

Chapter 6

Cultural Resources

This chapter discusses the potential for the Program to affect cultural resources. It describes the prehistory, ethnography, and history of the regions containing hatchery sites and stocking locations; study methods and results; the findings and conclusions of previous studies relevant to the Program; the regulatory setting; the impacts of the Program on cultural resources; and mitigation measures for impacts on significant cultural resources. Appendix A contains site descriptions and operational details for each of the DFG's 14 trout hatchery facilities and 10 salmon and steelhead hatchery facilities.

Sources of Information

The cultural resources inventory included a records search, a review of archival information, and Native American consultation. The records search was conducted in December 2008 at the following information centers of the California Historical Resources Information System (CHRIS):

- Central California Information Center (CCIC) (for the Merced River Hatchery, Moccasin Creek Hatchery, and Mokelumne River Hatchery areas),
- Eastern Information Center (EIC) (for the Black Rock Rearing Ponds, Fish Springs Hatchery, Hot Creek Hatchery, and Mount Whitney Hatchery areas),
- North Central Information Center (NCIC) (for the Nimbus Hatchery area and American River Hatchery area),
- North Coastal Information Center (NoCIC) (for the Mad River Hatchery area),
- Northeast Information Center (NEIC) (for the Crystal Lake Hatchery, Darrah Springs Hatchery, Feather River Hatchery, Feather River Hatchery Thermalito Annex, Iron Gate Hatchery, Mount Shasta Hatchery, and Trinity River Hatchery areas),
- Northwest Information Center (NWIC) (for the Silverado Fisheries Base, Warm Springs Hatchery, and Coyote Valley Fish Facility areas),
- San Bernardino Archaeological Information Center (SBAIC) (for the Mojave River Hatchery area),
- South Central Coastal Information Center (SCCIC) (for the Fillmore Hatchery area), and the
- Southern San Joaquin Valley Information Center (SSJVIC) (for the Kern River Planting Base and San Joaquin Hatchery areas).

In addition, information gathered from prefield research was used to establish the cultural setting of the Program and to evaluate identified cultural resources. All of these sources contributed to the information discussed in this chapter.

Existing Conditions

The existing cultural resources conditions related to the Program, including applicable regulations, are described below.

Regulatory Setting

Although historic resources are generally known, archaeological and paleontological resources frequently are uncovered during the construction of projects that require excavation. Strict mitigation and protection measures are required whenever such resources are discovered. In addition, there is a general requirement that a cultural resources survey and environmental analysis be prepared prior to the commencement of any action, development, or land use change subject to NEPA or to CEQA on lands subject to federal jurisdiction or for projects involving federal funds.

Federal

National Environmental Policy Act

NEPA addresses a wide range of environmental issues, including the documentation of, and potential impacts on, cultural and historic properties. Most federal agencies consider compliance with Section 106 of the National Historic Preservation Act (NHPA) (see below) as constituting adequate analysis for NEPA's purposes, though NEPA lacks explicitly defined significance criteria and analysis protocols for cultural resources. Thus, different and possibly wider considerations of cultural resources are possible under a NEPA analysis.

Future site-specific projects that would receive federal funding, affect federal lands, or require federal decision making would be subject to the requirements of federal laws and regulations governing cultural resources.

National Historic Preservation Act of 1966

The NHPA establishes laws for historic resources to "preserve important historic, cultural, and natural aspects of our national heritage, and to maintain, wherever possible, an environment that supports diversity and a variety of individual choice." The Antiquities Act of 1906, which aimed to protect important historic and archaeological sites, initiated legislation for historic preservation. It established a system of permits for conducting archaeological studies on federal land, as well as setting penalties for noncompliance. This permit process controls disturbances to archaeological sites. New permits are currently issued under the Archeological Resources Protection Act (ARPA) of 1979. The purpose of the ARPA is to enhance the preservation and protection of archaeological resources on public and Native American lands.

Section 106 of the National Historic Preservation Act

Section 106 of the NHPA (36 CFR Part 800) requires federal agencies, or those they fund or permit, to consider the effects of their actions on the properties that may be eligible for listing in or that are listed in the National Register of Historic Places (NRHP), the official list of the nation's recognized cultural resources. To determine whether an undertaking could affect NRHP-eligible properties, cultural resources (including archaeological, historical, and architectural properties) must be

inventoried and evaluated for listing in the NRHP. Although compliance with Section 106 is the responsibility of the lead federal agency, the work necessary for compliance may be undertaken by others. Implementing regulations for Section 106 (36 CFR 800) detail the following six basic steps.

- Initiate consultation and public involvement.
- Identify and evaluate historic properties.
- Assess effects of the project on historic properties.
- Consult with the state historic preservation officer (SHPO) regarding adverse effects on historic properties, resulting in a memorandum of agreement (MOA).
- Submit the MOA to the Advisory Council on Historic Preservation (ACHP).
- Proceed in accordance with the MOA.

National Register of Historic Places

Authorized under the NHPA, the NRHP is part of a national program to coordinate and support public and private efforts to identify, evaluate, and protect historic and archaeological resources. The National Park Service (NPS), under the Secretary of the Interior, administers the NRHP. Properties listed in the NRHP include districts, sites, buildings, structures, and objects that are significant to American history, architecture, archaeology, engineering, and culture. These resources contribute to an understanding of the historical and cultural foundations of the nation.

The NRHP includes:

- all historic areas in the National Park System;
- National Historic Landmarks (NHLs) that have been designated by the Secretary of the Interior for their significance to all Americans; and
- properties significant to the nation, a state, or a community that have been nominated by the state, federal agencies, or others and have been approved by the NPS.

NRHP criteria for eligibility are defined below.

The quality of significance in American history, architecture, archaeology, and culture is present in districts, sites, buildings, structures, and objects of state and local importance that possess integrity of location, design, setting, materials, workmanship, feeling and association and that:

- are associated with events that have made a contribution to the broad pattern of American history;
- are associated with the lives of people significant in America's past;
- embody the distinct characteristics of a type, period, or method of construction, or represent the work of a master, or possess high artistic values, or represent a significant and distinguishable entity whose components may lack individual distinction; or
- have yielded, or are likely to yield, information important in prehistory or history (36 CFR 60.4).

Federal Historic Significance Criteria

For federal projects, the significance of a cultural resource is evaluated in terms of the resource's eligibility for listing in the NRHP. NRHP criteria are provided above.

American Indian Religious Freedom Act and Native American Graves Protection and Repatriation Act of 1990

The American Indian Religious Freedom Act (Public Law 95-341) recognizes that Native American religious practices, sacred sites, and sacred objects have not been properly protected under other statutes. It establishes as national policy that traditional practices and beliefs, sites (including the right of access), and the use of sacred objects will be protected and preserved.

Additionally, the Native American Graves Protection and Repatriation Act of 1990 (43 CFR 10) applies to Native American remains on federally owned lands. Under this legislation, federally recognized tribes have the authority to determine the disposition of remains.

State

California Environmental Quality Act

CEQA requires that public agencies financing or approving public or private projects must assess the impacts of the project on cultural resources. Furthermore, it requires that if a project would result in significant impacts on important cultural resources, alternative plans or mitigation measures must be considered. Only significant cultural resources, however, need to be addressed. Thus, prior to the development of mitigation measures, the importance of cultural resources must be determined. The steps that are normally taken in a cultural resources investigation for CEQA compliance are as follows:

- identify cultural resources,
- evaluate the significance of resources,
- evaluate the effects of a project on all resources, and
- develop and implement measures to mitigate the effects of the project on significant resources only.

The State CEQA Guidelines define three ways in which a cultural resource may qualify as a historical resource for the purposes of CEQA review.

- The resource is listed in or is determined eligible for listing in the California Register of Historical Resources (CRHR);
- The resource is included in a local register of historical resources, as defined in PRC 5020.1(k), or is identified as significant in a historical resource survey meeting the requirements of PRC 5024.1(g) unless the preponderance of evidence demonstrates that it is not historically or culturally significant.
- The lead agency determines the resource is significant as supported by substantial evidence in light of the whole record (14 CCR 15064.5[a]).

State Historical Significance Criteria

A cultural resource may be eligible for inclusion in the CRHR if it meets any of the criteria listed below.

- The resource is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.
- The resource is associated with the lives of persons important in California's past.
- The resource embodies the distinctive characteristics of a type, period, region, or method of construction; represents the work of an important creative individual; or possesses high artistic values.
- The resource has yielded, or may be likely to yield, information important in prehistory or history.

In addition, CEQA distinguishes between two classes of archaeological resources: archaeological resources that meet the definition of a historical resource as described above, and "unique archaeological resources." An archaeological resource is considered unique if it:

- is associated with an event or person of recognized significance in California or American history or of recognized scientific importance in prehistory;
- can provide information that is of demonstrable public interest and is useful in addressing scientifically consequential and reasonable research questions; or
- has a special or particular quality, such as being the oldest, best, largest, or last surviving example of its kind (PRC 21083.2).

Local

Local Government Controls

In addition to federal and state regulations, individual cities and counties also may provide regulatory protection and advisement regarding cultural resources. For instance, many jurisdictions fund agencies designated to identify and protect resources. Some afford local ordinances that identify goals and standards for the maintenance and protection of such resources.

Local Government Historic Preservation Activities

Several jurisdictions have ordinances in place that focus on historic preservation. Jurisdictions that do not have specific historic preservation ordinances in place conduct archaeological or historic surveys and part of the environmental analysis for specific projects, when potentially significant historic and cultural resources are known or suspected. The general plans of many local jurisdictions include a listing of locally recognized historic resources.

Environmental Setting

The 24 fish hatchery facilities are located throughout the state of California and, therefore; vary among each other in their prehistory, ethnography, and history. For the "Prehistory" section, below, the six geographical locations are presented alphabetically, with the pertinent hatchery facilities

listed. For the “Ethnography” section, also below, the 15 ethnographic tribes of the hatchery locations are presented alphabetically, also with the pertinent hatchery facilities listed. The “History” section, describing the history of California’s fish hatchery facilities, is presented in Chapter 2, “Program Description.”

Prehistory

The Central Valley

American River Hatchery, Feather River Hatchery, Feather River Hatchery Thermalito Annex, Kern River Planting Base, Merced River Hatchery, Moccasin Creek Hatchery, Mokelumne River Hatchery, Nimbus Hatchery, and San Joaquin Hatchery

The earliest accepted evidence of human occupation in the Central Valley during the Paleo-Indian Period (11,550–8500 BC) comes from the discovery of basally thinned and fluted projectile points at three separate locations in the southern portion of the basin (Rosenthal et al. 2007:151).

As with the Paleo-Indian Period, the Lower Archaic Period (8000–5550 BC) is characterized by mostly isolated finds, including stemmed points, chipped stone crescents, and early concave base points, all of which were found on the ancient shore of Tulare Lake (Fenenga 1992; Wallace and Riddell 1991).

The beginning of the Middle Archaic (5550–550 BC) brought about significant climate changes to the Central Valley: warmer, drier conditions; the development of the Delta as sea levels rose; and the stabilization of fans and floodplains around 5550 BC calibrated (written as cal BC or cal AD; calibration is used to convert the laboratory determination of carbon-dated materials to calendar years) (Rosenthal et al. 2007:152). Around this time, there appeared to be two distinct settlement-subsistence adaptations operating in central California: one centering on the foothills and the other on the valley floor (Fredrickson 1994b:102–103; Rosenthal and McGuire 2004:161–163). Late Middle Archaic sites appear to be increasingly sedentary, as indicated by refined and specialized tool assemblages and features, a wide range of non-utilitarian artifacts, abundant trade objects, and plant and animal remains indicative of year-round occupation (Moratto 1984; Ragir 1972; Schulz 1970, 1981; White 2003a, 2003b).

The Upper Archaic (550 BC–AD 1100) is characterized by another change in climate conditions—this time, to a cooler, wetter, and more stable climate. These changes resulted in renewed fan and floodplain deposition and soil formation in the Central Valley (Rosenthal et al. 2007:156). New technologies were developed during this period, including new types of bone tools and bone implements, and widespread manufactured goods such as *Haliotis* ornaments and ceremonial blades (Bennyhoff and Fredrickson 1994; Fredrickson 1974a; Moratto 1984). The archetypal Upper Archaic expression, identified as the Berkeley Pattern (Fredrickson 1973, 1974a), was recognized in sites of the lower Sacramento Delta region containing large quantities of habitation debris and features (such as fire-cracked rock heaps, shallow hearths, house floors, and flexed burials), which reflected long-term residential occupation (Bouey 1995:348–349).

Lastly, the archaeological record for the Emergent/Historic Period (AD 1000) is more substantial and comprehensive than those of earlier periods in the Central Valley, and the artifact assemblages are the most diverse (Bennyhoff 1977; Fredrickson 1974a; Kowta 1988; Sundahl 1982, 1992). The Emergent Period, which enjoyed a relatively stable climate as opposed to the earlier periods, is

associated with the use of the bow and arrow over the dart and atlatl (Bennyhoff 1994a). Other characteristics of this period include a regionally variable economy, changes in manufacturing residues at Emergent Period sites, and the decentralization of shell bead production (Rosenthal et al. 2007:159).

Mojave Desert

Mojave River Hatchery

Clovis (ca. 10,000–8000 cal BC) is the only cultural complex dating to the Pleistocene that can be confidently identified in the Mojave Desert (Sutton et al. 2007:233). It is marked by the characteristic fluted projectile point of the same name. Paleo-Indian groups were likely small, highly mobile populations living in small, temporary camps near permanent water sources (Sutton et al. 2007:234).

The Lake Mojave Complex, generally dated to between 8000 and 6000 cal BC, was the predominant complex during this period. It is characterized by Lake Mojave and Silver Lake projectile points, bifaces, unifaces, crescents, and occasional cobble-core tools and ground stone implements. The Lake Mojave Pattern appears to reflect a forager-like strategy organized around relatively small social units (Sutton et al. 2007:237).

The latest research suggests that there are two complexes associated with the Middle Holocene: the Pinto Complex and the Deadman Lake Complex (Sutton et al. 2007:238–239). The Pinto Complex, the primary cultural complex, may have been formed during the Early Holocene and therefore would slightly overlap the Lake Mojave Complex. Deadman Lake Complex sites, which appear to have been a separate cultural complex, are characterized by large quantities of cobbles and core tools, bifaces, contracting-stemmed or lozenge-shaped points, simple flake tools, and milling implements (Sutton et al. 2007:239).

There are two complexes associated with the Late Holocene: the Gypsum Complex and the Rose Spring Complex. The Gypsum Complex, which dates to between 2000 cal BC and cal AD 200, is characterized by corner-notched (Elko series), concave base (Humboldt series), and well-shouldered contracting-stemmed (Gypsum series) point forms (Sutton et al. 2007:241). The Rose Spring Complex is considered to have developed after the Gypsum Complex, around cal AD 200, and lasted until around cal AD 1100. The small points of the Rose Spring series appear to be essentially the Elko series and Gypsum Cave point series, reduced in size (Warren and Crabtree 1986:189). Other features of this complex include the bow and arrow into the western Mojave Desert, a major population increase, dramatic changes in artifact assemblages, and well-developed middens (Sutton et al. 2007:241; Gardner 2002, 2006; Sutton 1988, 1996).

After about cal AD 1100, new technologies were introduced, populations appear to have declined, and several separate cultural complexes emerged, the predecessors of known ethnographic groups in the Mojave Desert (Sutton et al. 2007:242). Late Prehistoric occupation sites include major villages with associated cemeteries, special purpose sites, and seasonal sites (Gardner 2006). Artifact assemblages of the Late Prehistoric Period included Desert series projectile points, buffware and brownware ceramics, shell and steatite beads, incised stones, and a variety of milling tools (Warren and Crabtree 1986).

Northeast California

Crystal Lake Hatchery, Darrah Springs Hatchery, Iron Gate Hatchery, and Mount Shasta Hatchery

Paleo-Indian (5000+ BC) sites in northeast California are identified as such by hydration readings on obsidian tools, flakes, and Clovis-like projectile points found at sites like Mammoth Springs and Hat Creek (Dillon 2002:87) and by large obsidian hydration rim values (McGuire 2007:169). Other evidence of prehistoric occupation in northeast California in the latter part of the Early Holocene (<9500 cal BC) comes from large lanceolate and stemmed projectile points that typically occur with various heavy core tools, bifaces, flake tools, and chipped stone crescents; such evidence commonly is found around the former shores of extinct pluvial lakes and other ancient landforms (McGuire 2007:170).

Post-Mazama (5000–3000 BC) assemblages include Northern side-notched projectile points, antler wedges, mortars with V-shaped bowls and pointed pestles, T-shaped drills, tanged blades, and flaked stone pendants. Menlo Phase sites are normally found near marshes or permanent water sources; components of the same age and composition have been identified at Nightfire Island on Lower Klamath Lake (Sampson 1985). Moving later into the period, however, Middle Holocene sites occur primarily upslope on alluvial fans closer to fresh water or along major drainages or adjacent to springs (as opposed to saltwater marshes or lakes) (Rosenthal 2000).

The Early Archaic Period (3000–1500 BC) is characterized by the first sustained occupations, marked by such components as milling stones, mortars and pestles, and a variety of dart forms, as found in Lassen Volcanic National Park (White et al. 2005) and the Bucks Lake region (Johnson 1980; McGuire 2007:171). The Martis Complex (also known as the Martis Tradition), located in upland contexts along the eastern and western flanks of the Sierra Nevada north of Lake Tahoe, is known for its basalt bifacial tool production, which spread south to population centers in the Central Valley and spread west to foothill areas (McGuire 2007:172).

The Middle Archaic (1500 BC–AD 700) is characterized by increased visibility and settlement differentiation. The occupation of large, semisedentary villages and elaborations in material culture, house construction, obsidian production, and ceremonial activity all flourished during this period (McGuire 2007:173). Sites in Secret Valley (LAS-7, the Karlo Site; LAS-206; and LAS-1705/H) contained house structures, midden deposits, hearths, ovens, and burials, as well as the richest and most diverse assemblage of artifacts and subsistence remains identified in the region (McGuire 2007:172).

The transition from the Middle to the Late Archaic Period (AD 700–1400) produced major changes in assemblage structure, subsistence, and settlement organization in northeast California. Climatic instability, in particular, the Medieval Climatic Anomaly (MCA) (a warm, dry interval from cal AD 900 to 1400), had major effects on the prehistoric populations, the effects of which are not fully understood (McGuire 2007:173). Structures prior to around cal AD 1000 appear frequently in small clusters (rather than isolated features) and are more formal than structures that appear after cal AD 1000; these features appear as more ephemeral domestic features, rock rings, or living surfaces (McGuire 2002, 2007:174). Resource intensification grew through food processing complexes, intensive exploitation of freshwater mussels, and the increased use of seeds and manzanita berries.

The Terminal Prehistoric Period (AD 1400–Contact Period) is marked by wholesale shifts in populations, centering on the arrival of desert-oriented Numic groups, such as the Northern Paiute, from southeastern California (McGuire 2007:174). Characteristic assemblages from the Terminal

Prehistoric Period would include the Desert side-notched and cottonwood projectile points (McGuire 2007:174). Small, independent household sites, likely designed for short-term occupations, for the most part, replaced large, seasonal or semipermanent settlements (Delacorte 1997:154).

Northern California Bight

Fillmore Hatchery

The Northern California Bight, which includes the coastline from Vandenberg Air Force Base to the vicinity of Palos Verdes, the Santa Ynez range and Santa Ynez Valley, the Santa Monica Mountains, and the Los Angeles basin, holds some of the earliest evidence of human occupation in California, including the Arlington Springs Woman from Santa Rosa Island (SRI-173), one of the earliest finds of human remains in North America (11,000 cal BC)(Johnson et al. 2002; Glassow et al. 2007:191).

The population of the Northern California Bight, as well as the entire coast of southern California, began expanding between 7000 and 6500 cal BC. This period is called the Millingstone Horizon due to the abundance of metates and manos found at sites dated to this period (Wallace 1954). This horizon, the earliest widespread occupation that archaeological research has revealed so far, is a local manifestation of coastal and near-coastal occupation throughout central and southern California (Glassow et al. 2007:196).

Metates and manos continued to figure prominently between 4500 and 2000 BC, but both types changed form: metates became thicker and heavier, and manos were formed into various shapes (Gamble and King 1997:63–64). Around 4000 cal BC, mortars and pestles came into use; they may have been used to pound acorns and large seeds into flour, thus signaling the advent of acorns as an important food product (e.g., Gamble and King 1997:67). More complicated settlement systems (varying sizes based on mobility), increased use of watercraft, expansion of fishing practices to include offshore species, and an increasing social stratification all appear to be developments of this period (Glassow et al. 2007:199–200).

The Middle to Late Holocene (2000 BC–AD 1) is characterized by new technologies and adaptations that led to increased sedentism, socioeconomic interaction, and, consequently, competition and violence among tribes. The adaptation of mortars and pestles (from the previous period) enabled the peoples of the Middle-Late Holocene to increase their diet. Coastal and island populations added pulpy plant foods, such as acorns and roots, to their repertoire of fish and sea mammals (Glassow 1996, 1997).

Resource diversification throughout the region, including intensified fishing and coastal sedentism, are associated with changes in social organization and ideology during the Middle-Late Holocene transition (Glassow et al. 2007:202). These cultural changes correspond with slightly increased population densities (Erlandson and Rick 2002:180); however, substantial population growth occurred most likely after cal AD 500 (Glassow 1999).

Sites from AD 1–1000 demonstrate increasing sedentism in the presence of well-developed, larger cemeteries. SBA-81, SBA-71, and SRI-6, all dating from between cal AD 1 and cal AD 700 (King 1990:34–35), yielded more than 650 burials collectively. The plank canoe, or tomol, began to be manufactured around cal AD 500 (King 1990:85), and quickly became an invaluable tool in the expansion of fishing, commerce, and transportation. Also around cal AD 500, the bow and arrow began to replace the atlatl and dart as the preferred hunting instrument (Glassow et al.

2007:204). This period also saw an increased production in *Olivella* saucer beads, particularly on island sites (King 1990:99, 228–229).

The major aspects of the ethnographic tribes of the Northern Bight, the Chumash (to the west) and the Tongva (to the east), were established by cal AD 1300 (Glassow et al. 2007:205).

Northwest California

Coyote Valley Fish Facility, Mad River Hatchery, and Trinity River Hatchery

Evidence of prehistoric peoples in northwest California begins during the Pleistocene/Holocene transition (11,500–8000 cal BC) with fluted point assemblages from the Clear Lake basin (Hildebrandt 2007:83). Aside from these fluted (Clovis-like) projectile points and chipped stone crescents found at the Borax Lake site near Clear Lake (LAK-36), well-defined Post Pattern assemblages have not been found elsewhere in northwest California. Isolated artifacts possibly dating to this early period lack diagnostic items and context; because of this, very little is known about the adaptive system they represent (Hildebrandt 2007:87).

The Borax Lake Pattern, the Early Berkeley Pattern, and coastal manifestations all figure prominently during the Early Holocene (8000–5000 cal BC). The Borax Lake Pattern is characterized by large, wide-stemmed projectile points with indented bases, serrated bifaces, ovoid flake tools, hand stones, milling slabs, and edge-flaked spalls in northern areas (Trinity and Humboldt Counties); and by flaked stone only in southern areas (Mendocino and upper Sonoma Counties) (Hildebrandt 2007:89–90). The Early Berkeley Pattern provides the first evidence of more stable, long-term settlements (Fredrickson 1974a, 1984; White et al. 2002). The initial Mostin Phase (ca. 6500–4300 cal BC) is defined by Houx contracting-stemmed and square-stemmed points, formalized burial patterns, pestles, and acorn macrofossils.

The Mendocino Pattern (3000 cal BC–cal AD 500) is the most prominent cultural pattern to develop in the Middle Holocene (5000–2000 cal BC) in northwest California. It is characterized by side-notched, corner-notched, and concave-base dart points, hand stones and milling slabs, various types of flake tools, cobble tools, and some cobble mortars and pestles. The majority of Mendocino Pattern sites throughout northwest California appear to be seasonal, temporary hunting camps or short-term forager residential bases occupied by people with a largely terrestrial subsistence orientation (Hildebrandt 2007:91).

The Berkeley Pattern, recognized as far back as the Early Holocene, is the predominant cultural pattern moving into the Late Holocene (post 200 cal BC). Toward the end of the Late Holocene, the Gunther Pattern and the Augustine Pattern (both post cal AD 500) figure prominently in northwest California.

After a hiatus in the archaeological record, the Berkeley Pattern re-emerges around 1200 cal BC and continues until about cal AD 800, in a series of phases (Creager, 1200–600 cal BC; Houx, 600 cal BC–cal AD 100; and Redbud, cal AD 100–800) (White et al. 2002). Artifact assemblages include leaf-shaped and stemmed projectile points, bone tools, fishing-related implements, baked clay objects, basketry, and mortars and pestles; and Berkeley Pattern sites contained black midden deposits and well-defined house floors. The primary subsistence was fishery, which not only allowed local populations to remain settled during multiple runs of specific fish species, but also contributed to the subsistence system of surrounding groups, including the upland people associated with the Mendocino Pattern (White et al. 2002; Hildebrandt 2007:92).

The Gunther Pattern is most prominent along the northern coast, and an emphasis on tools related to fishing is depicted in the artifact assemblage of this pattern, which included Gunther barbed projectile points, ground and polished stone artifacts, pestles, and notched net sinkers. Gunther Pattern sites suggest a more sedentary lifestyle than the Mendocino Pattern of the Middle Holocene, with well-defined houses, cemeteries, artifact caches, and midden/refuse areas (Hildebrandt 2007:93–94).

The Augustine Pattern is most prominent in the southern portion of northwest California (Sonoma and Mendocino Counties). Characteristic features of this pattern included rattlesnake corner-notched projectile points, a large-scale ceremonial complex including *Olivella* and clamshell disk beads, various *Haliotis* ornaments, bird bone whistles and tubes, and flanged steatite pipes (Hildebrandt 2007:94). Pre-interment burning with tightly flexed burials was relatively common, and cremation of high-status individuals was observed also (Bennyhoff 1994b).

San Francisco Bay Area

Silverado Fisheries Base, Warm Springs Hatchery

The Bay Area was a region of intense human occupation long before the European explorers settled in the region in the 18th century. In the early 20th century, the prehistory of the region was virtually unknown, aside from a small amount of ethnographic information (Kroeber 1925) and the discovery of a few prehistoric sites at the southern end of the San Francisco Bay (Nelson 1909).

The Early Holocene (Lower Archaic) (cal 8000–3500 cal BC) is characterized by a mobile forager pattern throughout the Bay Area. The earliest radiocarbon dates in the North Bay come from the Duncan's Landing site (SON-348/H), a rock shelter that has produced a basal date of ca. 7000 cal BC (Kennedy et al. 2005). Farther inland, the Spring Lake site (SON-20), in a small valley east of Santa Rosa, yielded stone milling slabs; large, wide-stemmed projectile points; and other flaked tools, many of which were made from Borax Lake obsidian in Lake County (Milliken et al. 2007:114).

Several technological and social developments occurred during the Early Period (Middle Archaic) (3500–500 cal BC). New ground stone technology and the first cut shell beads in mortuaries signal sedentism, regional symbolic integration, and increased regional trade in the Bay Area. In the North Bay, sedentary collectors who lived in lowland areas and mobile foragers, usually found in upland areas, lived side by side. Around 1500 BC, the Lower Berkeley Pattern, which brought cobble mortars and flexed burials in residential midden sites, spread into the Napa Valley (Milliken et al. 2007:115).

During the Lower Middle Period (Initial Upper Archaic) (500 cal BC–cal AD 430), bead horizon M1 of the Middle Period brought more *Olivella* saucer beads into the Bay Area, as well as new circular *Haliotis* ornaments. New bone tools, including barbless fish spears, elk femur spatula, tubes, and whistles, appeared for the first time during this period; and basketry awls (split cannon bones) with shouldered tips appeared in the central and North Bay (Bennyhoff 1986:70; Bieling 1998:218). The first rich black midden sites were noted in Napa Valley Early Period/Middle Period Transition (EMT) sites (Bennyhoff 1994b:52), new sites were occupied at Bodega Bay (Kennedy et al. 2005), and cobble mortars and Excelsior leaf-shaped projectile points appeared on the Santa Rosa Plain (Milliken et al. 2007:115).

During the Upper Middle Period (Late Upper Archaic) (cal AD 430–1050), the *Olivella* saucer bead trade network of the Lower Middle Period collapsed. More than half of the known M1 sites were

abandoned. In the remaining sites, the number of sea otter bones greatly increased (Bennyhoff 1994a, 1994d). These changes co-occurred with the inception of a series of *Olivella* saddle bead horizons (M2a and 2b, M3, and M4) that marked central California bead trade until cal AD 1000 (Groza 2002).

Fredrickson (1973) coined the term “Emergent” to describe the Initial Late Period (cal AD 1050–1550) in recognition of the appearance of a new level of sedentism, status ascription, and ceremonial integration in lowland central California. During this period, burial objects became much more elaborate, and initial markers of the Augustine Pattern appeared in the form of multiperforated and bar-scored *Haliotis* ornaments and new *Olivella* bead types in sites such as SCL-690 (see Hylkema 2006). Classic Augustine Pattern markers, which appeared in bead horizon L1 (after cal AD 1250), include the arrow, flanged pipe, *Olivella* callus cup bead, and the banjo effigy ornament (Bennyhoff 1994c). The Stockton serrated series, the first arrow-sized projectile point in the Bay Area, also appeared after AD 1250 (Bennyhoff 1994b:54; Hylkema 2002; Justice 2002:352).

Evidence for increased social stratification throughout the Bay Area after AD 1250 can be found in mortuary evidence. Although the quantity of shell beads contained in burials decreased, the quality of burial items increased in high-status burials and cremations (Fredrickson 1994a:62). This development may have reflected a new regional ceremonial system that was the precursor of the ethnographic Kuksu cult, a ceremonial system that unified the many language groups around the Bay Area during bead horizon L1 (Fredrickson 1974b:66 and Bennyhoff 1994b:70, 72 in Milliken et al. 2007:117).

Changes in artifact types and mortuary objects characterized cal AD 1500–1650 (also known as the Terminal Late Period). The signature *Olivella* sequin and cup beads of the central California L1 bead horizon abruptly disappeared, and clamshell disk beads, markers of the L2 bead horizon, spread across the North Bay, with clam disk production facilities identified at NAP-539 (Hartzell 1991), among others. Toggle harpoons, hopper mortars, plain corner-notched arrow-sized projectile points, clamshell disk beads, magnesite tube beads, and secondary cremation all appeared in the North Bay first during this period (Milliken et al. 2007:117).

An upward cycle of regional integration was likely commencing around the time of Spanish settlement in the Bay Area. Such regional integration was a continuing characteristic of the Augustine Pattern, most likely brought to the Bay Area by Patwin speakers from Oregon, who introduced new tools (such as the bow) and traits (such as pre-interment gravel pit burning) into central California. Perhaps the Augustine Pattern, with its inferred shared regional religious and ceremonial organization, was developed as a means of overcoming insularity, not in the core area of one language group, but in an area where many neighboring language groups were in contact (Milliken et al. 2007:118).

Sierra Nevada

Black Rock Rearing Ponds, Fish Springs Hatchery, Hot Creek Hatchery, and Mount Whitney Hatchery

The archaeological record of the Sierra Nevada documents use for thousands of years and has connections to the cultural history of both the east and the west. In general, the emerging picture is one of initial use or occupation in the Tahoe-Truckee region and lower western foothill areas by small, relatively mobile groups by at least 7500 cal BC (Hull 2007:182, 189). More significant

occupation likely emerged around 3000 cal BC, with evidence for both a hunting-based subsistence (in the higher elevations) and a more diverse subsistence base (in lower elevations). Between ca. cal AD 500 and 1250, populations declined, possibly due to prolonged droughts, volcanic activity in the Inyo-Mono region, and other environmental changes. Post cal AD 1250, the region experienced population growth and focused on the processing of vegetal foods for sustenance (Hull 2007:189).

Given its geographic position, the culture and history of the native people of the region are connected to those of both California and the Great Basin. The region was home to more than 10 ethnographic tribes, from the Maidu and Konkow in the north to the Tubatulabal and the Foothill Yokuts in the south. Despite this diversity, the various groups throughout the region shared some general similarities in material culture and cultural practices, based largely on geography. All groups on the western slope, for example, spent the winter in larger villages at lower elevations at or below the snowline, and during the summer and fall, groups moved to higher elevations, following the seasonal migration of greens, bulbs, fruits, and nuts (Hull 2007:177–181). Sierra groups hunted deer, processed acorns, and traded with neighboring groups to the east and west for resources not locally available. One of the most important traded resources was obsidian, because local granite was unsuitable for flaked stone tool manufacture. Granaries were built for storage, and different groups had different methods of construction (Hull 2007:181).

Sierra Nevada archaeology benefits from the fact that much of this area is federal land that continues to be the focus of ongoing archaeological survey and is less developed than many other areas of the state. Additionally, the ability to apply obsidian hydration dating to many artifacts from the Sierra Nevada assemblages allows further research into unanswered questions, such as the timing of the introduction of bedrock mortars and the bow and arrow, the decline in trans-Sierra exchange (Bennyhoff and Hughes 1987), and changes in subsistence intensification and social stratification (Hull 2007:190).

Ethnography

Achumawi, Atsuge Branch

Crystal Lake Hatchery

The Achumawi, or Pit River Indians, lived in a region of great diversity in terms of climate, elevation, and vegetation. From the high, over 14,000 feet above sea level (ASL), Achumawi territory descended to sections of Pit River canyon that lie 2,000 feet ASL. Although each type of vegetation provided unique products to the Achumawi, the abundant streams, lakes, meadows, and swamps were especially important to the Achumawi, as they provided such a large proportion of Achumawi food and shelter (Olmsted and Stewart 1978:225). However, grasslands were also important as the source of insects, vegetable fibers, and vegetable foods, including *epos*, a wild member of the parsley family that provided bushels of carrot-like roots dug from Pit River meadows that were dried and stored for winter (Olmsted and Stewart 1978:227). The Achumawi hunted badgers; bears; beavers; coyotes; deer/antelope; and, in the higher elevations, mountain sheep. Animals were hunted for their ability to produce food, feathers, clothing, and weapons, and as good luck (beavers were considered good luck in gambling) (Olmsted and Stewart 1978:228).

Achumawi sociopolitical organization was organized into tribelets, groups defined by Kroeber (1932) as being of “small size, definitely owning a restricted territory.” Each Achumawi tribelet was

autonomous and spoke a language understood by other tribelets, but most likely not by neighboring tribes.

Achumawi religion was closely connected with folk medicine; both involved the concept of the *tinihowi* (“guardian spirit” or “medicine”), the acquisition of supernatural power. The *tinihowi* had the power to make good hunters, invincible warriors, and powerful shamans (“doctors”), the one functionary of Achumawi religion and medicine (Olmsted and Stewart 1978:234).

The Pit River Indians, although they have suffered a large reduction in population from aboriginal times, retain enough people in their ancient homeland to constitute an active independent force in Native American affairs notwithstanding the fact that in local situations, former subdivisions and regional competition appears to influence behavior (Olmsted and Stewart 1978:235).

Eastern (Sierra) Miwok

Mokelumne River Hatchery (Northern Sierra Miwok) and Moccasin Creek Hatchery (Central Sierra Miwok)

The Eastern Miwok are composed of the Bay, Plains, and Sierra Miwok. The Bay Miwok occupied the eastern portions of what is now Contra Costa County, from Mount Diablo to the Delta. The Plains Miwok inhabited the lower reaches of the Mokelumne and Cosumnes Rivers, and the banks of the Sacramento River from Rio Vista to Freeport. The Sierra Miwok are further subdivided into the Northern, Central, and Southern Sierra Miwok. The Mokelumne River Hatchery lies in the specific territory of the Northern Sierra Miwok, who occupied the foothills and mountains of the Mokelumne and Calaveras River drainages, and the Moccasin Creek Hatchery lies in the specific territory of the Central Sierra Miwok, who occupied the foothill and mountain portions of the Stanislaus and Tuolumne drainages. The Southern Sierra Miwok occupied the upper drainages of the Merced and Chowchilla Rivers (Levy 1978:398).

Five languages have been assigned to the three distinct Miwok groups (Bay, Plains, and Sierra Miwok), all of whom belong to the Utian language family. Classification and chronology of the Miwok languages suggest that the Miwok ancestors have lived in the Delta region of central California for long periods of time, with the population of the Sierra Nevada and foothills occurring much later (Levy 1978:398).

The primary political unit was the tribelet. Composed of several semi-sedentary settlements and numerous seasonally occupied camps, the tribelet represented an independent, sovereign nation that defined and defended a territory. The tribelet chief served as the voice of legal and political authority in the tribelet; this was usually a hereditary position, which could be inherited by the chief's daughter in the absence of sons (Levy 1978:410).

The basic subsistence strategy of the Eastern Miwok was mobile hunting and gathering. This was motivated by seasonal variations in resource availability, which forced the Miwok to exploit resources outside the immediate vicinity of their permanent settlements. Numerous varieties of acorns were collected and harvested widely, and buckeye, sugar pine, and Grey pine were collected and stored to augment the acorn harvest. Seeds, roots, and various green plants served to round out the bulk of the vegetal resources exploited by the Miwok (Levy 1978:402).

The Miwok hunted, trapped, and fished for numerous varieties and combinations of resources throughout the mountain regions, foothills, and plains. The Sierra groups hunted species of bear,

smaller mammals, rodents, birds, and waterfowl (Levy 1978:403–404). The bow and arrow, as well as traps and snares, all were used in hunting.

Basketry items included seed beaters, cradles, sifters, and rackets used in ball games. Baskets were used for storage, winnowing, parching, and carrying burdens. Other textiles included mats and cordage. Tule balsas were constructed for navigation on rivers and in the Delta (Barrett and Gifford 1933; Levy 1978:405–406).

The Eastern Miwok constructed four main types of structures. For houses, conical structures of bark were used in the mountains. Those built from tule matting were more common in the lower elevations of the Central Sierra. Semi-subterranean, earth-covered dwellings served as winter homes. Two types of assembly houses and a sweathouse were found in Miwok villages also. Also within the Miwok settlement were acorn granaries, menstrual huts, and conical grinding huts over bedrock mortars (Levy 1978:408–409).

With the arrival of trappers, gold miners, and other settlers to California, the Miwok suffered exposure to introduced diseases. While some hostilities occurred between the Sierra Miwok and miners, other Miwok groups became involved in agricultural operations on the newly developing large land grants. After California was annexed by the United States, some Miwok were displaced to Central Valley locations, yet many remained on the rancherias established in the Sierra Nevada foothills. During the late 19th and early 20th centuries, the Miwok living on the foothill rancherias adapted to new lifestyles, such as seasonal wage labor on ranches and farms, to augment subsistence through hunting and gathering (Levy 1978:400–401). Since the early 20th century, many persons of Miwok descent survive and maintain strong communities and action-oriented organizations.

Konkow

Feather River Hatchery and Feather River Hatchery Thermalito Annex

The Feather River Hatchery and Feather River Hatchery Thermalito Annex areas once were inhabited by the Konkow, also known as northwestern Maidu, a linguistic division of Maidu that includes northeastern Maidu and Nisenan (ShIPLEY 1978:370). The Maidu inhabited the area of California from Lassen Peak to the Cosumnes River and from the Sacramento River to Honey Lake. The division of these three groups is based on linguistic and environmental differences. The language of each group has been classified as a separate language within the Maiduan family, Penutian stock. Within each language, several dialects existed (ShIPLEY 1978:83).

The Konkow inhabited the Feather River area west of Richbar and extending to the southwest almost to the Sutter Buttes, and the Sacramento River area from about Butte City on the south to Vina on the north. The Konkow were bordered on the south and east by the Nisenan, on the west by the Nomlaki, and on the north by the Yana and Northeastern Maidu (Riddell 1978:370, 372).

The basic subsistence strategy of the Konkow was seasonally mobile hunting and gathering. Acorns, the primary staple, were gathered in the valley along with seeds, buckeye, salmon, insects, and a wide variety of other plants and animals. During the warmer months, people moved to mountainous areas to hunt and collect food resources particular to higher elevations, such as pine nuts (Riddell 1978:373).

A settlement pattern of tribelets served as the only political organization of the Maidu. Each tribelet was composed of several villages (Kroeber 1925:398). When needed for group decisions or group activities, the headman of one of the villages in a tribelet was selected to be the leader of the villages composing the tribelet. Headmen acted as advisers and were chosen through the auspices of a shaman for qualities such as wealth, maturity, ability, and generosity (Dixon 1905:223–224).

Although the first contacts with Euro-Americans occurred in 1808, it was not until between 1828 and 1836 that exposure to whites became intensive. This increased contact was a result of fur trapping in the region by the Hudson's Bay Company. In 1833, an epidemic, possibly malaria, killed up to 75% of the Konkow population. The establishment of Sutter's Fort in Nisenan territory in 1839 became the focal point of settlers' and miners' incursions into Konkow lands (especially after the 1848 gold discovery). The population reduction from the epidemic left the Konkow unable to resist the overwhelming flood of miners and settlers. Many of the few survivors became wage laborers on mines and ranches, and their language and culture greatly diminished. Today, there is a renewed interest in Maidu and Konkow traditional values and cultural expression; one example of this manifestation is the annual Maidu Bear Dance, a Maidu-sponsored ceremony in Janesville (Riddell 1978:385, 386).

Nisenan

American River Hatchery, Nimbus Hatchery

Nisenan territory comprised the drainages of the Yuba, Bear, and American Rivers and the lower drainages of the Feather River (Wilson and Towne 1978:387). Along with Maidu and Konkow, the languages of the Nisenan people's northern neighbors, the Nisenan language forms the Maiduan language family of the Penutian linguistic stock (Shipley 1978:83).

Nisenan settlement locations depended primarily on elevation, exposure, and proximity to water and other resources. Permanent villages usually were located on low rises along major watercourses. Village sizes ranged from three houses up to 40 or 50. Houses were domed structures covered with earth and tule or grass and measured 10–15 feet in diameter. Brush shelters were used in the summer and at temporary camps during food-gathering rounds (Kroeber 1925:407–408). Larger villages often had semisubterranean dance houses, which were covered in earth and tule or brush and had a central smoke hole at the top and an entrance that faced east. Other common village structures were the sweathouse, used for curing and purification, and the granary, used for storing acorns (Wilson and Towne 1978:388–389).

The smallest Nisenan social and political unit was the family. Each extended family was represented by a family leader, who was called to council by a headman. The headman served as an adviser to a village. The headman of the dominant village in a cluster of villages (tribelet) had the authority to call upon the aid of surrounding villages in social and political situations. The duties of the headman were to advise his people, call and direct special festivities, arbitrate disputes, and act as an official host. The position of headman usually was hereditary, but the position could be chosen. A woman could serve if a suitable male relative were not available (Wilson and Towne 1978:393; Beals 1933:360).

Religion played an important role in Nisenan life, and the Nisenan had two kinds of shamans: curing shamans and religious shamans. Curing shamans had limited contact with the spirit world and

diagnosed and healed illnesses. Religious shamans gained control over the spirits through dreams and esoteric experiences (Wilson and Towne 1978:393–395).

Early Nisenan contact with Europeans appears to have been limited to the southern reaches of their territory, beginning in the early 1800s. Unlike the Valley Nisenan, the groups in the foothills remained relatively unaffected by the European presence until the discovery of gold at Coloma in 1848. In the two or three years following the gold discovery, Nisenan territory was overrun by settlers from all over the world. Gold seekers and the settlements that sprang up to support them were nearly fatal to the native inhabitants. Survivors worked as wage laborers and domestic help and lived on the edges of foothill towns. Despite severe depredations, descendants of the Nisenan still live in the northern Central Valley and maintain their cultural identity (Wilson and Towne 1978:396–397).

Northern Valley Yokuts

Merced River Hatchery and San Joaquin Hatchery

The Merced River Hatchery and San Joaquin Hatchery areas are located within the boundaries of the Northern Valley Yokuts, the historical occupants of the central and northern San Joaquin Valley. “Yokuts” is a term applied to a large and diverse number of people inhabiting the San Joaquin Valley and Sierra Nevada foothills of central California. The Northern Valley Yokuts’ territory extended from near where the San Joaquin River makes a big bend northward to a line midway between the Calaveras and Mokelumne Rivers (Wallace 1978:462).

For the Northern Valley Yokuts, the San Joaquin River and its main tributaries served as a lifeline to the Valley; consequently, their villages tended to congregate around these main water sources. They gained much of their livelihood through fishing (in particular, salmon fishing) and varied their diet with waterfowl and the harvesting of wild plant food, such as acorns, tule root, and seeds (Wallace 1978:464).

Most settlements, or at least the principal ones, were built atop low mounds, on or near the banks of large watercourses, for protection against spring flooding (Schenck 1926:132; Schenck and Dawson 1929:308; Cook 1960:242, 259, 285). Given that many sites were occupied for generations, the Northern Valley Yokuts chose to adapt to their riverine environment, rather than abandon their sedentary lifeway. However, flooding posed the primary threat to a fully stationary existence; and the local rivers, swollen from melting Sierra Nevada snows and heavy rains, periodically overflowed their banks and drove the villagers to even higher ground (Wallace 1978:466).

A headman guided each tribe, and village populations averaged around 300 people. Family houses were round or oval, with a conically shaped pole frame sunk into the ground and covered with tule mats. Each village also had a community lodge for dances and community functions, as well as a sweathouse (Wallace 1978:465).

The Northern Valley Yokuts manufactured a range of intricate and carefully woven baskets for a variety of purposes, including storing, cooking, eating, winnowing, hopper mortars, and transporting food materials. Local craftsmen also fashioned a wide range of essential tools and implements from stone (Wallace 1978:465).

The Northern Valley Yokuts suffered great population decline and cultural breakdown when they were drawn into the mission system. Compelled to work at unfamiliar tasks and subjected to the

severe discipline of mission life, many of the neophytes deserted the missions and returned to their traditional homes, where they were usually brought back, by force when necessary (Wallace 1978:468). Following the mission period, Northern Valley Yokuts continued to clash with the white settlers, and as a result, many villages were burned, and the population declined. This decline continued through the early American period, as the rich soils of the Delta and valley attracted many former miners and other settlers to farming. As they filled up the district, the remaining Yokuts were driven off their hunting and food-gathering lands (Wallace 1978:468–469).

The demoralizing conditions suffered by the Yokuts gave way in 1870 to widespread but short-lived participation in the Ghost Dance. The Ghost Dance promised the return of dead relatives, freedom from sickness and death, peace and prosperity, and the disappearance of whites. By 1875, interest in the Ghost Dance had died, after the new world envisioned by the cult failed to materialize. Today, the descendants of the Yokuts live on the Tule River Indian Reservation near Porterville, established in 1873, and the Santa Rosa Rancheria near Lemoore, established in 1921 (World Culture Encyclopedia 2008).

Owens Valley Paiute

Black Rock Rearing Ponds, Fish Springs Hatchery, Hot Creek Hatchery, and Mount Whitney Hatchery

Owens Valley and its surrounding uplands were occupied during the Contact Period by the Owens Valley Paiute, who spoke dialects of the Mono language, which along with Northern Paiute, makes up the twofold division of the Western Numic segment of the Numic branch of Uto-Aztecan (Liljeblad and Fowler 1986:412). The Owens Valley Paiute dwelled in the narrow valley that encompasses the headwaters and terminus of the Owens River and parallels the eastern slope of the southern Sierra Nevada (Liljeblad and Fowler 1986:412–413, Figure 1).

Estimates of the aboriginal population vary between 1,000 and 2,000, making Owens Valley the most densely populated area in the Great Basin. At times, the population of Owens Valley numbered more than two people per square mile (Liljeblad and Fowler 1986:414–415).

The inhabitants of Owens Valley occupied semi-permanent base camps, which were small, transitory, and unstructured communities, temporarily occupied by the same families from year to year (Liljeblad and Fowler 1986:414). The basic sociopolitical unit typically consisted of a large main village and several surrounding allied settlements. Each of these villages was a territorial unit with a substantial population presided over by a designated headman (Liljeblad and Fowler 1986:427). Rather than lineages with the nuclear family as the dominant unit of production and reproduction, broad kindred relationships seem to have been the basic kinship pattern among the Owens Valley Paiute. Kinship groups were not territorial in and of themselves; however, most settlements excluded all blood kin to the level of third cousin from marrying (Liljeblad and Fowler 1986:425).

Owens Valley Paiute ceremonies were predominantly outdoor social events, in contrast to the California pattern, in which most ceremonies were held in large structures. An important ceremony was the annual fall mourning, commonly referred to as the “cry,” which was held in honor of those who had died during the previous year. During this time, a widow or widower was released from a year-long mourning period and allowed to re-enter social relationships, including marriage (Liljeblad and Fowler 1986:428).

Several types of habitation structures were ethnographically documented in the region, with three main subtypes occurring within Owens Valley. These include a large, round, semi-subterranean, earth-covered assembly house; a smaller domestic version; and a simple brush dwelling built at ground level with a superstructure of bent willow poles for summer use. In addition, wooden lean-tos were used at higher elevations; ramadas and brush enclosures were used during summer months on the valley floor (Liljeblad and Fowler 1986:423–425).

Food resources for the Owens Valley Paiute included migratory and resident waterfowl, deer, mountain sheep, and pronghorn; black-tailed jackrabbit and cottontail, sucker fish species, Owens sucker, and freshwater mussels. Vegetable resources included chia, Indian rice grass, and numerous grass seeds and tubers from the valley. Nut resources included pinyon pine nuts from the Inyo-White Mountains and acorns from the Sierra Nevada (Liljeblad and Fowler 1986:416–417).

The Owens Valley Paiute had access through trade to products from the Sierra Nevada and the Great Basin biotic zones, as well as those from the Mojave Desert to the immediate south. Trade and marriage ties closely linked them with surrounding groups, such as the Yokuts, Miwok, Tubatulabal, and Mono to the west and other outlying Paiute-Shoshonean groups to the east. These interactions allowed the accumulation of considerable wealth, contributing to further cultural elaboration. The Owens Valley groups exhibited a highly sedentary orientation to the environment. This orientation distinguished them from all other Great Basin ethnic groups, which followed a predominately mobile pattern (Binford 1980).

Patwin

Silverado Fisheries Base

Patwin territory included the southern portion of the Sacramento Valley to the west of the Sacramento River, from the town of Princeton south to San Pablo Bay and Suisun Bay. From north to south it extended 90 miles, and from east to west it extended 40 miles, covering the banks of the Sacramento River; the flat, open grassland plains with occasional oak groves; and the lower hills of the eastern Coast Range mountain slope, rising to an elevation of 1,400 feet (Johnson 1978:350–351).

Patwin is the native word for “people” and was used by several tribelets in reference to themselves. It does not denote a political unity. The term was suggested initially by Powers (1877:218 in Johnson 1978:350) as a convenient name for those groups that displayed a close linguistic and cultural resemblance but were distinguishable from those Wintuans inhabiting the northern half of the western valley. The Patwin are classified as Southern Wintuan.

The maximum political unit for the Patwin was the tribelet, which consisted of one primary and several satellite villages. Each tribelet had a definite sense of territoriality and autonomy, and each tribelet sustained brief cultural differences from the others. Within the tribelet were several political and social distinctions, including a chief who oversaw village activities; this position was often determined by inheritance from father to son (Johnson 1978:354).

Patwin villages contained four main types of permanent structures: the dwelling or family house; the ceremonial dance house, which was usually built at a short distance to the north or south end of a village; the sudatory (sweathouse), which was positioned at either the east or the west of the dance house; and the menstrual hut, which was placed on the edge of the village, farthest from the

dance house. All of these were earth-covered, semi-subterranean structures with either an elliptical or circular shape (Johnson 1978:357–358).

The principal subsistence activities of the Patwin were hunting, fishing, and the gathering of wild plants. As it was among many other California cultures, the acorn was a primary staple. In addition to acorns, buckeye, pine nuts, juniper berries, Manzanita berries, blackberries, wild grapes, and other plants were collected at various times of the year. Each village had its own location for these food sources, and the village chief oversaw the procurement of food for the village (Johnson 1978:355).

Population estimates for Patwin groups, from pre-contact until 1833, are more than 15,000 (Kroeber 1932; Cook 1955). The Patwin were in contact with the Spanish missions by the late 18th century, and some of the earliest historic records of the Patwin are found among mission registers of baptisms, marriage, and deaths of Native American neophytes. Mission San Jose, established in 1797, along with Mission Dolores, actively proselytized Patwin from their southern villages, and Mission Sonoma, built in 1823, also baptized neophytes, until the secularization of all missions by the Mexican government in 1832–1836. Afterward, many tribal territories were divided into individual land grants (Johnson 1978:351).

The U.S. conquest of California (1846–1848) was followed by a massive influx of American settlers into Patwin territory, increasing pressure on the indigenous population. To facilitate the development of ranching, agriculture, mining, and large settlements, American policy toward the Patwin was generally one of removal to reservations. However, some Patwin were able to assimilate themselves, at least partially, into white culture by working as ranch laborers (Johnson 1978:351). Today, some Patwin descendants live on the Colusa, Cortina, and Rumsey Rancherias; although many of the people living on these rancherias are of general Wintun descent.

Pomo

Coyote Valley Fish Facility

The Northern Pomo, also known as the *bowalkeya*, “the ones from the west side,” is one of seven distinct Pomo speech forms first established by Barrett (1908). There was no native name for the speakers of Northern Pomo as a whole; group names were derived from their tribelet locations (McLendon and Oswalt 1978:283, 285).

The territory of the various Northern Pomo tribelets lay in central Mendocino County and extended inland nearly 50 miles to a region on the northwestern shore of Clear Lake shared with the Eastern Pomo. The majority of the tribelets lived in small valleys in the drainage of the upper Russian River and upper Outlet Creek, which flows north into the Eel River (McLendon and Oswalt 1978:283). Different tribes had different resources, and trade between Pomo villages was frequent.

The northern Pomo were a non-sedentary population living on the coast primarily during the summer months, and in the interior valleys during the winter months. The arrival of Euro-Americans to the area in the 1800s resulted in their decision to remain along the coast year-round (McLendon and Oswalt 1978:283).

In 1811, 95 Russian trappers, accompanied by 40 Aleut and Kodiak Indians, arrived from Alaska and established a fur trading colony at what is now Fort Ross. By that time, many Pomos had already been forced into Spanish missions, and over the next several decades. Pomos were subjected to

frequent raids by Mexicans; as well as epidemic diseases such as smallpox and cholera (Gualala Country Inn 2009).

As the Russians realized that having the local Indians on their side was to their advantage, they employed many of the Pomos, and there was often an intermingling of the two cultures, religions, and languages. Some of the Pomos also married Russians. The Russian trappers only stayed until 1842, and several Pomo went with them as they returned to Russia (Gualala Country Inn 2009).

During the 1840s and 1850s, large numbers of settlers and fortune seekers moved into Pomo territory. In 1857, the U.S. government set up a reservation called Fort Bragg for the Pomos. The Fort Bragg reservation was abandoned in 1867. At that time, the 2,000 or so Pomos living there were sent to other reservations in California. Some of the Pomos escaped and returned to their homeland, only to discover their lands occupied by settlers (Gualala Country Inn 2009).

Although most Pomo groups participated in the Kuksu religion, Pomo traditions and specializations were incorporated into the practice, such as basketry (for which the Pomo were renowned), bead-counting (according to Kroeber, they were the principal purveyors of the standard disk currency to north-central California), and elements of their own languages (Kroeber 1925:257, 271).

Shasta

Iron Gate Hatchery

The Shastan peoples—which include the four northern California groups Shasta, Konomihu, Okwanuchu, and New River Shasta—shared similar languages, which constitute the Shastan language group. They held territories in an area now shared by California and Oregon: the Shasta in northern California and southern Oregon; the Konomihu and New River Shasta to the southwest; and the Okwanuchu to the southeast of the California Shasta (Silver 1978:211). The majority of Shastan territory is mountainous and forested, with the exceptions of Shasta and Scott Valleys. In the valleys, villages usually were located at the edge of the valley near streams; and in the mountainous regions, villages often were situated near oaks in the high hills (Silver 1978:213).

The origin of the name Shasta seems most likely to have been the appellation of a person, a chief of some consequences, called Sasti. The Shastan peoples have been known under various appellations over time, and local tribes all appear to have referred to the Shasta by different names (see Kroeber 1925:285 and Silver 1978:222–223).

The Shasta traded with most of the groups surrounding them. Among other arrangements, from the Achumawi, they obtained obsidian; from the Rogue River Athapaskans, dentalia; and from the Karok, Hupa, and Yurok, acorns, baskets, dentalia, and shells (Silver 1978:213). Many Shasta villages consisted of only one family. However, each large village, and each of the Shasta divisions, had a headman who served as peacekeeper, adviser, and moderator. These men were considered equal, but in terms of serious conflict, the Oregon Shasta chief acted as chief mediator (Silver 1978:214).

Shasta families lived in different dwellings based on the seasons. In the winter, the principal dwelling was a rectangular dwelling house, and in the spring and summer, the principal dwelling was a brush shelter. During acorn season, single-family bark houses were used. People camped during hunts. Large villages had an assembly house located in the center of the village and a multi-family dwelling house, and the larger villages along the Klamath River and the lower Scott and Shasta Valleys had a sweathouse as well (Silver 1978:214–215).

The Shastan peoples enjoyed a wide variety of food resources from throughout their territory. For fauna, deer was a staple; bear, small mammals, and various fish and shellfish were consumed also. For flora, acorns were a staple, and a wide variety of nuts, seeds, and berries was consumed (Silver 1978:216).

Tubatulabal

Kern River Planting Base

The aboriginal group that inhabited the Kern River Planting Base area is known as the Tubatulabal. The Tubatulabal is considered a linguistically unique subgroup of the Uto-Aztecan language family and does not appear to be closely related to other nearby languages. The Uto-Aztecan language family extended throughout much of the Great Basin and southern deserts of California. The name Tubatulabal means “pine nut eaters”; this was how the group was identified by its neighbors (Smith 1978:437).

The Tubatulabal range is considered to have been extensive, ranging from Mount Whitney on the north to Walker Pass on the east, to the point where the Kern River enters the San Joaquin Valley on the southwest. The group primarily inhabited those valleys at the confluence of the Kern and the South Fork Kern Rivers (Smith 1978:437; Wallace 1970).

The Tubatulabal were organized into three bands, or tribelets, each with its own “chief”: the Pahkanapil, Palegewan, and Bankalachi. The Pahkanapil occupied the area around the banks of the south fork of the Kern River, and the Palegewan resided in the Kern River Valley (Smith 1978:439). The Bankalachi are not considered one of the primary Tubatulabal bands, but are more a transitional Tubatulabal-Yokut group about which little is known (Kroeber 1925:607). However, all of the bands spoke similar and mutually intelligible dialects, and visits and intermarriages were frequent (Smith 1978:439).

Semipermanent winter habitations, known as hamlets, were located near water, usually at lower elevations such as in valleys, where climatic conditions were mild and available plant resources could be exploited. The bands relied on gathering, fishing, and hunting for their food supply (Smith 1978:443). The primary food source for the Tubatulabal were the acorns in the Greenhorn Mountains (foothills west of Kernville) and pinyon nuts along the eastern slopes of the Sierra Nevada. The two nuts matured successively, allowing for exploitation of the pinyons in early fall and of the acorns in late fall (Smith 1978:443). Additionally, small seeds (e.g., chia and wild oats), shoots, leaves, and berries were gathered; and roots, tubers, and bulbs were collected; peeled and eaten raw; or sun-dried, pounded, mixed with water, and boiled into a mush (Smith 1978:443–444). The remainder of the Tubatulabal diet was supplied by large game (e.g., deer, bear, mountain lion, mountain sheep, and antelope), which were hunted by means of stalking, use of blinds, and chasing game toward concealed hunters. Small game were also hunted, trapped, and snared. Waterfowl, quail, and pigeons were hunted with the bow, using hunting blinds built near riparian and nesting areas (Smith 1978:444).

Vanyume

Mojave River Hatchery

The Vanyume were a sparse and poor population living along the Mojave River to the north of the territory aboriginally held by the Serrano. Their territory appears to have included the area just south of Victorville, extending east about 75 miles, and about 40 miles to the north (see Bean and Smith 1978:570, Figure 1). Politically, they seem to have differed from the Serrano proper, in their friendship with the Mojave and the Chemehuevi, traditional enemies of the Serrano. The name "Serrano" has been used, in a broader sense, for a group of languages in the Takic family, including Vanyume (Bean and Smith 1978:570). Dialectically, however, Vanyume appears to be more closely aligned with Kitanemuk than with Serrano, but all three idioms appear to be largely interintelligible (Kroeber 1925:614–615).

Kroeber noted that the Vanyume must have been poor in the extreme, due to the limited water supply and vegetation in the region, which is predominantly desert (Kroeber 1925:615):

At the lowest village, Garces found some bean and screw mesquite trees and grapevines; but the inhabitants had nothing but tule roots to eat. ... At one of the upper villages, there were small game and acorn porridge; and where the chief lived, welcome was extended by sprinkling acorn flour and small shells or beads.

Both Kroeber (1925:614) and Bean and Smith (1978:570) noted that this group was extinct prior to 1900.

Ventureno Chumash

Fillmore Hatchery

The Fillmore Hatchery area falls in the traditional ethnographic territory of the Ventureno Chumash, one of three linguistic-geographic entities composing the Eastern Coastal Chumash (the other two entities are the Barbareno and the Ynezeno) (Grant 1978:509). The Chumash were a series of hunter-gatherer communities linked by related languages, of which there were at least six. The language spoken by the Ventureno Chumash is believed to be a separate dialect, not intelligible to other Chumash groups (Greenwood 1978:520).

Ventureno Chumash country was mainly mountainous, with the exception of the Oxnard plain between Ventura and Point Mugu. The northern region includes the headwaters of the Ventura and Santa Clara Rivers and is extremely rugged, with several peaks rising to over 8,000 feet (Grant 1978:509).

The Ventureno were a coastal and inland dwelling people who lived along an exposed outer shore, but also inland in the hills and forested areas in order to take advantage of the abundance of game and fresh water resources. The habitat contained an abundance of wild plant foods, land and sea mammals, mollusks, fish, and birds, all of which were used from the earliest periods (Greenwood 1978:520; Greenwood 1972).

Most Chumash lived in permanent villages, composed of large round houses up to 50 feet in diameter, which may have housed as many as 70 people (Crespi 1927). Chumash villages along the channel usually were built on high ground (to protect against floodwaters). A typical village, in

addition to the round houses, consisted of a sweathouse; store houses; a ceremonial enclosure; a gaming area; and, outside the main living area, a cemetery (Grant 1978:510).

Prior to Spanish contact, the Chumash made no pottery; all cooking was done in heavy steatite ollas and on steatite comals (flat cooking stones) (Grant 1978:514). The Chumash designed the *tomol*, a planked canoe, which varied from about 12 feet to more than 30 feet in length and was remarkably light (Grant 1978:515). Additionally, the rock paintings of the Chumash Indians have been considered the most interesting and spectacular in the United States, and their basketry also has been highly regarded (Grant 1978:516–517). The idea that the painted sites represented shrines or sacred spots is suggested by their location, which is usually a remote area in the coastal range, high above population centers. The elaborate designs of many of the paintings have led many to suggest that they were painted by persons under the influence of toloache, a powerful hallucinogen (Grant 1965:63–64).

Wappo

Silverado Fisheries Base (see also under “Patwin”) and Warm Springs Hatchery

The Silverado Fisheries Base and Warm Springs Hatchery lie in the southern subdivision of the tribal territory of the Wappo Indians. The territory in which the Wappo dialects were spoken consisted of two divisions: a small division centered on the south edge of Clear Lake; and a larger area including the Western, Northern, Central, and Southern subdivisions, which extended from just above Napa and Sonoma in the south to Cloverdale and Middletown in the north (Sawyer 1978:257).

Wappo belongs to a small family of four languages, the other three of which are Yuki, Coast Yuki, and Huchnom. It appears to have stood as a separate language, while the other three were most likely mutually intelligible dialects (Elmendorf 1968 in Sawyer 1978:256). One possible reason for this distinction is that Wappo was considerably influenced by the languages with which it had contact, such as Lake and Coast Miwok; Southern, Eastern, and Southeastern Pomo; and various Wintun dialects. Additionally, Spanish greatly influenced Wappo, particularly in the terminology of western culture that made its way into the Wappo world (Sawyer 1978:256).

The sociopolitical unit of the Wappo was the village, which included at least one sweathouse. Wappo chiefs could be male or female and could be elected, appointed, or chosen by virtue of functioning in one or more of the roles for which a chief could be needed. The position could be held for life, and a successor could be any other chief in the village whose following was larger than that of others. The four primary roles in which the chief served were to maintain relations with other villages, maintain the daily functioning of the village, oversee tribal ceremonies, and receive and report on news and information (Sawyer 1978:259).

In their later history (post-Spanish, Mexican, and early American periods), the Wappo were considerably influenced by the languages and cultures surrounding them. They were probably always a minority, and, by large, they seemed to get along well with the people around them (Sawyer 1978:258).

Wintu

Hatchery Facilities: Darrah Springs Hatchery, Mount Shasta Hatchery, and Trinity River Hatchery

The Darrah Springs Hatchery, Mount Shasta Hatchery, and Trinity River Hatchery lie within the ethnographic territory of the Wintu. Accounts of Wintu culture come primarily from three references: DuBois (1935), Kroeber (1925), and La Pena (1978). The Wintu were intensive hunters and gatherers who inhabited the northern end of the Sacramento Valley, as well as the mountainous areas to the north and west.

Traditional Wintu territory covered parts of what are now Trinity, Shasta, Siskiyou, and Tehama Counties, extending northward toward the upper Trinity River and up the Sacramento River to the high divide between the Trinity and Scott Rivers, to Black Butte and Mount Shasta, passing a little north of Black Fox Mountain, to the south along Cottonwood Creek, and to the southwest, along the south fork of the Trinity River (La Pena 1978:324).

Wintu villages consisted of a scattering of semi-subterranean, conical, bark slab-covered houses, with each typically housing a family of three to seven people. Major villages along the rivers were inhabited during the winter, and temporary camps were established in the foothills during the warmer months' food gathering forays (DuBois 1935:28). Hunting and fishing tasks fell to the men, while women gathered plants and prepared foods. The Wintu made full use of the abundant natural resources of their territory, and children grew up learning the uses of these resources.

Several species of large and small mammals were hunted, including deer, bear, rabbits, and birds. Salmon and steelhead were caught during semiannual runs. Mussels from the river were gathered, and grasshoppers and other insects were used when available. Plant foods included several species of acorns, buckeye, hazelnuts, gray pine and sugar pine nuts, Manzanita berries, many other types of berries, and a wide variety of bulbs and seeds (DuBois 1935).

The great malaria epidemic of 1830–1833, introduced by Oregon trappers, decimated around 75% of the Wintu population. Early Euro-American ranching during the late 1840s severely disrupted critical foods that Wintu traditionally depended upon, and in the 1850s, soldiers and gold miners massacred hundreds of Wintu and otherwise displaced them or removed them from their homeland. Throughout the 1860s, the Wintu were forcibly removed to coastal reservations. The final dispersal of the last remnants of Wintu concentrations occurred primarily as the result of dams built on the McCloud and upper Sacramento Rivers, which inundated much of their formerly occupied land (LaPena 1978:324–325).

Wiyot

Hatchery: Mad River Hatchery

The Wiyot, along with the Yurok, constitute the Algonquian language as represented in California. At some point in the distant past, the ancient forms of Wiyot (and Yurok) speech were brought into northwestern California, though not necessarily at the same time. The common ancestral form from which Wiyot, Yurok, and Proto-Algonquians derived was never spoken in California, so the ancestral forms of these languages must have been separate when they were still somewhere to the east or north (Shipley 1978:82; see Kroeber 1925:113, Figure 9).

According to Kroeber, Wiyot territory fell into three natural divisions: the lower Mad River, Humboldt Bay, and the lower Eel River, each with their own distinct names (Kroeber 1925:112). Although this territory is predominated by water, the Wiyot did not depend on the ocean as much as would seem natural for either subsistence or travel; rather, they often lived near “still waters,” such as Humboldt Bay and the mouths of the Eel and Mad Rivers (Elsasser 1978:156).

Like other northwestern Californians, the Wiyot did not have formal tribal organization or clans. They did, however, carry out elaborate ceremonies, such as the “World Renewal” or “Big Time” dance, which involved recitations, displays, and dances with elaborate costumes (Elsasser 1978:159).

In addition to sea resources, such as mollusks and sea lions, the Wiyot also fished, processed acorns, and gathered local berries (especially huckleberries) for sustenance. A typical Wiyot settlement would include residential houses (usually occupied by two or more families) and a sweathouse (Elsasser 1978:158).

The Wiyot have suffered more than other native groups of northwestern California in terms of dispossession and displacement during the past century. Wiyot tribal land, a favorable coastal area, was immediately recognized as such by settlers, who chose to use the area for modern commerce. The Wiyot were displaced much later than other Native American tribes in California (starting in the 1850s), but just as harshly: Conflicts with settlers in the early 1860s decimated nearly the entire Wiyot population (Elsasser 1978:161–162).

History

The history of California’s fish hatcheries is described in Chapter 2 of this EIR/EIS, “Program Description.”

Environmental Consequences

Results and Identified Cultural Resources

ICF Jones & Stokes obtained information from the CHRIS record centers, including topographic maps with the plotted locations of previously recorded cultural resources within the project areas and a 0.25-mile search radius; the site records; and a list of previous studies conducted within 0.25 mile of the project areas.

Central California Information Center

Merced River Hatchery Area

No prehistoric or historic archaeological resources were identified within the Merced River Hatchery area. Within 0.25 mile of the area, two historic features have been recorded. P-24-435 (CA-MER-348H) is a dredge field associated with mining along the Merced River. P-24-488 is the Crocker-Huffman Main Canal. It has been determined to be eligible for the NRHP by a consensus of the Section 106 process; it is also listed in the CRHR.

No previous studies were identified within the Merced River Hatchery area; one study was conducted within 0.25 mile of the area.

Moccasin Creek Hatchery Area

No prehistoric or historic archaeological sites were identified within the Moccasin Creek Hatchery area. Three historic resources and two isolates were identified within a 0.25-mile search radius of the Moccasin Creek Hatchery area. P-55-2994 is the San Joaquin River Pipelines Nos. 1 and 2. They were recorded in 2007. According to the site record, they appear to be eligible for the NRHP and CRHR based on their period of significance and features. P-55-6976 consists of a square pit, an iron pipe, a retaining wall, and metal debris. It was recorded in 2003. P-55-110 (CA-TUO-2007H) is the portion of the Hetch Hetchy Railroad grade that runs through the area. Additionally, an isolate broken milling implement was noted in report TO-6800, *Archaeological Survey and Cultural Resources Assessment for the Moccasin Effluent Pond Project in Moccasin, Tuolumne County, California* (by W. Self, 2008), and an isolate milling implement was noted in report TO-1218, *Archaeological Survey of the Moccasin Creek Sewage Treatment Facilities* (by K. L. Napton, 1976).

Four previous studies were conducted adjacent to the hatchery area, and an additional six previous studies were identified within 0.25 mile of the hatchery area.

Mokelumne River Hatchery Area

No prehistoric or historic archaeological resources were identified within the Mokelumne River Hatchery area or within 0.25 mile of the area.

No previous studies were conducted within the hatchery area. However, one journal article that discusses gold dredging activities along the Mokelumne River, which covers the area, was identified by the CCIC: "Calaveras Gold Dredges," which can be found in the *Las Calaveras Quarterly Bulletin of the Calaveras County Historical Society* Vol. XXXIII, Number 4, and was written in 1985. Additionally, three previous studies were conducted within a 0.25-mile radius of the hatchery area.

Eastern Information Center

Black Rock Rearing Ponds Area

No prehistoric or historic archaeological resources were identified within the area. One prehistoric and two historic resources were identified within 0.25 mile of the area. CA-INY-100 was described as a habitation site with manos, pottery, flake knives and scrapers, projectile fragments, and a schist metate and mano. It was recorded in 1950, and the site record notes that there is some partial destruction to the site due to a "dump pit on site." CA-INY-4590H is the Inyo County Wagon Road, which was the major north-south road in Inyo County prior to its incorporation into the state road system in the 1920s. It was originally recorded in 1992, with updates in 1993, 1996, 1999, and 2000. CA-INY-4591H is the Los Angeles Aqueduct, a concrete-lined aqueduct that intersects U.S. Route 395 at post mile (PM) 31.28. It was recorded in 2000.

No previous studies were conducted within the area. However, one study that provides an overview of cultural resources in the general vicinity was identified: IN-276, *Written in Bedrock: Prehistoric Acorn Use in the Eastern Sierra Nevada* (J. Haney), written in 1992.

Fish Springs Hatchery Area

One historic resource was identified within the Fish Springs Hatchery area. CA-INY-4590H is the Inyo County Wagon Road, discussed above, under “Black Rock Rearing Ponds Area.” Additionally, one resource was identified within 0.25 mile of the area. CA-INY-4682H is the Big Pine Canal, which carries water from the Owens River south to Lake Tinemaha. It was recorded in 1993.

No previous studies were conducted within the Fish Springs Hatchery area. However, one study that provides an overview of cultural resources in the general vicinity was identified: IN-276, discussed above under “Black Rock Rearing Ponds Area.” Additionally, one study was conducted within 0.25 mile of the Fish Springs Hatchery area.

Hot Creek Hatchery Area

No prehistoric or historic archaeological resources were recorded within the Hot Creek Hatchery area. Several prehistoric archaeological sites were recorded within 0.25 mile of the area. CA-MNO-630 was described as an “extensive temporary occupation site.” The possibility of destruction was noted as “Great, due to extensive size, high visibility, and heavy cattle grazing.” It was originally recorded in 1960, with updates in 1975, 1979, and 1982. CA-MNO-28/611 was originally recorded in 1953. It was described as a campsite and quarry. Site updates occurred in 1960, 1971, 1989 (where it is identified as being part of a larger complex, including CA-MNO 458/630), and 1995.

Seven previous studies were conducted within a 0.25-mile radius of the Hot Creek Hatchery area; two of these studies involved the general area. Additionally, two studies provide overviews of cultural resources in the general vicinity of the hatchery. MN-31, *A Cultural Resource Overview of the Bureau of Land Management Coleville, Bodie, Benton, and Owens Valley Planning Units, California Plus an Annotated Anthropological and Historic Bibliography* (C. Busby et al.), was compiled in 1979. MN-566, *Written in Bedrock: Prehistoric Acorn Use in the Eastern Sierra Nevada* (J. Haney), was written in 1992 (this is the same report as IN-276).

Mount Whitney Hatchery Area

No prehistoric or archaeological resources were recorded within the Mount Whitney Hatchery area or within 0.25 mile of the area.

No previous studies were conducted within the hatchery area. However, one study that provides an overview of cultural resources in the general vicinity was identified: IN-276, discussed above under “Black Rock Rearing Ponds Area.” Additionally, three studies were conducted within 0.25 mile of the project area.

North Central Information Center

American River Hatchery and Nimbus Hatchery Area

No prehistoric or archaeological resources were recorded within the American River Hatchery and Nimbus Hatchery area, and three resources (one prehistoric and two historic) were recorded within 0.25 mile of the area. CA-SAC-308/H (P-34-355) is the American River Mining District, Sailor Bar Area. LAR-5 and LN-8 are additional components contained within this site. This was an area of early placer mining and subsequent dredging. The site record (recorded in 1996 and updated in

2002) notes that several prehistoric sites are known to be in the general area, including LAR-5, a large mortar site. P-34-2168 (LAR-1) is on the edge of the 0.25-mile search radius. It is a bedrock mortar site consisting of six mortars; at the time of the site recordation (2008), the site was submerged, and no additional information could be provided. P-34-2170 is an isolated rusty and eroded metal frame, possibly part of machinery used in a small placer mining operation. It was recorded in 2008.

Four previous studies were conducted adjacent to the American River Hatchery and the Nimbus Hatchery area, and five additional studies were conducted within 0.25 mile of the area.

North Coastal Information Center

Mad River Hatchery Area

No prehistoric or archaeological resources were recorded within the hatchery area. One previous study was conducted within 0.25 mile of the area.

Northeast Information Center

Crystal Lake Hatchery Area

No prehistoric or archaeological resources were identified within the Crystal Lake Hatchery area. However, four prehistoric, three multi-component, and four historic resources were identified within 0.25 mile of the area. These resources are listed below.

- CA-SHA-2602: a lithic scatter with associated shell midden and a single-cupule bedrock mortar, located just south of the Crystal Lake Hatchery. It was recorded in 1996.
- CA-SHA-2607: a prehistoric site consisting of a single-cupule bedrock mortar and a lithic scatter. It was recorded in 1996.
- P-45-3727: a lithic scatter recorded in 2004.
- CA-SHA-2601/H: a multi-component site consisting of a shell midden, a lithic scatter, bedrock mortars and a possible house pit; and historic features (the remains of a water conduit or pipeline and associated rock alignments). It was recorded in 1996.
- CA-SHA-2603/H: a multi-component site consisting of a shell midden and lithic scatter and historic features (bridge abutments, barbed wire fence segments, and wooden corral remains). It was recorded in 1996.
- CA-SHA-2604/H: a multi-component site consisting of a shell midden, a lithic scatter, faunal bone, and freshwater shell. Historic features include two bridge abutments. It was originally recorded in 1996 and was updated in 2005.
- P-45-2605: a historic site consisting of the remains of the Baum Powerhouse. It was recorded in 1996.
- P-45-2609: a historic structure known as the "Hat Creek 1 Camp House 2562," a single-story residence built in 1924. It was recorded in 1996.
- P-45-2647: the Hat Creek No. 1 Penstock, a riveted steel pipe made by Western Pipe and Steel Company in 1921. It was recorded in 1996.

- P-45-2648: the Hat Creek 1 Powerhouse, built in 1921 as a component of the Hat Creek hydroelectric system. It was recorded in 1996.

No previous studies were conducted within the hatchery area, and two previous studies were conducted within 0.25 mile of the hatchery area.

Darrah Springs Hatchery Area

No prehistoric or archaeological resources were identified within the Darrah Springs Hatchery area. However, two multi-component resources were identified within 0.25 mile of the hatchery area. The prehistoric components of CA-SHA-2039/H include a large lithic scatter and possible house pits. The historic components comprise features of the Battle Creek Ranch, including residential and farming-related structures. The center part of the ranch complex is superimposed over the prehistoric site area. This resource extends mostly out of the 0.25-mile radius around the Darrah Springs Hatchery; however, a small portion extends to just northeast of the hatchery. It was recorded in 1992.

The prehistoric component of CA-SHA-2044/H is a lithic scatter. The historic component is a trash scatter consisting of glass, tin cans, and ceramics. It was recorded in 1992.

Additionally, one historic resource was identified within 0.25 mile of the hatchery area. CA-SHA-2040H consists of a refuse deposit possibly associated with the Simon Darrah Ranch Complex; with artifacts dated from the 1920s. It was recorded in 1992.

One previous study surveyed the access road that runs through the Darrah Springs Hatchery: NEIC Report #1282, *Archaeological Survey of Access Roads, Construction Spread 4B California, PGT-PGE Pipeline Expansion Project*, written in 1982.

Feather River Hatchery Area

No prehistoric or archaeological resources were identified within the Feather River Hatchery area. However, three multi-component and eight historic resources were identified within 0.25 mile of the hatchery area. These resources are listed below.

- CA-BUT-69/H: a multi-component site with bedrock milling stations and historic features (cement pads and metal pins used as tie-downs associated with the ferry that operated at that location). It was originally recorded in 1957 (the prehistoric component only) and was updated in 2000, 2002, and 2004 to incorporate the historic components.
- CA-BUT-584/H: another multi-component site with bedrock milling stations and historic features (metal pins used as tie-downs associated with ferry operations). It was originally recorded in 1977 and was updated in 1998, 2000, 2002, and 2004 to incorporate the historic components and expand site boundaries.
- CA-BUT-841/H: another multi-component site consisting of a midden deposit with various artifacts, burials, and historic materials (bottle fragments). It was recorded in 1982.
- P-04-1454: a historic residence, circa the early 1920s, located at 2400 Montgomery Street. It was recorded in 1998.
- P-04-1460: historic structures, including two residences (one built around 1910 and the other built in the 1890s) and a brick garage (built between 1902 and 1926), located at 2426 Montgomery Street. P-04-1460 was recorded in 1998.

- P-04-1461: "Boss Burger," a one-story commercial building constructed in the 1890s, located at 2482 Montgomery Street. It was recorded in 1998.
- P-04-1462: a historic residence, built about 1920, located at 1200 Washington Avenue. It was recorded in 1998.
- P-04-1463: the Griggs House, a historic residence built between 1918 and 1926, located at 1255 Washington Avenue. It was recorded in 1998.
- CA-BUT-1601H: historic features on a small terrace along the south bank of the Feather River, including a stacked rock wall and a historic trash scatter. It was recorded in 1999.
- P-04-1944 (identified on the NEIC map as CA-BUT-1944H): an abandoned road extending from the west of, and ending just south of, the Feather River Hatchery along the northern bank of the Feather River. It was recorded in 2003.
- CA-BUT-2565H: a dredge field composed of five features (tailing piles and associated pits), recorded in 2003.

One previous study was conducted in the hatchery area: NEIC Report #6868, *Archaeological and Historical Resources Inventory Report, Oroville Facilities Relicensing FERC Project No. 2100*, written in 2005. Additionally, one previous study was conducted adjacent to the hatchery area, and seven previous studies were conducted within 0.25 mile of the area.

Feather River Hatchery Thermalito Annex Area

No prehistoric or archaeological resources were recorded within the Feather River Hatchery Thermalito Annex area or within 0.25 mile of it. One previous study was recently conducted within the area: NEIC Report #9539, *Cultural Resources Inventory of Caltrans District 3 Rural Conventional Highways in Butte, Colusa, El Dorado, Glenn, Nevada, Placer, Sacramento, Sierra, Sutter, Yolo, and Yuba Counties*, written in 2008. No additional studies were reported within 0.25 mile of the area.

Iron Gate Hatchery Area

No prehistoric or archaeological resources were recorded within the Iron Gate Hatchery area. One historic site, CA-SIS-3937H, was identified within 0.25 mile of the hatchery area. It consists of a rock wall, partially collapsed, and was recorded in 2003. One multi-component resource was identified within 0.25 mile of the hatchery area. CA-SIS-3939/H consists of a single rock shelter, a small lithic scatter, and some historic debris (ceramics, glass, and metal fragments). It was recorded in 2003.

No previous studies were recorded in the hatchery area, and two previous studies were conducted within 0.25 mile of the area.

Mount Shasta Hatchery Area

No prehistoric or archaeological resources were recorded within the Mount Shasta Hatchery area. One prehistoric site, CA-SIS-1651, was identified within 0.25 mile of the hatchery area. It consists of a lithic scatter with mostly unmodified obsidian debitage. It was recorded in 1992. One historic resource, CA-SIS-1650H, was also identified within 0.25 mile of the hatchery area. It consists of the remains of the Brownshasta Ranch, a ranch that was active in the 1920s for raising and training thoroughbreds. Features include the racetrack, a ditch line, and a roadbed. It was recorded in 1992.

No previous studies were recorded in the hatchery area, and two previous studies, both related to CA-SIS-1650H, noted above, were conducted within 0.25 mile of the hatchery area.

Trinity River Hatchery Area

No prehistoric or archaeological resources were recorded within the Trinity River Hatchery area. One prehistoric site, CA-TRI-24, was identified within 0.25 mile of the hatchery area. It consists of bedrock mortars and was recorded in 1952.

No previous studies were recorded in the hatchery area or within 0.25 mile of the hatchery area.

Northwest Information Center

Coyote Valley Fish Facility

No prehistoric or historic archaeological resources were recorded within the Coyote Valley Fish Facility area or within 0.25 mile of the area.

No previous studies were recorded in the fish facility area. Eight previous studies were conducted within 0.25 mile of the area.

Silverado Fisheries Base Area

No prehistoric or historic archaeological resources were identified within the Silverado Fisheries Base area. Two prehistoric archaeological sites were identified within the 0.25-mile search radius. CA-NAP-902 (P-28-795) is a small, sparse lithic scatter composed of obsidian flakes and one biface fragment. It was recorded in 1997. CA-NAP-383 is a midden site recorded in 1974. The site record states that the "area has been highly disturbed, probably by borrowing activities in [the 1930s] for Rector Dam/dirt access road cuts."

No previous studies were recorded in the Silverado Fisheries Base area, and four previous studies were conducted within 0.25 mile of the area.

Warm Springs Hatchery Area

One historic archaeological site is located within the Warm Springs Hatchery area. P-49-2729 is a historic resource consisting of a gravesite underneath a designated heritage tree by Sonoma County. According to the site record (recorded in 1999), "the grave is not clearly historic in nature and appears to likely be that of a small pet such as a dog, but may possibly be that of a small child or infant. ... No inscriptions were present on any of the boards or rocks at the grave." No additional resources were identified within 0.25 mile of the hatchery area.

One previous study was conducted within the hatchery area: NWIC Report #22107, Confidential Archaeological Addendum for Timber Operations on Non-Federal Lands in California, Waltenspiel THP, 1-99-281 SON (California Department of Forestry, written in 1999 (it is the study corresponding to the site recorded above). No studies within 0.25 mile of the hatchery area were reported.

San Bernardino Archaeological Information Center

Mojave River Hatchery Area

No prehistoric or historic archaeological resources were identified within the Mojave River Hatchery area or within a 0.25-mile search radius. One previous study was conducted within 0.25 mile of the hatchery area.

South Central Coastal Information Center

Fillmore Hatchery Area

No prehistoric or historic archaeological resources were identified within the Fillmore Hatchery Area or within a 0.25-mile search radius. No previous studies were recorded within the hatchery area, and six studies were conducted within 0.25 mile of the hatchery area.

Southern San Joaquin Valley Information Center

Kern River Planting Base Area

No prehistoric or historic archaeological resources were identified within the Kern River Planting Base area. One prehistoric site was identified just to the north of the planting base, on the north side of North Sierra Way (the planting base is located on the south side of North Sierra Way). P-15-2517 consists of five bedrock milling stations, with slicks, mortars, and additional artifacts. It was recorded in 1989.

One previous study was conducted immediately adjacent to the Kern River Planting Base area: SSJVIC Report #KE-1921, An Assessment of Seven Archaeological Sites on Southern California Edison Company Kern River No. 3 Hydroelectric Project, Kern and Tulare Counties, California (FERC Project No. 2290), was recorded in 1990. Additionally, one previous study was conducted within 0.25 mile of the area.

San Joaquin Hatchery Area

No prehistoric or historic archaeological resources were identified within the San Joaquin Hatchery area. One prehistoric, one multi-component, and eight historic resources were recorded within 0.25 mile of the area. These resources are listed below.

1. P-10-856/CA-FRE-856: a food processing site with bedrock outcroppings, possibly a village encampment. It was recorded in 1978.
2. P-10-3930: the earthen grade of the San Joaquin Valley Railroad constructed between Fresno and Friant in 1892. It was recorded in 1999.
3. P-10-4481/CA-FRE-3136H: the former location of the San Joaquin Valley Railroad turntable that operated from 1892 to the 1950s; features include a concrete foundation pad, remains of a bituminous roadbed, and a depression with historic debris (metal sink and pipes, lumber, and glass and ceramic utility fragments). It was recorded in 2000.

4. P-10-4482/CA-FRE-3137H: a historic sidewalk and concrete features associated with a city block that once formed part of the historic Friant business district. It was recorded in 2000.
5. P-10-4483/CA-FRE-3138H: concrete foundations for a grocery store and post office that were used during the 1940s and 1960s, located in the town of Friant. It was recorded in 2000.
6. P-10-4490: an automotive garage and convenience store, located in the town of Friant, ca. early 1900s. It was recorded in 2000.
7. P-10-4491: a motel located in the town of Friant, ca. 1950. It was recorded in 2000.
8. P-10-4492: a commercial building located in the town of Friant, ca. early 20th century. It was recorded in 2000.
9. P-10-4732: a single-family residence located in the town of Friant, built 1949. It was recorded in 2001.
10. P-20-2093: a prehistoric site consisting of four bedrock milling features. It was recorded in 1994.
11. P-20-2094: the site consists of prehistoric components (bedrock milling features) and historic components (a dam rock feature). It was recorded in 1994.
12. One previous study was conducted within the hatchery area. SSJVIC Report #FR-1031, *An Archaeological Survey of Lot 153, Friant, California*, was written in 1990. One study was conducted adjacent to the hatchery area. FR-474, *Re: Ea No. 885, the Lost Lake Campground Facility*, was written in 1978. An additional four studies were conducted within 0.25 mile of the hatchery area.

Native American Correspondence

The California Native American Heritage Commission (NAHC) regulates Native American concerns toward the excavation and recovery of Native American cultural resources. Among other duties, the NAHC is authorized to resolve disputes relating to the treatment and disposition of Native American human remains and items associated with burials. Upon notification of the discovery of human remains by a county coroner, the NAHC notifies the Native American group or individual most likely descended from the deceased.

ICF Jones & Stokes contacted the NAHC on December 5, 2008, requesting a search of its sacred lands database and a list of contact information for local Native American representatives. The NAHC provided three response letters, on December 11, 18, and 23, 2008. The Native American contact information for all of the hatchery areas was provided within these three letters, all of which stated that no resources were identified in the sacred lands file within the hatchery areas. The NAHC identified a total of 111 Native American individuals or organizations that might have information pertinent to the Program or concerns regarding the Program.

Letters were sent between December 15 and 30, 2008, to all Native American representatives listed by the NAHC. The letters included a brief description of the Program, location data, Program area maps, and a request to respond with any information or concerns about the Program. The representatives only received the maps and information for the hatchery areas within their county.

On December 18, Freddy Ramirez, a Chumash representative, telephoned ICF Jones & Stokes. He stated that the Fillmore Hatchery, in Ventura County, was outside the Chumash area of operations;

however, he suggested that ICF Jones & Stokes contact Julie Lynn Tumamait, another Chumash representative, for additional input. Mr. Ramirez was thanked for his response and informed that Ms. Tumamait also had been contacted and that any comments Ms. Tumamait had would be noted and would receive a response.

Also on December 18, Ren Reynolds of the Enterprise Rancheria and the Butte Tribal Council in Oroville, in Butte County, telephoned ICF Jones & Stokes. He requested additional information regarding the Program. He was provided with additional background information and informed that if additional, more area-specific information were finalized, this information would be passed on to him either through a phone call or through a follow-up letter.

On December 22, Bear River Band of the Rhonerville Rancheria (Humboldt County) Tribal Historic Preservation Officer (THPO) Nick Angeloff contacted ICF Jones & Stokes. He stated that the Mad River Hatchery area was in a "sensitive area for human habitation" and that it was within the tribe's aboriginal territory. He also noted that the tribe would like to visit the hatchery area. A response was sent to Mr. Angeloff on December 30, which explained that Program plans had not been finalized yet and that he would be kept abreast of any developments pertaining to the Mad River Hatchery. Mr. Angeloff was thanked for his letter and informed that his comments would be noted.

On December 23, THPO and Cultural Director for the Wiyot Tribe (Humboldt County) Helene Rouvier contacted ICF Jones & Stokes. She stated that the Wiyot Tribe had "no known cultural sites in the area," but that there was potential for cultural use and resources in "areas close to water resources, on ridge tops, on mid slope south facing terraces." She also stated that the NCIC should be contacted and that, because of the Mad River Hatchery's location, "the Blue Lake Rancheria should also be contacted." A response letter was sent to Ms. Rouvier on December 30, which explained that Program plans had not been finalized yet and that she would be kept abreast of any developments pertaining to the Mad River Hatchery. Ms. Rouvier was thanked for her letter and informed that her comments would be noted.

On December 30, Jim Redmoon, cultural resources manager for the Dumna Tribal Government, in Fresno County, contacted ICF Jones & Stokes. He stated that there are several sites near the San Joaquin Hatchery area. A response letter was sent to Mr. Redmoon on December 30, which explained that Program plans had not been finalized yet and that he would be kept abreast of any developments pertaining to the San Joaquin Hatchery. Mr. Redmoon was thanked for his letter and informed that his comments would be noted.

On December 30, Chris Prosko, director of natural resources and roads for the Pit River Tribe, in Shasta County, contacted ICF Jones & Stokes, requesting additional (more specific) information regarding the Program. A response was sent to Mr. Prosko on January 2, 2009, which explained that Program plans had not been finalized yet and that he would be kept abreast of any developments pertaining to the Crystal Lake Hatchery.

On January 2, 2009, Randy Yonemura, representing Sacramento and San Joaquin Counties for the Miwok, contacted ICF Jones & Stokes, requesting additional (more specific) information regarding the Program. He stated that he would like to be included in all preliminary activities with regard to the hatchery facilities in Sacramento County (Nimbus Hatchery and American River Hatchery) and San Joaquin County (Mokelumne River Hatchery). Additional information in the form of maps was sent to Mr. Yonemura that day, and it was explained that Program plans had not been finalized yet and that he would be kept abreast of any developments pertaining to Nimbus and Mokelumne River Hatcheries.

On January 5, 2009, THPO Bill Helmer of the Big Pine Band of Owens Valley, in Inyo County, contacted ICF Jones & Stokes. He stated that there are several sites near the Black Rock Rearing Ponds and Fish Springs Hatchery. He also noted that the areas around both are important as traditional cultural properties for the Big Pine Band and other tribes in the Owens Valley and also as historical settings for early battles between Native Americans and the American cavalry. He also stated that CA-INY-100, a habitation site, extends beyond the boundaries identified in the original 1950 site record and needs to be updated. Mr. Helmer was informed that he would be kept notified about further developments regarding the Program, particularly those pertaining to the Black Rock Rearing Ponds and Fish Springs Hatchery.

On January 5, 2009, Tonya Lindsey, environmental assistant for the Quartz Valley Indian Reservation, in Siskiyou County, contacted ICF Jones & Stokes. She stated that the tribe has no knowledge of any cultural sites within or adjacent to the Iron Gate Hatchery area; however, because the area is within the tribe's ancestral territory, it is interested in any archaeological findings.

On January 12, 2009, Tammy Russell of the Wintu Educational and Cultural Council, in Trinity County, contacted ICF Jones & Stokes. She stated that there may be sites in the vicinity of the Trinity River Hatchery. Ms. Russell was provided with additional information regarding the work that would most likely be done at the hatchery and informed that she would be kept abreast of further developments pertaining to the Trinity River Hatchery.

On February 23, 2009, Stanley Cox of the Tuolumne Me-Wuk Tribal Council contacted ICF Jones & Stokes. He requested a copy of the EIR/EIS so that the tribe can better understand the Program. A response letter was sent to Mr. Cox on February 25, stating that the information the tribe has requested would be provided once the report has been completed.

On March 10, 2009, Daniel Fonseca of the Shingle Springs Band of Miwok Indians contacted ICF Jones & Stokes. He stated that there are no known prehistoric or historic sites near the Mad River Hatchery. He requested that John Tayaba, vice chairman of the Shingle Springs Band of Miwok, be contacted if any cultural resources were found during project-implementing activities.

On June 12, 2009, Bill Helmer, THPO of the Big Pine Paiute Tribe of the Owens Valley, contacted ICF Jones & Stokes. He requested a copy of the EIR/EIS. He also wanted to know who the federal agency was for the project and who he could contact directly at both the federal agency and at CDFG. The contact information for the U.S. Fish and Wildlife Service (Federal Agency; Mr. Bart Prose) and the CDFG (Jim Starr) was provided to Mr. Helmer, and his contact information was forwarded to Jennifer Rogers, who will add the tribe to the project mailing list and ensure that he is either provided with a copy of the EIR/EIS or sent a link to obtain the requested information.

On June 15, Theresa Stone-Yanez, THPO of the Bishop Paiute Tribe contacted ICF Jones & Stokes. She requested a copy of the EIR/EIS. She also wanted to be put on the project mailing list, and requested a site visit to the hatchery facilities in Inyo County. The contact information for the U.S. Fish and Wildlife Service (Federal Agency; Mr. Bart Prose) and the CDFG (Jim Starr) was provided to Ms. Stone-Yanez, and her contact information was forwarded to Jennifer Rogers, who will add the tribe to the project mailing list and ensure that the tribe is either provided with a copy of the EIR/EIS or sent a link to obtain the requested information.

Additionally, because of potential fisheries issues in Nevada related to the Program, USFWS also sent out a mailing of letters to tribes within counties that have waters downstream of streams stocked by the Program. This letter and a list of the contacts to whom it was sent are included in Appendix I. No

correspondence was received from the Nevada tribes. USFWS conducted additional email correspondence with Mr. Helmer, THPO of the Big Pine Band of Owens Valley, about the Program and the Fish Springs Hatchery and Black Rock Rearing Ponds. These emails are included in Appendix I.

Appendix I contains copies of all Native American correspondence.

Methods

The approach and methodology for assessing each of these categories of potential impacts is discussed below. Impacts related to cultural resources were assessed based on professional judgment in light of the activities, methods, and techniques for implementing the Program and for the implementation of any Program alternatives. The impact analysis in this chapter focuses on evaluating potential impacts of the Program and Program alternatives on existing and undiscovered cultural resources, should they be present in Program areas.

Significance Criteria

Impact assessments for cultural resources are based on the type of resource, the type of impact, and the extent of the impact. Impacts on cultural resources are considered significant if they would adversely affect significant cultural resources. Specific CEQA significance criteria are described below.

According to the State CEQA Guidelines (14 CCR 15064.5[b]), a project with an effect that may cause a substantial adverse change in the significance of a historical resource or a unique archaeological resource, or that would disturb any human remains, including those interred outside of formal cemeteries, is a project that may have a significant impact on the environment. CEQA further states that a substantial adverse change in the significance of a resource means the physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of a historical resource or a unique archaeological resource would be materially impaired. Actions that would materially impair the significance of a historical resource or a unique archaeological resource are any actions that would demolish or adversely alter the physical characteristics of a historical resource or unique archaeological resource that convey its historic significance and qualify it for inclusion in the CRHR or in a local register or survey that meets the requirements of PRC 5020.1(k) and 5024.1(g).

If an archaeological resource is neither a unique archaeological resource nor a historical resource, the impacts of a project or program on those resources are not considered significant.

Impacts and Mitigation Measures

This section describes the impacts on cultural resources that would result from the Program and Program alternatives and describes related mitigation measures.

This analysis is based on information obtained from the CCIC, EIC, NCIC, NoCIC, NEIC, NWIC, SBAIC, SCCIC, and SSJVIC and from additional research conducted at the California State Library in Sacramento and the DFG's digital library (available on its website). The known archaeological and historical resources located within the hatchery areas were assessed using the criteria set forth by the Office of Historic Preservation (OHP), the CRHR, and guidelines set forth by CEQA and NEPA.

Impact CR-1: Potential Disturbance of Human Remains (No Impact)

Human remains have not been identified within the hatchery areas as a result of the records search or archaeological fieldwork or through consultation with the NAHC and interested Native American individuals throughout the counties in which hatchery areas are present. Furthermore, no construction activities are expected for the Program. Accordingly, there will be no disturbance of human remains, and there is no impact.

Impact CR-2: Impacts on Unknown or Known Prehistoric or Historic Archaeological Resources (No Impact)

Construction and staging activities associated with proposed projects have the potential to disturb buried, as-yet-undiscovered prehistoric or historic archaeological sites. Damage to or destruction of significant buried resources during construction would be a significant impact under CEQA. However, there are no construction activities associated with the Program, and there is no impact.

Impact CR-3: Impacts on Architectural (Built Environment) Resources (No Impact)

There are no proposed improvements near or in close vicinity to architectural resources (buildings/structures or linear features) that are 50 years old or older. Given that there are no proposed improvements that may lead to physical demolition, destruction, relocation, or alteration of potential historical resources, there would be no impact on architectural resources, and no further studies are required.