, but the Spanish had little impact on the great majority of the Southern Valley Yokuts. In the 1840s the Mexican authorities made a few large rancho grants of San Joaquin Valley land, but no actual homesteads were established there under the Mexican authorities.

California was admitted as a state in 1850. In 1851, the Yokuts, along with several other San Joaquin Valley tribes, agreed to relinquish their land, opening it to settlement under federal land law. These laws fundamentally shaped the early history of the region. The fertility of the region’s soils under irrigation proved to be great. In the wake of the Gold Rush, the territory of the Southern Valley Yokuts was overrun and seized by white settlers.

The Yokuts, never very warlike, greatly reduced in numbers, and vulnerable in their exposed open habitat, put up little resistance (Rosenthal et al. 2007).

III.8.7.1.3.2 Cultural Resources in the Central Valley Area

Although the total number of cultural resources present in this area is unknown, a rough order of magnitude estimate can be derived based on surveys related to the Los Banos–Gates Transmission Project. Table III.8-14 presents information on the types of cultural resources identified during these surveys. Prehistoric resources include milling stations, lithic scatters and prospects, village sites, rock art (cupule sites), temporary campsites, and roads. Historic resources include an oil field, oil pumping station, railroad alignment, house site, Los Banos Creek (California Historical Landmark No. 550), debris scatters, trash dump, aqueduct, wagon road, and numerous roads (CPUC 2001; ICF International 2011).

Table III.8-14
Cultural Resources Types in the Central Valley Transmission Corridor Area

Time Period	No. of Resources	Percent	No. of Resources/Acre ¹
Prehistoric	11	32.4%	0.001
Prehistoric (human remains)	1	2.9%	0.000
Historic	22	64.7%	0.001
Multicomponent and Unknown	0	0%	0.000
Total	34	100%	0.002

¹ Assuming a survey area of 20,752 acres for a corridor 129.7 miles long and 1,320 feet wide

Tables III.8-15 and III.8-16 show the typical number of cultural resources that could potentially be affected by transmission line corridors and substations.

Table III.8-15
Typical ROW Widths and Linear Impacts of Bulk Transmission to Central Valley Area Cultural Resources

Transmission Line Voltage	Transmission ROW Corridor Width (feet)	Access Road Width (feet)	Potential Extent of Effects/Linear Mile (in Acres)	Potential No. of Resources Affected/Linear Mile
<i>230 KV</i>				
Double-Circuit Tower Line	100	24	15	0.03
<i>500 kV</i>				
Single-Circuit Tower Line	200	24	27	0.05
Two Single-Circuit Tower Lines	450	24	57	0.11

Table III.8-15
Typical ROW Widths and Linear Impacts of Bulk Transmission to
Central Valley Area Cultural Resources

Transmission Line Voltage	Transmission ROW Corridor Width (feet)	Access Road Width (feet)	Potential Extent of Effects/Linear Mile (in Acres)	Potential No. of Resources Affected/Linear Mile
Three Single-Circuit Tower Lines	700	24	88	0.18
Four Single-Circuit Tower Lines	950	24	118	0.24

Note: Access road width is added to ROW width for total width of linear disturbance.

Table III.8-16
Impacts of Substation Construction to Cultural Resources in the Central Valley Area

Substation Type	Size (Acres)	Potential No. of Resources Affected
66 kV Collector Substation	39 acres	0.08
230/66 kV Collector Substation	77 acres	0.15
500/230 kV Collector Substation	176 acres	0.35
500/230/66 kV Super Collector Substation	215 acres	0.43

III.8.7.1.4 North Palm Springs–Riverside Area

This transmission corridor extends from approximately Desert Center south of Joshua Tree National Park to Devers Substation to Rialto in San Bernardino County, and uses the existing Devers–Palo Verde No. 2 corridor west from Palm Springs as a proxy for cultural resources.

III.8.7.1.4.1 Cultural Resources Background and Context

The North Palm Springs–Riverside area encompasses at least two major environmental provinces: mountain and desert.

Prehistory

The prehistoric cultural sequence comprises two major periods: the San Dieguito/Mojave (12,000 to 3200 BP) and the Amargosa (3200 to 800 BP). The San Dieguito Complex is subsumed within the Mojave I period, a period lasting between 12,000 and 6000 BP. During this period, populations adapted to the cooler and moister conditions of the sub-Pleistocene environment.

The Mojave II period, between 6000 and 3200 BP, is often placed within the Milling Stone Horizon. Environmental conditions fluctuated between warm and dry to cool and wet, to warm and wet to warm and dry during this period. Settlement patterns were similar to earlier phases and related to the procurement of fluctuating and widely dispersed resources.

The Amargosa I occurred between 3200 and 1400 BP. A wide range of floral and faunal resources were exploited during this period by regionally specialized hunters and gatherers who used a more scheduled movement across various environmental zones. Food sources including small game, nuts, seeds, and berries were used. The Amargosa II took place between approximately 1400 and 800 BP. This was characterized by increasing numbers of small projectile points in archaeological assemblages, indicating the introduction of the bow and arrow (CPUC and BLM 2006).

Following the Amargosa Period are a number of regional chronological units, in which the cultures attested ethnographically formed (Sutton et al. 2007).

Ethnography

The North Palm Springs–Riverside area crosses through the present and/or ancestral ethnographic territories of the Serrano, Cahuilla, Chemehuevi, Quechan, and Panya (Halchidhoma) people. Their languages and territories are presented in Table III.8-17 (CPUC and BLM 2006).

Table III.8-17
Ethnographic Groups in the North Palm Springs–Riverside Area

Ethnographic Group	Language Family	Territory
Serrano	Takic	San Bernardino Mountains east to Mount San Gorgonio, the San Gabriel Mountains west to Mount San Antonio, and portions of the desert to the north and the fringe of the San Bernardino Valley
Cahuilla	Takic	San Bernardino Mountains in the north to Borrego Springs and the Chocolate Mountains in the south, a portion of Colorado Desert west of Orocopia Mountain to the east, and the San Jacinto Plain near Riverside and the eastern slopes of Palomar Mountain to the west
Chemehuevi	Numic	Colorado River Valley
Quechan	Yuman	Colorado River areas south of Panya
Panya (Halchidhoma)	Yuman	Palo Verde Valley

History

As discussed earlier, the history of the region is generally divided into the Spanish (1769-1821), Mexican (1821-1846), and American (after 1846) periods. Hernando de Alarcón sailed up the Colorado River in 1540 marking the first European entrance into the Arizona/California region. More substantial Spanish exploration began with the entradas of Father Jacobo Sedelmayr in 1744 when he traversed what is now Blythe. Francisco Garcés and his party in 1771 crossed portions of the area and then returned in 1776.

Two of the earliest settlers within the North Palm Springs–Riverside Area were Daniel Sexton and Pauline Weaver in 1841 or 1842. The pair traveled north from San Geronimo Pass and into Edgar Canyon (present-day Little San Geronimo Creek) and set up a primitive sawmill. San Timoteo Canyon was a common travel route both prehistorically and historically, and the Southern Pacific Railroad was completed through the canyon in 1870. In San Bernardino County, one of the communities the railroad passed through was Colton, a city established in 1873.

In the early 1880s the Atlantic and Pacific Railroad (now the Santa Fe Railway) completed its track system across the California desert, and brought miners who coaxed tungsten, gold, and silver from the soils in the Old Woman Mountains and the Chuckwallas. The southern transcontinental line, also known as the Sunset Route, was completed on January 12, 1883, and created an even greater influx of people into Southern California. By the 1930s, paved roads spread from towns on the Colorado River such as Needles and Yuma. Notable settlements included Desert Center and Chambless. The Metropolitan Water District (MWD) aqueduct was constructed between 1934 and 1941.

General George Patton's Desert Training Center (DTC) (1942-1944) served as the training grounds for soldiers and equipment bound for the deserts of Africa. The DTC spread over many square miles and included not only the semi-permanent operations facilities but also outlying tank training grounds, infantry camps, and outposts (CPUC and BLM 2006).

III.8.7.1.4.2 Cultural Resources in the North Palm Springs–Riverside Area

Although the total number of cultural resources present in this area is unknown, a rough order of magnitude estimate can be derived based on recent surveys related to the Devers–Palo Verde No. 2 Project (CPUC and BLM 2006). Table III.8-18 presents information on the types of cultural resources identified during these surveys. Two resources are listed on the NRHP and 33 resources are potentially eligible for the NRHP and the CRHR. Prehistoric resource types consisted of lithic scatters, temporary encampments, rock rings and alignments, quartz assays/reduction stations, and trail

segments. Historic resources included refuse scatters, road segments, DTC sites, foundations, canals, drains, ditches, and railroad segments.

**Table III.8-18
Cultural Resources Types in the North Palm Springs-
Riverside Transmission Corridor Area**

Time Period	No. of Resources	Percent	No. of Resources/Acre ¹
Prehistoric	50	54.9%	0.032
Historic	38	41.8%	0.025
Multicomponent	3	3.3%	0.002
Total	91	100%	0.060

¹ Based on a survey acreage of 1,518 acres.

Tables III.8-19 and III.8-20 show the typical number of cultural resources that potentially could be affected by transmission line corridors and substations.

**Table III.8-19
Typical ROW Widths and Linear Impacts of Bulk Transmission to North Palm
Springs-Riverside Area Cultural Resources**

Transmission Line Voltage	Transmission ROW Corridor Width (feet)	Access Road Width (feet)	Potential Extent of Effects/Linear Mile (in Acres)	Potential No. of Resources Affected/Linear Mile
<i>230 kV</i>				
Double-Circuit Tower Line	100	24	15	0.90
<i>500 kV</i>				
Single-Circuit Tower Line	200	24	27	1.62
Two Single-Circuit Tower Lines	450	24	57	3.42
Three Single-Circuit Tower Lines	700	24	88	5.28
Four Single-Circuit Tower Lines	950	24	118	7.08

Note: Access road width is added to ROW width for total width of linear disturbance.

Table III.8-20
Impacts of Substation Construction to Cultural Resources
in the North Palm Springs–Riverside Area

Substation Type	Size (Acres)	Estimated Number of Resources Impacted
66 kV Collector Substation	39 acres	2.34
230/66 kV Collector Substation	77 acres	4.62
500/230 kV Collector Substation	176 acres	10.56
500/230/66 kV Super Collector Substation	215 acres	12.90

III.8.7.2 Bureau of Land Management Land Use Plan Amendment Outside of Plan Area

Cultural resources found within the CDCA Plan area boundary but outside the Plan Area are shown in Table III.8-21. The background and context described in Section III.8.2 also applies to the areas outside the Plan Area.

Table III.8-21
Cultural Resources of the BLM LUPA Outside of Plan Area Affected Environment

NR Status	Prehistoric	Historic	Multi-Component	Unknown Type	Isolate	Total
Unknown Status	89	66	8	1,028	0	1,191
Not Evaluated	382	143	25	0	0	550
Ineligible	20	17	2	1	103	143
Eligible	83	6	5	1	0	95
Listed	8	0	0	0	0	8
Total	582	232	40	1,030	103	1,987