

Lindsey Slough Freshwater Tidal Marsh Enhancement Project Solano County, California

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USGS 7.5' Dozier Quadrangle, California
APE covers 459 acres, T 5 N R 1 & 2 E

October 2012

MANAGEMENT SUMMARY

This report details the results of a cultural resources inventory of the Lindsey Slough Freshwater Tidal Marsh Enhancement Project (Project), located in Solano County, California. The Solano Land Trust (SLT) in cooperation with the California Department of Fish and Game (CDFG) are developing a restoration plan for the 965-acre reserve to enhance aquatic, wetland, and riparian habitat at the Calhoun Cut Ecological Reserve (Reserve). Owned by CDFG, the Reserve lies in the northwest edge of the Sacramento-San Joaquin Delta region, just west of the confluence of Lindsey Slough and Barker Slough. The U.S. Army Corps of Engineers jurisdictional determination identified 459 acres of wetlands on the Reserve, which has been defined as the project's Area of Potential Effects (APE). The project's direct effects (construction actions) and indirect effects (tidal inundation and channel evolution) will be limited to approximately 197 acres within the project APE.

Solano Archaeological Services (SAS) conducted a background record search which indicated that five previously documented prehistoric sites (CA-SOL-1, CA-SOL-2, CA-SOL-3, CA-SOL-4, and CA-SOL-5), recorded in multiple locations in the 1940s, are within or in the vicinity of the Project APE. In April 2008, an SAS archaeological team conducted an intensive pedestrian archaeological survey of the area of direct effect. One previously unrecorded prehistoric site (Prehistoric Site 5) was documented as a result of this survey and Calhoun Cut was identified as a potential historic resource. Sites CA-SOL-1, CA-SOL-2, CA-SOL-3, CA-SOL-4, and CA-SOL-5 may be located within and/or immediate adjacent to the APE, but dense tule stands and imprecise mapping from the 1948 site records prevented SAS from locating any of the previously recorded sites. Consultation with the Native American community was conducted via mail and telephone but did not result in any additional cultural resource sites or potentially sensitive properties being identified.

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INTRODUCTION

Project Description

This report details the results of a cultural resources inventory of the Lindsey Slough Freshwater Tidal Marsh Enhancement Project (Project), situated within the Sacramento-San Joaquin Delta (Delta) region in Solano County, California (Figure 1). Historically, the Delta comprised a vast tule marsh but today the Delta is a largely controlled mosaic of reclaimed islands and modified channels bounded by levees.

The Calhoun Cut Ecological Reserve (the Reserve) is located on the northwest edge of the Delta, west of the confluence of Lindsey Slough, Barker Slough, and Calhoun Cut. The Solano Land Trust (SLT) in cooperation with the California Department of Fish and Game (CDFG - owner of the property) is developing a restoration plan for the Reserve to enhance aquatic, wetland, and riparian habitats. Because Project construction and implementation could potentially affect cultural resources, Solano Archaeological Services (SAS) was contracted to conduct background research and a field inventory to identify cultural resource locations and to assess these resources in accordance with the provisions of Section 106 of the National Historic Preservation Act (NHPA) and the National Environmental Policy Act.

Project Purpose

The goal of the Project is to benefit native floral and faunal species and improve water quality. This would be accomplished by restoring a connected freshwater tidal marsh riparian community, along with other significant wetland habitat, in the vicinity of Calhoun Cut, without adversely impacting surrounding land and water uses. Figure 3 depicts maximum tidal inundation projected.

Construction

The restoration of the tidal channel system to Lindsey Slough consists of removing several existing features that restrict flow through the slough and excavating a starter channels to initiate evolution of the slough channel. At the initiation of the construction period an access road will be established from Highway 113 to the location of the south berm breach (see Figure 2). The preparation of this access road would include a minimal amount of grading (estimated depth of 6 inches) and reconfiguration of existing surface material to create a roadway suitable for vehicular and equipment access. Access to the existing north berm breach would be along existing agricultural access roads on the north side of Calhoun Cut.

The existing north berm breach would be enlarged (widened and deepened) using land-based equipment such as a bucket excavator or backhoe. Excavated soil would be placed on the existing berm within reach of the excavator and away from the breach. The existing culvert and tide gate, as well as, rip rap, and woody debris would be removed from the existing breach opening. Once removed from the breach location, the debris would be disposed of offsite. The total depth of the breach enlargement would be approximately 12 feet (3.7' NGVD and the width 53' at mean higher high water) (ESA PWS 2011).

The southern berm of Calhoun Cut will be breached by removing the existing culvert and excavating the embankment. The total depth of the south berm breach would be approximately 17.5 feet (5.0' NGVD and the width 115' at mean higher high water) (ESA PWA 2011).

The starter channels must be designed to prevent emergent plant growth (primarily tule) and wide and deep enough to provide sufficient flow to create necessary scour and erosion. It is projected (ESA PWA 2011) that initial erosion will eventually expand the starter channels but that subsequent siltation will reduce channel size to a more stable depth. A starter channel would be excavated from the south breach eastward approximately 5,200 feet to connect to the existing tidal channel at the east end of the site. The starter channel would have a maximum depth of approximately 6.5 feet. A small earthen causeway at the east end of the site would be excavated and lowered (by 2 to 3 feet) to match adjacent grades.

Construction methods may include land-based equipment and upland soil disposal for excavation of the south breach and removal of debris and sediment from the existing north breach. Upland placement of soil excavated from the starter channel is not planned. The presence of riparian vegetation, dense tules, existing water levels and proposed channel size will likely require a combination of traditional construction methods for excavation within the existing marsh. A traditional bucket excavator, working on mats, or an amphibious bucket excavator will be used to remove existing vegetation and soil from within the tule marsh along the channel alignment. The material excavated will be placed on either side of the channel, within a single reach of the excavator, for beneficial reuse of the excavated sediments and to create a low habitat berm parallel to the starter channel. In locations where riparian vegetation is present adjacent to the historic channel location, placement of excavated material to create the habitat berm is not feasible. A hydraulic suction dredge would be used to excavate the channel in combination with a bucket excavator to remove existing vegetation. The slurry would be pumped to locations at the western portion of the site where the low habitat berms were constructed. The slurry will be placed within the existing tule marsh, below the elevation of MHHW, using a pipe to allow the slurry to spread out over the surface or by pumping and spraying the slurry within the tule marsh. The sediment in the slurry will settle out while the water would return to the channel.

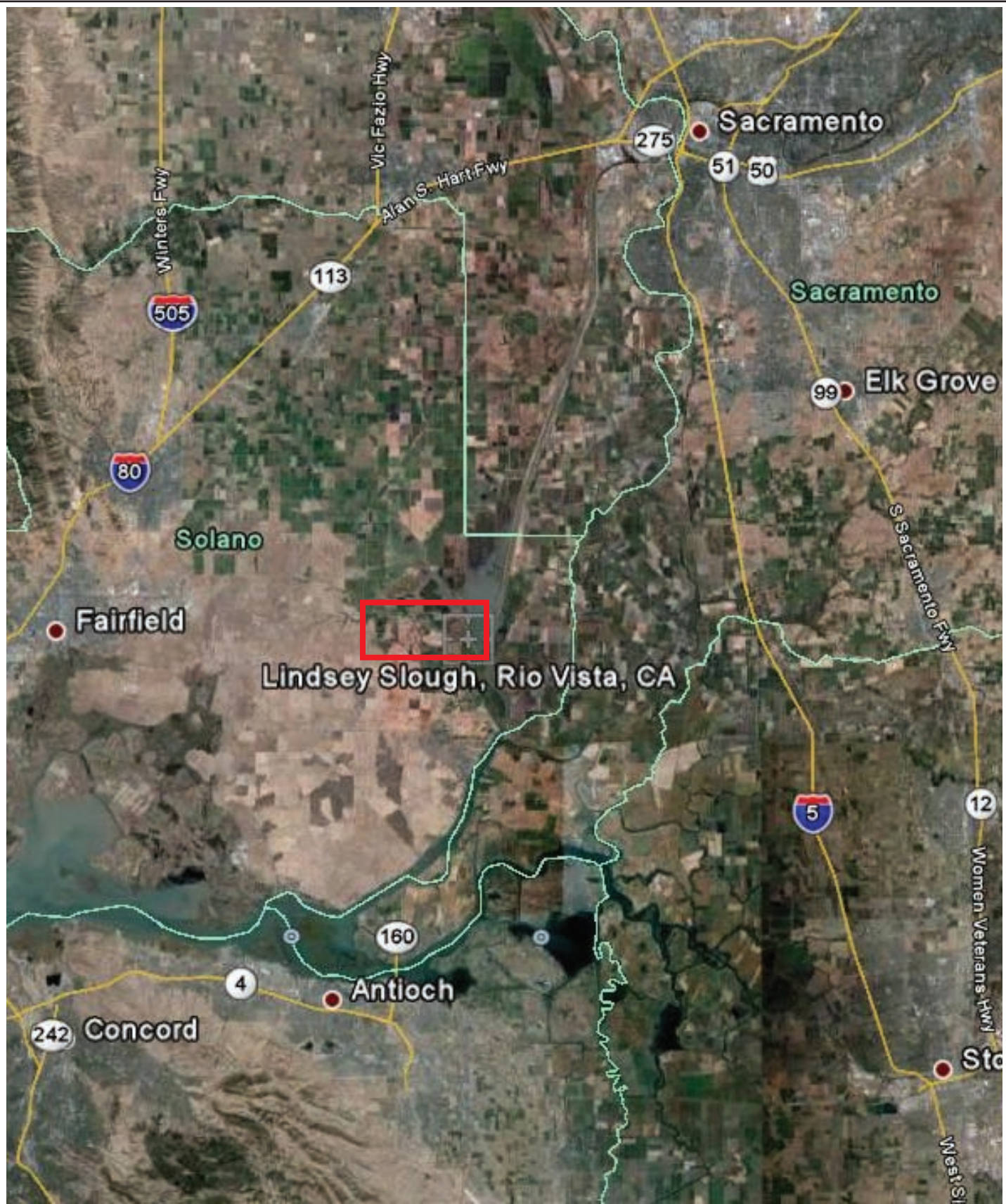
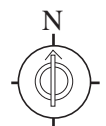


Figure 1. Project Vicinity Map.

Source: GoogleEarth Pro 2011

 = Project Area



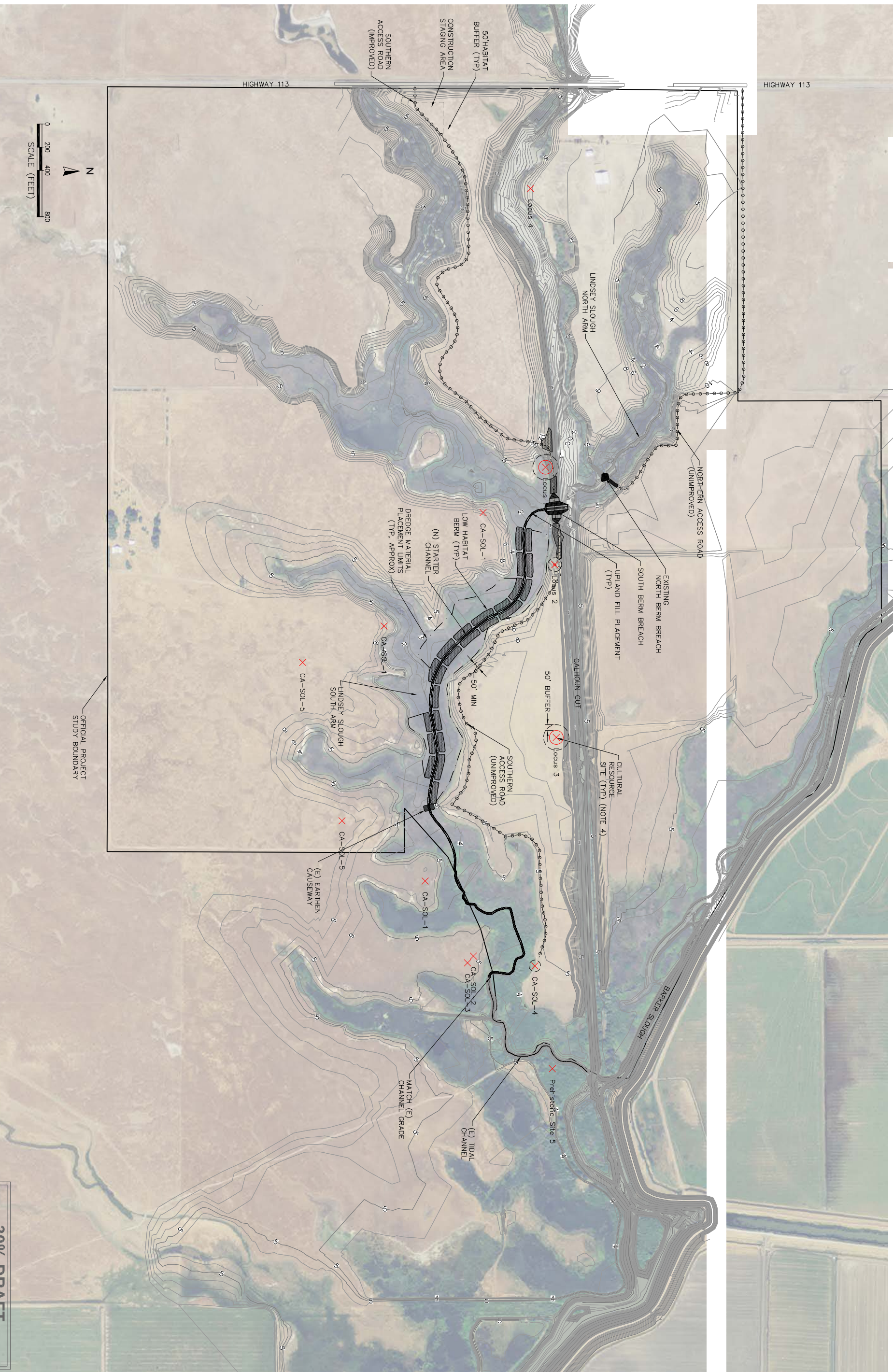


Figure 2. 30% Project Construction Map. Courtesy of ESA PWA 2011

**30% DRAFT
NOT FOR CONSTRUCTION**

DESIGNED: P. LUECKING DRAWN: P. LUECKING INCHARGE: SCALE: 1" = 40' DATE: JUNE 2011 SHEET:	APPROVED: 30% DRAFT NOT FOR CONSTRUCTION	PREPARED FOR: SOLANO LAND TRUST AND CALIFORNIA DEPARTMENT OF FISH & GAME	SHEET TITLE: SITE PLAN	PREPARED BY: ESA PWA <small>550 Kearny Street, Suite 900 San Francisco, CA 94108 415.262.2300 phone 415.262.2303 fax www.pwa-tl.com</small>
		PROJECT: LINDSEY SLOUGH FRESHWATER TIDAL MARSH ENHANCEMENT PROJECT	SHEET: C2 2 OF 7	

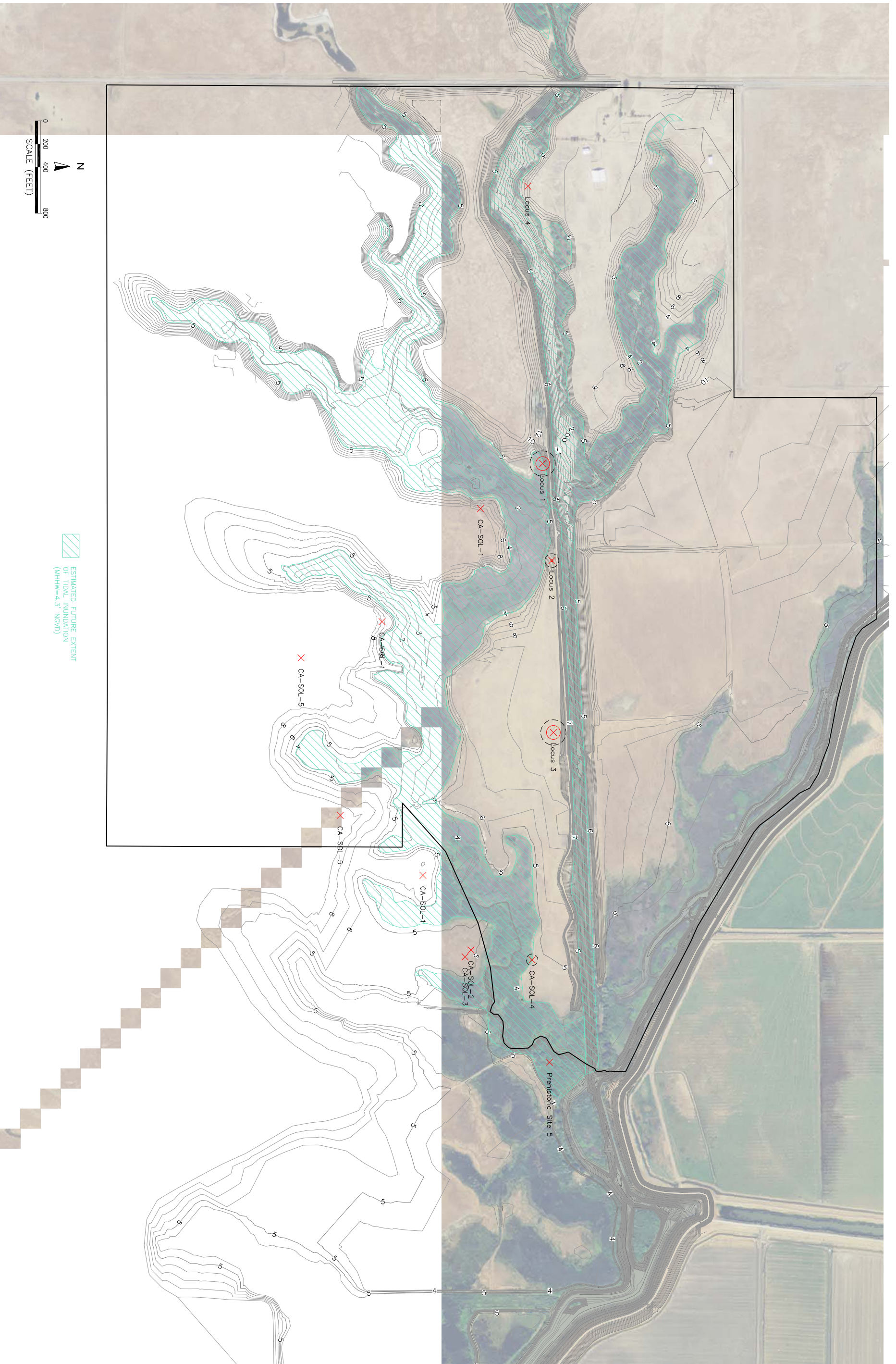
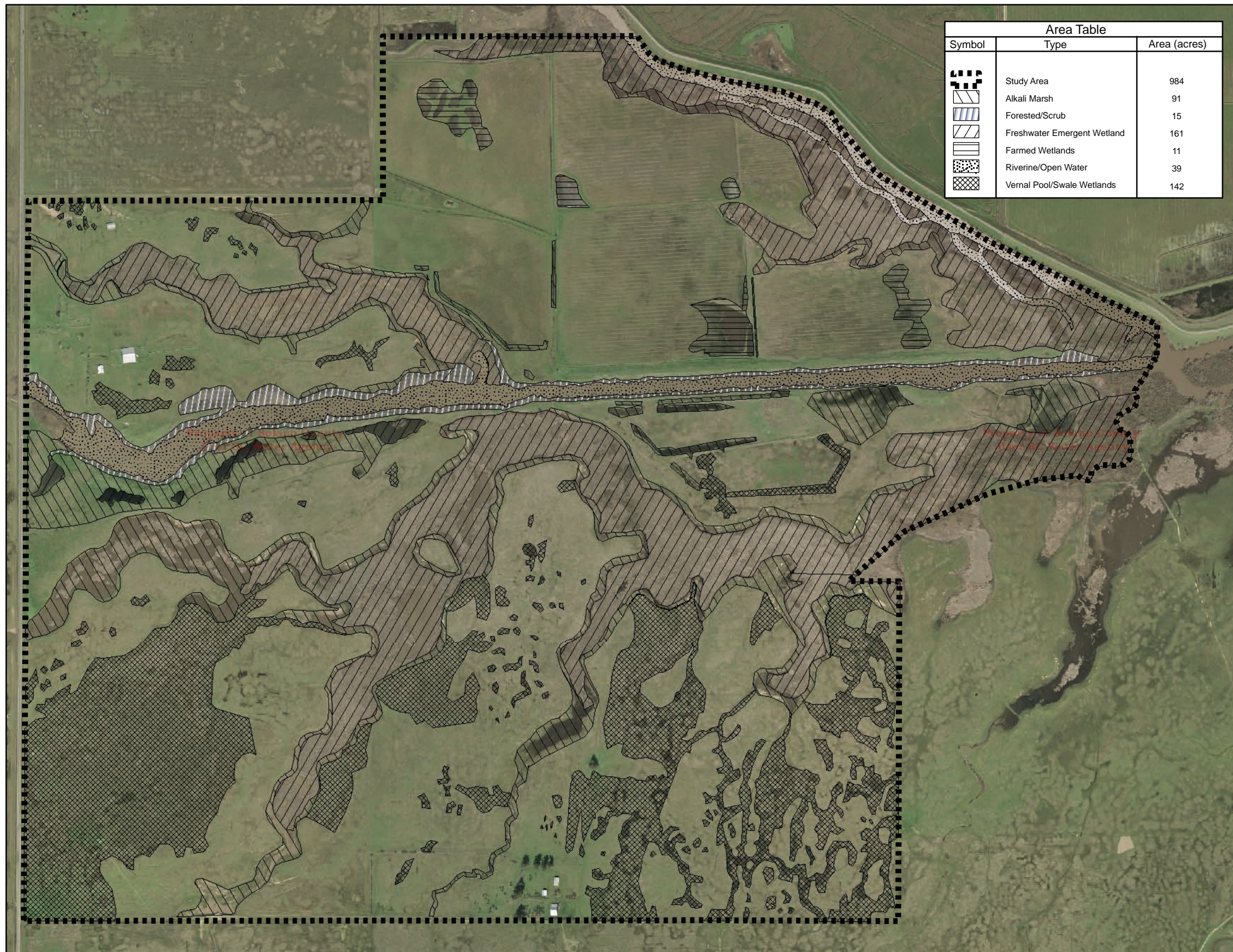


Figure 3. Tidal Inundation Map. Courtesy of ESA PWA

ESTIMATED FUTURE EXTENT OF TIDAL INUNDATION (MHHW=4.3' NGVD)

<p>30% DRAFT NOT FOR CONSTRUCTION</p>	<p>DESIGNED: P. LUECKING</p> <p>DRAWN:</p> <p>INCHARGE:</p> <p>SCALE:</p> <p>DATE: JUNE 2011</p> <p>SHEET:</p>	<p>PREPARED FOR:</p> <p style="text-align: center;">SOLANO LAND TRUST AND CALIFORNIA DEPARTMENT OF FISH & GAME</p>	<p>SHEET TITLE</p> <p>PROJECT</p> <p style="text-align: center;">LINDSEY SLOUGH FRESHWATER TIDAL MARSH ENHANCEMENT PROJECT</p>	<p>PREPARED BY:</p> <p style="text-align: center;">ESA PWA</p> <p style="font-size: small;">550 Kearny Street, Suite 900 San Francisco, CA 94108 415.262.2300 phone 415.262.2303 fax www.pwa-td.com</p>
	<p>APPROVED:</p>	<p>06 7</p>		



0 400 800 1,600
 Feet
 1 inch = 400 feet at 24" x 21"



Graphic courtesy of Life Science! and ESA PWA 2011

Figure 4. Wetland delineation Map.
 Lindsey Slough Tidal Freshwater Marsh Enhancement Project

Fieldwork: Life Science!
 Graphics: Life Science! in coord. with PWA
 December 2008 Revised November 2010

Definition of Undertaking

Since the project would affect waters of the United States, the SLT must meet the requirements of Section 404 of the Clean Water Act and is seeking a permit from the U.S. Army Corps of Engineers, Sacramento District. Projects that include Federal lands, funding, or permits fall under the jurisdiction of Section 106 of the NHPA (36 CFR 800) and therefore this project meets the definition of an undertaking. This cultural resources report was prepared by SAS under the Sacramento District regulatory branch guidelines for compliance with Section 106.

Area of Potential Effects

The Project jurisdictional 459-acre wetland delineation was established by Life Science! in coordination with ESA PWA in December of 2008, and was approved by the U.S. Army Corps of Engineers in November of 2011 (see Figure 4). The wetland delineation serves as the Project's Area of Potential Effect (APE), and defines a substantially larger area which will not be directly affected by Project construction or projected tidal inundation. The Project team (SLT, CDFG, Life Science!, ESA PWA, and SAS) estimated the area where potential project impacts may actually occur based on an analysis of the wetland delineation map, location of project construction impacts, hydraulic geometry calculations of estimated future tidal channel dimensions, and tidal inundation areas (ESA PWA 2011). The construction impact area is shown in Figure 2 and anticipated tidal inundation area is shown in Figure 3. According to this analysis, the direct effects (construction impacts) and indirect effects (tidal inundation areas) of the project will occur on 197 acres within the project APE (see Figure 5).

The restoration of the tidal channel system to Lindsey Slough consists of removing several existing features that restrict flow through the slough and excavating starter channels to initiate evolution of the slough channel. The starter channels (approximately 13.5 feet wide and 4.5 feet deep) must be designed to prevent emergent plant growth (primarily tule) and wide and deep enough to provide sufficient flow to create necessary scour and erosion. It is projected (ESA PWA 2011) that initial erosion will expand the starter channel to widths of 100 to 130 feet and a depths of 12 to 14 feet (both measured at MHHW) but that subsequent siltation within the marsh will reduce channel size to a more stable 60 to 90 feet wide and 10 to 11 feet deep over the long-term.

Project Location

The project is situated on the northeast corner of Section 26, the northwest corner of Section 25, the southeastern corner of Section 24, and Sections 19, 29, and 30, Township 5 North, Range 1 and 2 East, as illustrated on the Dozier, California 7.5' topographic quadrangle map (Figure 5). Situated 13 km (8 miles) northwest of the City of Rio Vista on unincorporated land in Solano County, Calhoun Cut lies 6.5 km (4 miles) north of Highway 12 and is bisected by Highway 113 heading north to Dixon (Figure 1). Additionally, an eastern segment of Robinson Road heads directly into the ecological reserve. Calhoun Cut is surrounded in all directions by agricultural and grazing lands. Several privately-owned ranches are present in the vicinity, the most prominent being the Peterson Ranch located on the eastern side of Calhoun Cut.

PROJECT CONTEXT

Regulatory Setting

Federal Regulations

As defined by Section 106, cultural resources can include historic-era or prehistoric sites, structures, buildings, districts, and objects, each of which is evaluated for its eligibility for listing on the National Register of Historic Places (NRHP). The Section 106 process mandates that foreseeable significant impacts to resources eligible for NRHP listing must be mitigated.

The NRHP is a register of districts, sites, buildings, structures, and objects of significance in American history, architecture, archaeology, engineering, and culture. The regulations provided in 36 CFR Part 60.4 describe the criteria to evaluate cultural resources for inclusion in the NRHP. Cultural resources can be significant on the national, State, or local level. Properties may be listed in the NRHP if they possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:

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

Most prehistoric archaeological sites are evaluated with regard to Criterion “d” of the NRHP, which refers to site data potential. Such sites typically lack historical documentation that might otherwise adequately describe their important characteristics. Archaeological methods and techniques are applied to gain an understanding of the types of information that may be recovered from the deposits. Data sought are those recognized to be applicable to scientific research questions or to other cultural values.

Site integrity is also a consideration for the NRHP eligibility of an archaeological locale. The aspects of integrity include location, setting, design, workmanship, feeling, and association. These may be compromised to some extent by cultural and post-depositional factors (e.g., highway construction, erosion, bioturbation, etc.), yet the resource may still retain its integrity for satisfying Criterion d if the important information residing in the site survives.

Natural Setting

Fed by its main two arteries, the Sacramento and San Joaquin Rivers, the Delta drainage system represents a complicated set of channels, sloughs, creeks, and islands. Calhoun Cut is located on

the northwest edge of the Delta region, just west of the confluence of Lindsey Slough and Barker Slough. Lying close to the eastern edge of Solano County, the Project APE is situated approximately 40 kilometers (about 25 miles) east of the Coastal Range foothills and lies at an elevation of 12-15 feet above mean sea level. To the east flows the main artery of the Sacramento River and the Sacramento River Shipping Channel, and in many directions are smaller unnamed creeks and tributaries. In 1913 a 13-foot deep shipping channel was cut westward from Lindsey Slough in hopes of allowing navigation to a proposed but never built town called “Solano City” (Goerke-Shrode 2002). The channel became known as “Calhoun Cut” and is discussed in further detail in the Local History section of this report.

Historically, the land within the APE was used for agriculture and cattle-grazing, but is now being retired to restore natural wetlands. Annual grasses and wildflowers are abundant on most of the valley flatland surrounding the slough. West of Highway 113 lies the Jepson Prairie Reserve, where numerous endangered and indigenous biological resources can be observed. Areas adjacent to the Calhoun Cut, including banks and islands, exhibit a riparian habitat filled with tule marsh, and in some areas extremely dense thickets of riparian shrubs and brush. The eastern side of Calhoun Cut exhibits very dense vegetation, and is partially lined with oak trees and access roads. Several vernal pools are visible in areas around the slough. No structures or buildings currently exist in the APE.

Although the APE predominantly consists of permanently inundated lands, a variety of valley soils can also be seen in and around the surrounding area. Roughly 30% of the APE consists of San Ysidro sandy loam, 0-2% slopes, while about 19% consists of Pescadero clay loam and 13% consists of Solano loam (Bates 1977). Smaller traces of Antioch-San Ysidro complex (0-2% slope), Omni silty clay, Sacramento clay, Solano-Pescadero complex, and Willows clay were also identified in the immediate area. Most of the soils are adequate for agriculture and cattle-grazing.

Prehistoric Setting

Over the last century a host of researchers have pursued an understanding of the cultural changes observed in the archaeological record of the central regions of California. These regions include the San Francisco Bay Area, parts of the Coast Ranges, and most of the Central Valley. The goal was to understand these changes within a temporal and geographical framework, so that future researchers could add to the knowledge base through intensive fieldwork and typological studies.

Early Defined Sequences

During the early twentieth century researchers (P. M. Jones 1899; N. C. Nelson 1909; and C. H. Merriam 1905) began looking critically at burial orientations and associated mortuary artifacts as an initial step to developing cultural sequences over time. In 1926, after careful documentation of private collections and excavation of nine sites in the Kern and Tulare Lake regions of the San Joaquin Valley, E. W. Gifford and W. E. Schenck produced a manuscript elaborating on a late prehistoric complex of the ancestral Yokuts (Moratto 1984:177). According to their studies, the complex contained flexed burials that were associated with Brown Ware pottery, obsidian projectile points, millingstones, mortars, and various steatite artifacts. The resulting cultural sequence, however, did not represent a great length of time, and it was later found that some of the artifacts in their sequence were of a greater antiquity than previously thought.

From 1893 through the 1930s, archaeologists J. A. Barr and E. J. Dawson excavated a copious number of sites in the Stockton area, resulting in large collections of artifacts and a substantial database. Their work provided the impetus for Dawson's later creation of a three-phased chronological system for the Delta region, namely the "Early," "Middle," and "Late" sequences defined by the comparison of various artifact forms (Ragir 1972; Moratto 1984).

J. Lillard and W. K. Purves of Sacramento Junior College derived a similar three-phased system during the 1930s. During excavations conducted in the Sacramento Delta region, it was discovered that some sites exhibited strata that showed a clear separation of temporal components. These components were distinguished by burial orientation, artifact types, and the condition of human remains (Lillard and Purves 1936; Moratto 1984). They classified these distinct components as the "Early," "Intermediate," and "Recent" cultural layers, validating much of the earlier work by Dawson.

Development of the Central California Taxonomic System (CCTS)

In 1954 Richard Beardsley refined the Sacramento Delta region sequence by expanding it to include the San Francisco Bay region. Beardsley's work, which elaborated on a continuous cultural succession as defined through years of excavation and typological analysis, gave rise to the Central California Taxonomic System (CCTS). During the advent of radiocarbon dating in the 1950s, absolute dates were correlated with the earlier developed, relative tripartite sequences (Fredrickson 1973, 1974; Moratto 1984; Ragir 1972). Before this point many researchers hesitated at ascribing date ranges for their sequences due to the lack of scientific tools of the day. The correlations made by radiocarbon dating strengthened the CCTS by dividing the system into periods associated with regionally based patterns. "Horizons" represented broad cultural traits in specific temporal sequences. Over the last several decades, attempts have been made to further refine the CCTS by investigating factors such as settlement and subsistence strategies, exchange, population movement and demographic studies, linguistic analysis, and changes to the eco-systems.

Over the years, local exceptions to the CCTS schemes and patterns were discovered. This, coupled with the advent of radiocarbon dating in the 1950s and obsidian hydration dating in the 1970s increased the accuracy of site dating, and ultimately led to many localized versions of the CCTS throughout the Central California. Given California's diverse range of ecological habitats and the complexity of cultural change with prehistoric populations, providing an overall cultural chronology for central California seemed limiting and problematic. R. Hughes discussed these limitations in his 1994 work, and his co-written contribution with J. Bennyhoff (1987), *Shell Bead and Ornament Exchange Networks Between California and the Western Great Basin*, provided a regionalized chronology based on bead and trade network analysis. The end result was a development of a series of temporally based periods, namely the *Early-Middle-Late Period* nomenclature which is still used today by South Bay archaeologists and some Central Bay archaeologists (Jones and Klar 2007).

The Central California chronological sequence was divided into the Early (2500 B.C. to 500 B.C.), Middle (500 B.C. to A.D. 300), and Late (A.D. 300 to 1840) Horizons, and looked closely at burial orientation and absence/presence of differing types of funerary goods. The Early Horizon was characterized by extended burials with a high frequency of grave associated

artifacts including quartz crystals and occasionally red ochre, *Olivella* and *Haliotis* beads, charmstones, large leaf-shaped and large stemmed projectile points, a variety of bone artifacts, and infrequent milling instruments (Moratto 1984). Middle Horizon burials were more varied in practice, being both tightly flexed and occasionally cremated. They typically contained fewer associated artifacts than the Early Horizon, but did include such items as mortars made of stone and wood, an extensive array of bone implements, heavy concave-base projectile points, and a variety of baked clay items. The Late Horizon is characterized by varied burial practices including cremations, burned burial related artifacts, small arrow-sized projectile points typically made from obsidian, high frequencies of baked clay artifacts, stone pipes, and flat-bottomed mortars (Moratto 1984).

A More Generalized Model

David Fredrickson's study of the central districts of the North Coast Ranges in the early 1970s led him to build a sequence of cultural patterns that could be placed within a framework of distinct cultural periods. These periods, he proposed, were applicable to California as a whole. The cultural patterns developed by Fredrickson were different from the concepts of previous researchers (Beardsley 1954) who tended to emphasize assemblages of material goods as the basis for their classifications. Fredrickson, taking a much broader view of recovered archaeological materials, defined the term *pattern* as "...an adaptive mode shared in general outline by a number of analytically separable cultures over an appreciable period of time within an appreciable geographic space." (Fredrickson 1973).

Fredrickson recognized that the economic/cultural component of each pattern could be manifested in neighboring geographic regions according to the presence of stylistically different artifact assemblages. He introduced the term *Aspect* as a cultural subset of the pattern, defining it as a set of historically related technological and stylistic cultural assemblages. The following is a summary of these temporal periods, now known as the *Archaic-Emergent* structure. This nomenclature is widely used by North Bay archaeologists and some Central Bay archaeologists. The temporal periods noted below describe the associated cultural patterns that have been identified for northern Solano County and the adjoining regions, and incorporates recent taxonomic and interpretative revisions that are summarized from the work of White and Frederickson (1992).

Paleo-Indian Period (10,000 B.C. to 6000 B.C.)

This period saw the first demonstrated entry and spread of humans into California with most known sites being situated along lakeshores. A developed milling tool technology may be present at this time depth although evidence regarding this technology is scarce. The social units were not heavily dependent upon the exchange of resources with trading activities having occurring on an ad hoc, individual basis.

The Post Pattern represents the earliest known occupation of the North Coast Ranges. This Pattern is documented only at the Borax Lake site, and perhaps at the Mostin site (Moratto, 1984:497). Characteristic artifacts noted in the lithic assemblages include fluted projectile points and flaked crescents. Though the artifacts representative of this Pattern have never been found in a single site context in the Solano County region, numerous occurrences of its distinctive artifacts are reported and can be affiliated with better-documented assemblages in California and throughout North America.

Lower Archaic Period (6000 B.C. to 3000 B.C.)

The beginning of this period coincides with that of the middle Holocene climatic shift to more arid conditions that brought about the drying up of the pluvial lakes. Subsistence appears to have been focused more on plant foods although hunting clearly still provided for important food and raw material sources. Settlement was semi-sedentary with little emphasis being placed on material wealth. Most tools were manufactured of local materials, and exchange remained on an ad hoc basis. Distinctive artifact types are large projectile points and the milling slab and hand stone.

The Lower Archaic Borax Lake Pattern has been identified in the North Coast Ranges during this period. The Borax Lake Aspect identified in the Clear Lake Basin is the southernmost, and closest to the site of the project area, of three identified cultural divisions to this pattern. The most distinctive typological feature associated with the Borax Lake Aspect is wide-stemmed projectile points.

Middle Archaic Period (3000 B.C. to 1000 B.C.)

This period begins at the end of mid-Holocene climatic conditions when weather patterns became similar to present-day conditions. Discernable cultural change was likely brought about in response to these changes in climate and accompanying variation in available floral and faunal resources. Economic systems were more diversified and likely included the introduction of acorn processing technology. Hunting remained an important source of food and raw materials although reliance on plant foods appears to have dominated the subsistence system. Sedentism appears to have been fully developed and there was an overall growth in population and a general expansion in land use. Little evidence is present for development of regularized exchange relations. Typologically and technologically important artifacts characteristic of this period include the bowl mortar and pestle and the continued use of large projectile points.

The Middle Archaic Mendocino Pattern assemblages originate in this period and are known to persist through the Upper Archaic and possibly into the Emergent Period. The Hultman Aspect identified in the Clear Lake Basin is the southern-most of two identified cultural divisions while the Windmiller Pattern (see below) is present to the south. The two share such basic material traits as basalt core tools, shaped unifaces, heavily worked bifaces, and thin, finely flaked obsidian knives. The Hultman Aspect is distinguished by the presence of ovate scrapers, numerous simple tools, incised or drilled, steatite plummets (charmstones), and the use of local and non-local obsidian for the manufacture of projectile points.

The Windmiller Pattern is the earliest identified cultural pattern in the Central Valley. It has been identified at several sites along the Cosumnes and Mokelumne rivers in the Delta region. *Windmiller* sites are typified by their location in riverine, marsh, and valley floor environments. Some are also situated on the top of small knolls overlooking seasonal flood plains. *Windmiller* sites are thought to have been occupied by a group of people who migrated into California from either the Columbia Plateau or western Great Basin, bringing with them an adaptation to river-wetland settings (Moratto 1984:207). Most *Windmiller* sites exhibit burials that are ventrally extended, oriented to the west, and include a high frequency of mortuary material such as fishing paraphernalia (e.g., net weights, bone hooks) and large projectile points.

Also associated with this period is the *Berkeley Pattern* that appears to have originated in the San Francisco Bay region during the Lower Archaic Period. Fredrickson in 1974 suggested that the *Berkeley Pattern*, taking the place of the Middle Horizon, helped explain riverine dominated sites in the San Francisco Bay region (and later into coastal and interior areas of Central California). *Berkeley Pattern* sites typically have very deep midden deposits stemming from years of occupation, and contain higher frequencies of milling and groundstone products for processing flora in the area, particularly acorn. Artifacts unique to the *Berkeley Pattern* include slate pendants, steatite beads, stone tubes, and ear ornaments. Although *Berkeley Pattern* sites share commonalities with *Windmill* sites, the *Berkeley Pattern* burials are distinct in their flexed posture and changeable directional orientation. *Berkeley Pattern* graves also contain far fewer mortuary artifacts (Moratto 1984). Recovered projectile points were smaller and more articulate, some of which found in shallower deposits were likely used for arrows during the late prehistoric period.

Upper Archaic Period (1000 B.C. to A.D. 500)

A marked expansion of sociopolitical complexity marks this period with the development of status distinctions based upon material wealth being well documented. Group-oriented religions emerge and may be the origins of the Kuksu religious system that arises at the end of the period. There was a greater complexity of trade systems with evidence for regular, sustained exchanges between groups. Shell beads gained in significance as possible indicators of personal status and as important trade items. This period retained the large projectile points in different forms, but the milling slab and hand stone were replaced throughout most of California by the bowl mortar and pestle. During this period, the Mendocino Pattern is present in the central and northern portions of the North Coast Ranges and the Berkeley Pattern persisted in the Central Valley, Bay and southern portion of the North Coast Ranges.

Emergent Period (A.D. 500 to 1800)

This period is distinguished by the advent of several technological and social changes. The bow and arrow were introduced, ultimately replacing the atlatl. Territorial boundaries between groups became well established and were well documented in early historic accounts. It became increasingly common for distinctions in an individual's social status to have been linked to acquired wealth. The exchange of goods between groups became more regularized with more raw materials, along with finished products, entering into the exchange networks. In the latter portion of this period (1500 A.D. to 1800 A.D.), exchange relations became highly regularized and sophisticated. The clam disk bead became a monetary unit of exchange and increasing quantities of goods are transported over greater distances. Specialists arose to govern various aspects of production and exchange.

During this period, the Augustine Pattern becomes the predominant economic/cultural manifestation in the Central Valley, Bay and southern North Coast Ranges with numerous regional aspects having been identified in the archaeological record. Cultural traits that distinguish this pattern include pre-interment grave-pit burning, tightly flexed burials and cremation. Artifact assemblages include clam and Olivella shell disk beads, magnesite cylinders, and banjo type Haliotis ornaments, as well as bird bone whistles and tubes and flanged steatite pipes. The mortar and pestle are the predominant milling implements and small arrow points replaced the larger projectile point forms more commonly associated with atlatls (spear-

throwers). Also found in the tool assemblages were implements such as harpoons, bone fish hooks and gorge hooks.

Ethnographic Setting

The APE is situated in the traditional ethnographic territory of the Patwin. The Patwin, which means “people” in their own language, are also known as the *Copeh* or *Southern Wintun*. At the time of initial contact between European explorers and Native Americans, they resided mainly in what are now known as Solano, Yolo, and Colusa counties (see Figure 3), and shared territorial boundaries with many different Native American groups. The Nomlaki to the north referred to the Patwin as *noymok*, or “south people”, while the Yuki to the northwest referred to them as the “Little Stony Creek Patwin” who had contact with *Ku’mnom*, or “salt people” (Johnson 1978: 358-359).

The Patwin territory took an approximate geographic expanse of 90 miles north-south by 40 miles east-west. They were known to have lived on the east side of the Coast Range, along the foothills east of Clear Lake. Suisun Bay acted as their southern boundary, providing a Delta tule marsh habitat full of biota to exploit. From Suisun Bay to the confluence of Feather River and the lower Sacramento River, the Patwin eastern boundary existed near the west banks of the Sacramento River. From this point to several miles north of the modern day City of Princeton, the Patwin lived on the banks of both sides of the Sacramento River, but west of the Sutter Buttes (Johnson 1978:350-351). North of Princeton early peoples were differentiated culturally and linguistically as being Nomlaki.

The Patwin belong to the Penutian linguistic stock, which has been divided into five languages one of which consists of the Wintun group which would have been spoken by inhabitants of the Project APE. The Wintun language group, present on the west side of the Sacramento Valley, is further divided into three distinct dialects, namely the Wintu to the north, the Central Wintun (Nomlaki), and the Southern Wintun (Patwin) (Heizer and Elsasser 1980:14). Due to the three groups sharing linguistic and cultural traits, they were all originally considered to be Wintun. As ethnographic research continued, however, early ethnologist Stephen Powers in 1877 discovered that the Nomlaki and the Patwin were culturally distinguishable (Johnson 1978:350). As their own cultural group, the Patwin were further divided into the Hill Patwin and the River Patwin. The Hill Patwin settled in areas along the Coastal Range foothills to the west. The River Patwin settled along the Sacramento River and various valley creek drainages (and Suisun Bay). Owing much to the fishing grounds, the highest populated areas were in villages around the Sacramento River and local stream courses. According to some of the early works by Alfred Kroeber (1932) the total population estimate for the Patwin, Nomlaki, and Wintu before historic contact was around 12,500 (Johnson 1978:352).

The main political unit for the Patwin was the tribelet, which consisted of the inhabitants of a primary village and several satellite villages settled around drainages. The Patwin typically lived in semi-subterranean, earth-covered structures that were oval in shape (Johnson 1978:357-358). Near riparian zones tule was also utilized to create various dwellings. Being autonomous, the tribelet held a specific territory and was led by a chief who directed most of the economic and ceremonial activities. The status of chief was typically inherited from father to son (Johnson 1978:354).

One of the most unusual aspects of Patwin culture was the *kuksu* cult. The *kuksu* cult, though found throughout California, seems to have originated with the Patwin. Kroeber (1925) wrote that the *Kuksu* cult was far more evident with the Patwin and took greater elaboration than other tribes in California (Kroeber 1976: 364-365; Johnson 1978:353). The *Kuksu*, or “big-head”, consisted of the manifestation of one or more secret societies, each of which had a series of rituals and dances. Kroeber (1976) characterizes the *Kuksu* as a secret event designed specifically for initiation of 8 to 16 year-old boys. The Patwin boys were ritually captured, brought into a dance house, and taught the ways of the cult. As a way to stress initiation, the boys would learn dances and how to employ secret medicine and ritualistic curing acts. Women and small children were not allowed to be members.

According to Powers (1877), the typical California Native American diet consisted mainly of acorn, fish, and small seeds (Heizer and Elsasser 1980:83). The Patwin were foragers who exploited three main physiographic settings in which they settled (i.e., riparian, grassland, and Coast Range foothills). The hunting of terrestrial game such as tule elk, deer, antelope, and bear, was considered important, but it was subsidiary to collected foods that could be stored year round. The collection of acorn as a food staple consequently became central to Patwin way of life. They harvested acorn annually from valley oak and mountain oak trees within their tribelet territory (Johnson 1978:355). Acorn by itself is not edible due to the bitter tannins inside the nut, but like many other California Native American groups, the Patwin processed acorn by first grinding the nuts into flour using bedrock mortars and pestles, and other types of milling instruments. Then the acorn flour was water-processed to leach out the bitter tannins, making the flour usable for making mush or bread (Heizer and Elsasser 1980:91-93; Johnson 1978:355). As with the various seeds collected along the Central Valley grasslands (sunflower, clover, bunchgrass, and wild oats to name a few), acorn was stored in baskets to be used during other months of the year (Johnson 1978:355).

Using nets and weirs, the River Patwin caught a variety of fish from local rivers and tributaries, including salmon, sturgeon, pike, perch, chub, sucker, hardhead, trout, and possibly steelhead (Johnson 1978:355). Along the banks the River Patwin also dug for freshwater mussels and hunted a variety of waterfowl such as ducks, geese, and quail. Much like the Ohlone to the south, River Patwin utilized tule boats to better their riverine exploitation.

In general, Patwin lifeways remained unchanged for thousands of years prior to the arrival and sustained settlement of Euro-American populations. The imposition of the Mission system, confiscation of lands, and spread of diseases to which the Patwin had little or no immunity decimated the people and threatened to completely wipe out their population and culture. Today, however, the Patwin are reinvesting in their community and traditional culture and world-view through new-found political, economic, and social prominence.

Regional Historic-era Setting

The Sacramento-San Joaquin Delta region has been heavily modified by agricultural activities and flood control since the mid-nineteenth century. The natural and man-made landforms in the area today bear little resemblance to the appearance of the region when it was first seen by Euro-Americans in the early 1800's. The earliest recorded European explorations in the vicinity of Calhoun Cut occurred in 1806 and 1808. Two expeditions led by Alferes Gabriel Moraga and Father Pedro Munoz passed through the region in search of sites suitable for the establishment of

missions. The first expedition departed from San Juan Bautista Mission and was led by Moraga and Munoz, who named and crossed the San Joaquin River and continued northward to the Calaveras River. Moraga visited the Delta vicinity again in 1808 and penetrated the Sacramento Valley to the Marysville Buttes area before returning to explore the delta margin between the Mokelumne and Stanislaus Rivers (Thompson 1957: 94).

Despite these exploratory efforts during the period between 1806 and 1812, no suitable mission sites were found near the Delta. These early explorations were peaceful in nature and did much to extend the findings recorded by exploratory ventures that occurred between 1772 and 1776. Ultimately, the Spanish gained nothing from their efforts and the contemplated interior missions failed to materialize. By 1813 and in the following three decades, Spanish expeditions in the region assumed a purely military character. These explorations took on a more violent course due to the pursuit and capture of local indigenous people who escaped from the coastal missions (Thompson 1957: 96).

Other notable expeditions into the Delta occurred during the 1820's when trapper Jedediah Smith ventured into the San Joaquin Valley. Other notable ventures included that of Peter Ogden of the Hudson's Bay Company who explored the Sacramento Valley and the Delta as far south as Stockton.

Euro-American settlements in the Delta area were initially situated on naturally-formed levees created by the merging of flood plains and tidal environments. Most of these early settlements consisted of farm labor camps and single-family farms. In the central Delta area, sediments consisted primarily of peat, resulting in poorly-developed natural levees. Recognizing the agricultural value of the delta soils but hampered by the near-constant inundation, efforts at land reclamation began shortly after the Gold Rush. The earliest attempt at reclamation and levee construction in the Delta occurred in 1852 on Merritt Island on the east bank of the Mokelumne River (Thompson 1957: 211). Most early levees, including the first construction on Merritt Island, were referred to as "shoestring levees" which were often haphazardly constructed and offered little protection from periodic high tides. Typically, levees constructed in the 1850s and into the 1870s remained intact for one or two years on average and required frequent maintenance and upgrades.

In addition to inadequate local materials and substandard engineering techniques, the early years of levee construction were disorganized. Often one track with higher levees would cause an adjacent tract with lower levees to flood. Some of the early levees in the Delta region such as Union Island, constructed in the 1870s, were different from others in the area as they began as rather large structures averaging 50 feet in basal width, 8 feet in height, and were set back 200 feet from the rivers. Most of the early levees in the Delta region, on the other hand, were much smaller and were expanded as the need arose on a virtually seasonal basis (Thompson 1957).

Local Historic-era Setting

Delta Land Reclamation

A great period of land reclamation began in the late 1860s as economic investment in the area increased. This reclamation trend peaked between 1870 and 1880 when approximately 92,000 acres of Delta lands were reclaimed and numerous levees were constructed. In the period between 1910 and 1920, this number was surpassed when an additional 94,000 acres were reclaimed. The establishment of large reclamation companies, such as the Tide Land Reclamation Company and the Glasgow-California Land and Reclamation Company, in addition to technological advances in both pumping and dredging, were key factors in fostering large-scale reclamation programs (Thompson 1957: 242).

Farming in the Delta Region

Rich fertile soils have historically resulted in high productivity within the Delta region. The area is also flat and conducive to agricultural modifications to the land such as grading, the excavation of ditches, irrigation, and work with mechanized equipment given the lack of hardpan, gravels, or rock. Additionally, the soils in the region are rich in nitrogen, and initially the application of fertilizer was not required (Thompson 1957: 307). The following sections constitute a synopsis of the historical farming practices within the Delta:

The Early Period

Early farming in the Delta region consisted primarily of subsistence gardening during and after the Gold Rush. This subsistence farming was fostered by the proximity of the region to the markets located in San Francisco and the mines of the Sierra Nevada foothills. Initially, the primary crops were tended by people of various nationalities on higher lands such as natural levees and rises, and consisted mostly of potatoes, onions, and beans as well as other perishable crops. Beef cattle were grazed in the tule swamps in the summer months. Fruits, grains, and dairy products were also profitable commodities originating in the Delta in the middle to later decades of the 1800s (Thompson 1957: 309).

The growth of agriculture in the Delta region was steady, and by 1852 the banks of the San Joaquin River were entirely occupied by small-scale farming operations. In the late 1870s market gardens near Stockton were competing for the San Francisco produce trade that had been dominated by the Santa Clara Valley and other areas located in the Bay Area periphery. By the early 1880s, large amounts of vegetables were moving to San Francisco with a day's harvest picked up by steam ships which landed in the city the morning after harvest from the nearby fields and orchards.

By the 1870s, when the reclamation efforts by land development companies were at their peak, the region flourished and various farming projects became associated with diverse ethnic groups. Chinese immigrants became specialists in row crops such as potatoes, while Italian and Portuguese tenant farmers along with the Chinese were identified with garden or truck farming (Thompson 1957: 309). American-born settlers tended to gravitate towards grain and orchard

production as well as livestock husbandry. Generally, these Euro-American residents lived on the mainland and the “islands” located within a mile of the river. Their houses were often constructed atop alluvial prominences amidst the grain fields in the region. Some of these farm structures were built by land developers as base camps for land clearing and reclamation crews.

Also in the 1870s, large-scale irrigation began to be developed and employed. Initially, water was delivered through tidal gates and drainage ditches. The tenant farmer was responsible for maintenance of these irrigation systems, while incorporated reclamation districts were typically responsible for maintaining the drainage systems. Although there was large-scale irrigation in the region, the majority of land in the Project was without irrigation as late as 1898 (Thompson 1957: 311).

The Growth Period

The transition of the Delta region from garden to field agriculture is primarily a twentieth century phenomenon (Thompson 1957: 312). While large expanses of agricultural land continued to be reclaimed, the catalyst for the expansion in production appears to have been the introduction of electric pumps which were in wide use by 1905. These pumps replaced the previousl- used steam-powered and horse-powered devices. Electricity was provided to the area by a network of transmission and distribution lines, the construction of which peaked in the period during 1911 and 1915.

Early in the twentieth century, the majority of the Delta acreage was planted in barley, with potatoes being the most valuable crop, followed by beans and then asparagus. The common crops produced in the region included onions, field corn, celery, sugar beets, sweet potatoes, flax and flaxseed, wheat, alfalfa, and rye (Thompson 1957: 313). A change in earlier farming practices occurred after World War I when small family operations quickly gave way to heavily industrialized farms. Increases in mechanization, the use of contract day labor rather than sharecropping, increased use of manufactured fertilizers, and a departure from a traditional potato-beans-barley rotation, were all key factors in the industrial farming boom.

Large-Scale Agriculture

During this time period, winter grain and asparagus ranked first and second among Delta crops in terms of total planted acreage, followed by alfalfa and corn. However, large concentrations of beans continued to be grown in the region in 1924 but gradually declined after that year. Mechanization continued to grow in popularity and led to increased agricultural production. The increased use of commercial fertilizers also facilitated this increase. While the markets expanded in terms of volume, the same basic crops continued to be grown in the Delta and have been for the past 150 years. Prior to World War I, laborers were usually of Japanese, Chinese, and Indian descent, with Filipino and Mexican nationals dominating the workforce after the war. (Thompson 1957:339). This pattern of shifting demographics in the labor force mirrors the trend seen in the 1880s when various ethnic groups worked on constructing the canals and the levees that made the Delta region one of the most important agricultural centers in the United States.

Patrick Calhoun and the Solano City Land Bust

Consistent with the general trend during the Growth Period, the town of Solano City was planned to accommodate field agriculture operations in the vicinity of Calhoun Cut. Solano City was touted as the first city on the West Coast to be planned in detail before being built. However, the Solano City project would never materialize and will always be remembered as one of the biggest land busts in California history (Eberling 1996). While large expanses of agricultural land were reclaimed for agriculture in the Delta region during the same time period, in contrast, Solano City and the Calhoun Cut area represent the collapse of the American dream rather than agrarian prosperity. In hindsight, Solano City was a magnificently planned community. It was planned to house 75,000 residents with a canal extending to the Sacramento River and railroad access to the rest of California. During the time that the city was planned, Solano County had only 25,000 residents (Bowen 2000: 23). Had the promoters of Solano City been successful, it would have been Solano County's largest city and would have likely developed into an agricultural and commercial hub in the area.

The history of Solano City and Calhoun Cut is inextricably linked to Patrick Calhoun, the grandson of former United States Vice President, John C. Calhoun. He was once described as a "pudgy middle-aged business tycoon with a stern face and drooping white mustache," who, "wanted more money for himself and his company." (Eberling 1996). Calhoun was one of the town's main promoters, and unlike his distinguished ancestor, would be remembered for his greed and dishonesty rather than serving his fellow man. Calhoun came to Solano County to recoup the losses he suffered defending himself against bribery charges while head of United Railroads. In 1905, a movement to develop a fully electric train complex using underground electric systems was well underway in cities like San Francisco. United Railroads, which owned a cable car business in San Francisco in the early 1900s, was insistent on using the universal overhead electric trolley line. Overhead lines were much cheaper to build but were not as esthetically pleasing. Additionally, United Railroads refused to reduce the fares if the less expensive system was approved. The company did donate \$200,000 to the city to develop its parks. This gesture would prove to be more self-serving than altruistic because the company would receive their money back many times over in fares from park visitors (Bowen 2000: 23).

The earthquake and fire of April 1906 temporarily suspended transportation on the cable cars. Although damage to the various cable slots was not serious, the company reported otherwise in an attempt to force the acceptance of the overhead lines that it favored. In fact, the cable cars could have been carrying passengers within a month of the disaster. Nonetheless, no passengers were carried on these lines for many months after the earthquake because United Railroads would not release information on the true condition of its infrastructure (Bowen 2000: 23). Regarded as the mastermind of the fraudulent scheme, Calhoun was indicted, tried, and acquitted of the charges against him. Although he prevailed in the courtroom, his legal troubles resulting from the United Railroads scheme would cost Calhoun most of his fortune, and forever cast a shadow upon his reputation. In spite of this dubious reputation, the position of executive manager of the Solano City project was placed in his hands (Bowen 2000: 24).

In 1913, the Vacaville Reporter announced plans for a "New town of Solano." Surveys and plat maps were completed and construction began. The city was to occupy 1,500 acres across Highway 12 from Denverton, located at the southwest corner of Solano City and between Creed and Lambie Roads. Along with the many residences scheduled for construction, the proposed

amenities included a 50-room hotel constructed of fireproof concrete, a bank, telephone service, water, lighting, and a post office. The project was on a fast track to completion and well promoted. One of the primary investors in the project, M.H. DeYoung, was the founder and owner of the San Francisco Chronicle and had recently purchased the San Francisco Call. Undoubtedly, Solano City received positive publicity through advertisements in these publications (Bowen 2000: 24).

The company of Solano Irrigated Farms was formed and filed its Articles of Incorporation in Solano County on December 4, 1912, with the final approval being filed on January 22, 1913. The corporation was to have a life of 50 years with \$2,500,000 in preferred stock, and \$5,000,000 in common stock at \$100 per share. The newly-formed company began making major land purchases throughout eastern Solano County. The purchase by Solano Irrigated Farms included land from Elmira to Collinsville along existing railroad lines and from the Suisun area to the Sacramento area near Rio Vista. Total land holdings included about 175,000 acres including approximately 17 miles worth of land adjacent to existing railroad lines (Bowen 2000: 23). Having control of the land along the railroad meant access to the rest of northern California via railroad and increased commercial prosperity in the area.

In April of 1913, Solano Irrigated Farms bought additional land along the Oakland-Antioch railroad line and announced that a canal was being dredged from the Sacramento River to Solano City, a distance of 9 miles with a width of 75 feet, and a depth of 17 feet. The first 700 acre reservoir was to have water by May and construction on a temporary hotel capable of housing 140 people was nearly complete. The following week Solano Irrigated Farms reported that the dredging was complete. Solano City was planned to have such features as a business district and a waterfront that could receive boats from San Francisco (Eberling 1988). The canal was designed so that ships could dock at Solano City, load or unload, then return to the Sacramento River with having to turn around (Bowen 2000: 25). On July 18, 1913, Solano City was announced as, "The next real estate sensation on the market," and, "the greatest city ever planned." Many people hurried to invest in this ambitious but ill-fated land scheme (Bowen 2000: 23).

Solano Irrigated Farms began showing property to potential buyers on June 9, 1913, with initial sales at the Stewart corner and Denverton extending almost to Suisun. In addition to the good press the project received from the San Francisco publications, The Solano Republican urged Suisun to take advantage of the project in an editorial (Eberling 1988). On August 17, 1913, an estimated 1,000 people arrived to look over the Solano City location. More than 80 autos shuttled people from Suisun City on primitive roads to view and buy land in the "greatest city ever planned." Project promoters claimed buyers had spent a total of \$1,000,000 on farm sites and building sites in Solano City although it is unclear just how many people had bought land (Eberling 1996).

The project came to an abrupt halt on October 17, 1913. Having overextended themselves, the project promoters could not pay their bills including notes and mortgages that were due on October 1, 1913. Solano Irrigated Farms was immediately placed into receivership and the town of Solano City died a quiet death almost overnight. At this point, the Solano City project had spent \$616,000 on land, \$450,000 on irrigation development, and \$132,000 on equipment for a total of almost \$1.2 million. About 300 creditors met in San Francisco on November 7, 1913 to discuss how to get their money back (Eberling 1996). In January of 1914, Paul Foster and

Patrick Calhoun attempted to revive the project but were ultimately unsuccessful. Instead of representing a triumph in American urban planning and land reclamation, the Solano City project would become an historical side-note and bear the brunt of countless jokes by local residents. Railroad officials were purported to tell trainmen not to laugh when passengers wanted to get off at Solano City (Eberling 1996). Only the second city in America planned beforehand from start to finish, Solano City will always be known as an ambitious but ultimately doomed undertaking.

Patrick Calhoun, the Solano City project's dubious promoter and the namesake of the Calhoun Cut, filed bankruptcy in 1916 and vanished into obscurity only to surface again in the 1930's with the fortune he made in San Joaquin Valley oil. In 1943 the final chapter in the Solano City saga was written when, at the age of 87, Calhoun was struck and killed by a taxicab in Pasadena while crossing the street (Bowen 2000: 26). Like the Solano City project, Calhoun died a sudden and unceremonious death. The only monument from Calhoun's dream community that remained after the project failed was the shell of a train station, now gone, along the Oakland Antioch & Eastern route (Eberling 1996). Today, between Creed and Hastings Roads, Highway 113 crosses a portion of the canal that bears Calhoun's name. The surrounding area on the Rio Vista side of the road has been designated as the Calhoun Cut Ecological Reserve.

RESEARCH METHODOLOGY

Records Search and Literature Review

On November 12, 2007, SAS submitted a records search request to the Northwest Information Center (NWIC) at Sonoma State University. The NWIC conducted a search (NWIC file No. 07-0715) of the California Historical Resources Information System for data on known archaeological sites, studies, and isolates within a half-mile radius of the project APE (Appendix A). In addition, the NWIC reviewed the following documentary sources:

- *National Register of Historic Places* (Historic Properties Directory, California Office of Historic Preservation 2002);
- *California Register of Historic Places* (Historic Properties Directory, California Office of Historic Preservation 2002);
- *California Historical Landmarks* (California Office of Historic Preservation 1996);
- *California Points of Historical Interest* (California Office of Historic Preservation 1992);
- *California Inventory of Historic Resources* (California Department of Parks and Recreation 1976) and;
- other pertinent historical inventories including historic maps (USGS 1908a & 1908b; Thomas Brothers 1946; CF Weber & Co. 1914; Map of Solano County 1877; and Henning 1872), GLO plats (1853, 1862), and soil survey maps (Bates 1977).

According to the NWIC, four prehistoric archaeological sites lie within or immediately adjacent to the APE. These consist of CA-SOL-1, CA-SOL-2, CA-SOL-3, and 4; CA-SOL-5, CA-SOL-347, and CA-SOL-348 lie within a half mile radius of the APE, and unfortunately, there are multiple locations recorded for CA-SOL-1. There are three sources of information on the location of CA-SOL-1 through 4, including 1) a map from the NWIC illustrating the site locations, 2) UTM coordinates that were penciled on to the original site records (presumably by the NWIC), and 3) brief descriptions from the original site records. The brief descriptions are as follows: CA-SOL-1, CA-SOL-2, and CA-SOL-3 were recorded on the south bank of Lindsey

Slough, with burials and grayish midden containing associated funerary artifacts and high concentrations of obsidian flaked stone. CA-SOL-4, recorded on the north bank of Lindsey Slough, had no description on the site record. An important note is that all of the original site records for CA-SOL-1 through 4 indicate that the sites were situated at the 5-foot contour line, which according to the USGS Dozier topographic map (1951) places the sites right at the edge of Lindsey Slough.

The original site records for CA-SOL-1 through 4 are one-page documents completed in 1948 that contain limited locational data, i.e. there were no UTM coordinates (taken by the recorders), no site boundaries, and no site dimensions, instead each was noted with a single dot on a map (site records are in Appendix A). Given the many cuts and bends along Lindsey Slough and the limited visibility of the surrounding landscape due to thickets of riparian flora, the 1948 field crew likely had difficulty trying to establish precise locations of these sites. The multiple locations of sites CA-SOL-1, for example, are as far apart as 600-700 meters. **The mapped locations of sites CA-SOL-1 through 4 provided by the NWIC, therefore, should be considered tentative and imprecise.**

In his M.A. thesis Caplinger (1999) summarized CA-SOL-1 through CA-SOL-4 as being mound sites containing human interments dating back to 2500-1577 B.C. Known as the *Peterson Mounds* due to their location on the Peterson Ranch, these mounds were described by Robert Heizer as possibly being a tribelet center (1999).

Archaeologists from the University of California, Berkeley and San Francisco State College investigated three of the Peterson Mounds (CA-SOL-1, SOL-2, and SOL-3) between 1946 and 1949. CA-SOL-2, the largest of the three, was found to be a multi-component site with a Middle period occupation that spanned the Terminal through Late Middle periods (A.D. 575-1010) with a subsequent occupation during Phase 1C through Phase 2A of the Late period (A.D. 1390-1700). According to Heizer (1948), CA-SOL-2 consisted of an approximate 2.1 meter deposit at the mound's apex, with un-stratified dark midden soil lying above native clay. The mound was also capped with native clay for reasons unknown. Heizer found that midden constituents included multiple (>45) human interments (flexed in the photos shown, 1948:10), and temporary encampment features containing baked clay cooking stones, fire-affected stone, hearths, and freshwater mussel concentrations. Copies of notes and letters from the Heizer 1948 manuscript elaborate on specific details of the CA-SOL-2 burial mounds and their immediate landscape. According to Heizer (1948: no page number):

“The general surrounding area is of the salty marsh type with a good proportion of the area inundated for prolonged periods. In the soils of very poor aeration the dominant cover was [word unreadable] and sedges with allied hydrophyllous plants. In the immediate vicinity of the mounds a slightly better drainage was evident but [word unreadable] a high concentration of salts. Here the [word unreadable] was the salt grass with other halophytic plants. The mounds being of a higher elevation were better drained and root networks could remain near the surface and avoid a semi-saturated soil.”

Additionally, the original site record for CA-SOL-1 describes the erosion at the site as being “slight; covered in 6” of clay in a flood since 1850” (Riddell 1948a). This clearly indicates that CA-SOL-1 is in the flood zone. Ethnographically, past Native Americans utilizing digging sticks to move soil would have preferred softer, saturated soils to build the mounds with.

Given the facts above, CA-SOL-1 through 4 were situated on the floodplain and subject to periodic inundation and alluvial Holocene deposits. The burial sites were likely built as mounds to be higher elevated and less subject to soil saturation and erosion.

CA-SOL-1 also exhibited evidence of occupation during these same phases (Heizer 1948) as CA-SOL-2. CA-SOL-3 was also a Late period occupation mound occupied from Phase 1C through Phase 2A, and likely extended into Phase 2B (A.D. 1390-1720) (Treganza and Cook 1948).

According to the NWIC, a total of eight archaeological surveys have been previously conducted within and immediately adjacent to the Project APE (Table 1):

Table 1. Previously-Conducted Studies within and Adjacent to the APE		
NWIC Study #	Study	Identified Sites
5207	PG&E's Canadian Gas Line in California	1
12300	PGT-PG&E Pipeline Expansion Project	223
23674	PGT-PG&E Pipeline Expansion Project	14
17298	Testing and Evaluation of Historic Properties along PGT-PG&E Pipeline	151
22464	Williams Communications Fiber Optic Cable Installation Project	4
7897	Quantitative Investigation of Aboriginal Sites	1
7898	Quantitative Investigation of Aboriginal Sites	2
17835	Biological Distance of Prehistoric Central California Populations	27
Source: NWIC 2007 compiled by SAS 2011		

Studies S-7897, 7898, and 17835 documented CA-SOL-1, CA-SOL-2, and CA-SOL-3, while the others identified a wealth of prehistoric resources throughout much of the Delta region. Eight additional studies were previously conducted within a half mile radius of the APE

Table 2. Previously-Conducted Studies within One Half-Mile of the APE		
NWIC Study#	Study	Identified Sites
5171	Solano County Feasibility Study	0
5167	Cultural Resources Study of the North Bay Aqueduct Alignment Alternatives	3
23946	Cultural Resources Inventory for Panda Energy Peaking Power Plants	0
15174	Cultural Resources Study of the Proposed Lambie Industrial Park	1

	Site	
16207	Phase-1 Surveys of Main Line Valves in California	1
16051	Properties Treatment Plan, PGT-PG&E Pipeline Expansion Project	72
6922	Archaeological Reconnaissance, North Bay Aqueduct Alternative Alignments	0
19938	Addendum Archaeological Assessment within Reclamation District 2060	0
Source: NWIC 2007 compiled by SAS 2011		

Native American Consultation

On behalf of the U.S. Army Corps of Engineers, on November 12, 2007 SAS sent a letter and APE map depicting the Calhoun Cut Ecological Reserve Project APE to the Native American Heritage Commission (NAHC). The letter requested a search of Sacred Lands File for lands within and near the APE, and a list of Native American individuals and tribal organizations that might have an interest in or concerns with the proposed Project (see Appendix B). On November 20, 2007, Ms. Debbie Pilas-Treadway of the NAHC replied in a faxed letter that the “record search of the sacred land file has failed to indicate the presence of Native American cultural resources in the immediate project area.” Ms. Pilas-Treadway also supplied a list of Patwin tribal representatives for Project consultation. On November 28, 2007, the following individuals were informed by mail of the proposed Project:

- Kesner Flores (Cultural Resources Specialist, Rumsey Indian Rancheria of Wintun)
- Elaine Patterson (Chairperson, Cortina Band of Indians)
- Karen Flores (Vice Chairperson, Cortina Band of Indians)
- Marshall McKay (Chairperson, Rumsey Indian Rancheria of Wintun)
- Wayne Mitchem (Chairperson, Colusa Indian Community Council)
- Leland Kinter (Native Cultural Renewal Committee, Rumsey Indian Rancheria of Wintun)
- Cynthia Clarke (Native Cultural Renewal Committee, Rumsey Indian Rancheria of Wintun)
- Wintun Environmental Protection Agency.

On April 2 and April 30, 2008, SAS telephoned all of the Native Americans from the list above to ensure their involvement with the project.

On April 2, 2008, Kesner Flores stated that due to the age of the existing documented archaeological sites within and near the APE, the subsurface deposits should be closely examined. Mr. Flores also stated that he would like a copy of any mitigation plans, and that SAS recommend responsible treatment for discovered sites or walk away from the project. On April 2, 2008, Michelle La Pena, representing the Rumsey Indian Rancheria of Wintun, stated that she would like to be informed should any sites be found. On April 30, 2008, SAS telephoned Ms. La Pena and left a message informing her of the inventory finds.

Field Methods

From April 8-11, 2008, SAS archaeologists conducted a pedestrian survey of the Project APE's area of direct effect determined previously by the Team. SAS archaeologists included Jason Coleman, C. Jesse Phillips, Matthew Rives, and Anthony Flores. Given the nature and configuration of the APE, formal 10-meter transects could only be walked in zones marked for disposal areas (from previous project design). Road construction areas were surveyed by two archaeologists walking up and back through the road destination. The majority of the APE included the actual Calhoun Cut slough and its northerly and southerly branches. Archaeologists walked a 100 foot corridor from all sides of the slough banks, which were inspected very carefully for cultural materials (Figure 5). Due to extremely dense vegetation on the ground surface in the eastern side of the APE, machetes were employed to open paths into the riparian thickets of tule. Even with the machetes, however, surveyors could not penetrate into the thickets sufficiently in some areas. When able, archaeologists scraped aside vegetation every 10 meters to inspect the ground surface. Approximately 30% of the overall APE could not be surveyed due to the extreme vegetation and overall ground surface visibility in the Project APE ranged from 0-30%.

Digital photographs were taken of the survey area, and observations were thoroughly documented. A *Garmin Venture Etrex* Global Positioning Unit was utilized to verify project area location.

FINDINGS

Due to the presence of dense tule thickets and riparian vegetation on the eastern side of Calhoun Cut, CA-SOL-1, CA-SOL-2, CA-SOL-3, and CA-SOL-4 could not be relocated at the locations provided by the NWIC, though unclear mapping indicates that CA-SOL-1 and CA-SOL-2 may be situated within the APE. After following the UTM coordinates and the locations listed on the NWIC record search map, archaeologists still could not penetrate far enough into the tule thickets to verify the sites' locations and status (Figure 5).

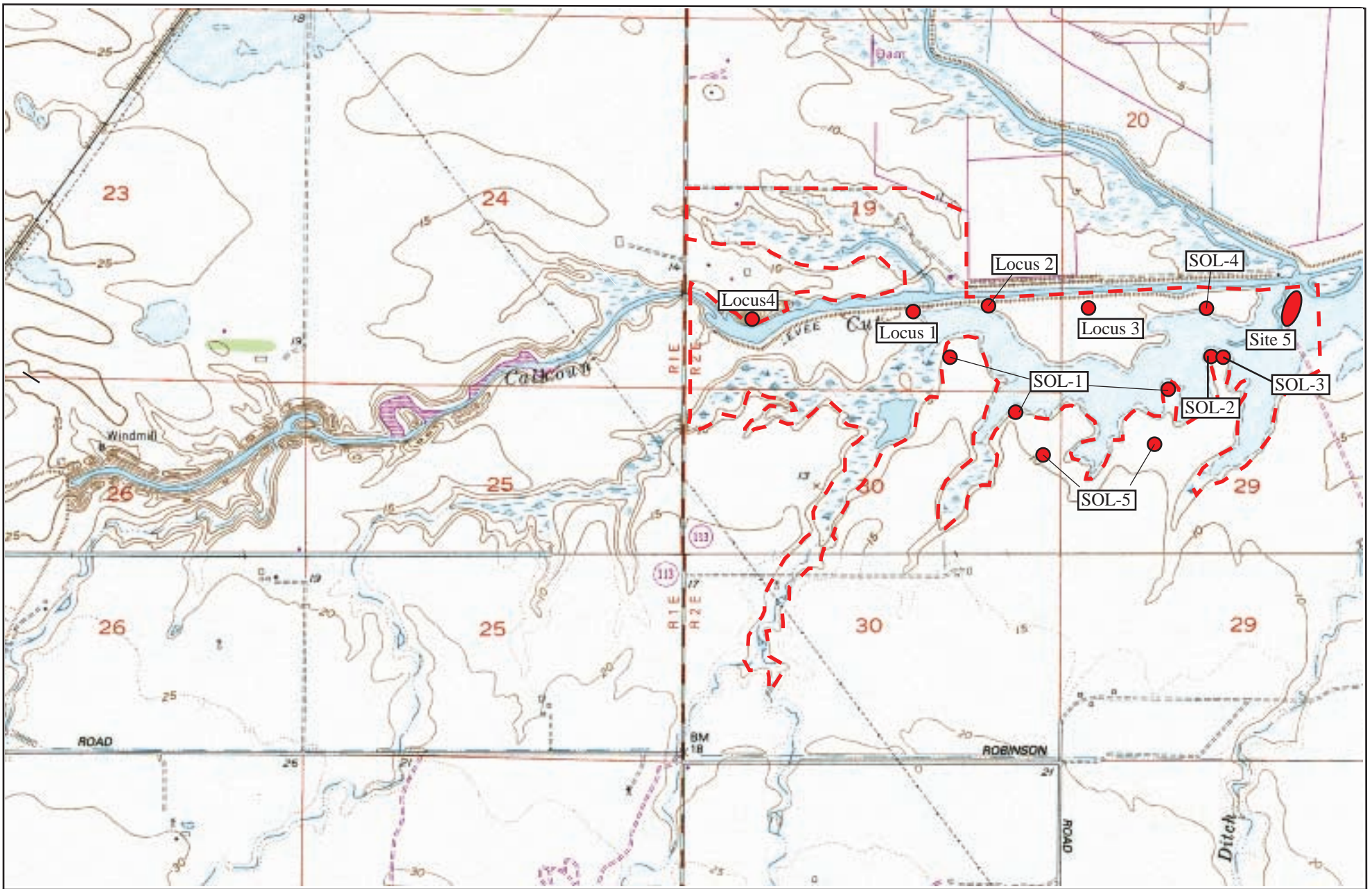


Figure 5. Survey Coverage Map.

USGS Dozier Quadrangle,
California, 7.5 Minute Series,
1951, Photorevised 1968

--- = Delineation of Cultural Survey

Solano Archaeological Services

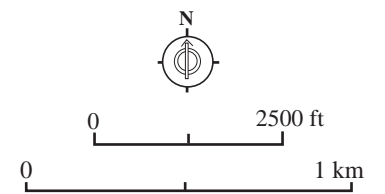




Figure 6. Riparian flora thicket

Four loci containing suspicious darkened soil, charcoal, freshwater shell fragments, and faunal bone were discovered by SAS along the Calhoun Cut embankment and existing access roads (Figure 5). These locations are summarized below:

Locus 1 -- Found along the banks of an existing access road heading eastward, darkened soil deposits were identified and were found to contain shell and charcoal fragments. Much of the road has already impacted the deposit, and the darker soils can be seen eroding downhill toward the south.

Locus 2 -- This location consists of an elk bone fragment found associated with dark soils (Figure 7). The faunal bone exhibited spiral fracturing, and lies south of the access road cutting into the encapsulated island of Calhoun Cut.

Locus 3 -- Along the southern banks of Calhoun Cut, there are a series of mounds that were the result of dredging the Cut in 1919. One mound lies offset (south) from the rest and unlike those resulting from Cut dredging, contains dark soils with shell and charcoal. A single Franciscan chert nodule was found here as well. The mound was covered in grass but much less dense than in adjoining areas.

Locus 4 -- Along the north bank of Calhoun Cut and east of Highway 113, a small mound can be seen which includes dark soil with shell and charcoal fragments. The mound is situated on the slough bank and is the only mound in the area.



Figure 7. Elk bone – Location 2

As Loci 1-4 are close to, and may be part of the linear dredge piles created during the construction of Calhoun Cut, though it is now impossible to be sure without archaeological testing. If they are, they may represent site soils excavated and re-deposited during dredging. Without unequivocal evidence (i.e. cultural artifacts), these loci have not been designated as formal cultural resource sites.

Prehistoric Site 5

This is a large site along the eastern banks of Calhoun cut, within the APE. Much of the site lies on an existing access/levee road (Figure 8) that meanders along the edge of the slough. Midden soils are distinct, containing a light brown, crumbly matrix exhibiting fragments of charcoal. Approximately ten basalt flakes and two basalt tools (Figure 9) were identified on the site. The site area measures approximately 300 meters north-south and 100 meters east-west. Riparian vegetation covers much of the site adjacent to the slough, while the west side opens up to cattle-grazing country.



Figure 8. Prehistoric Site 5 - Access Road



Figure 9. Prehistoric Site 5 - Basalt tool.

Calhoun Cut was also noted as a historic-era resource and is summarized below. This site was formally recorded on DPR record forms (Appendix C) and is summarized as follows:

Calhoun Cut

The most notable cultural resource in the Project APE is Calhoun Cut. Calhoun Cut (Figure 10) is a historic-era landscape/water conveyance feature. Stemming from the Lindsey Slough tidal

system, Calhoun Cut was artificially cut in 1913 to a depth of 13 feet to allow shipping access to proposed but never built Solano City (Goerke-Shrode 2002).



Figure 10. Calhoun Cut

NRHP ELIGIBILITY RECOMMENDATIONS

Because they may be affected by the proposed project, NRHP eligibility recommendations are discussed here for CA-SOL-1, CA-SOL-2, CA-SOL-3, CA-SOL-4, the newly-identified Prehistoric Site 5, and Calhoun Cut.

CA-SOL-1

This site was recorded by Riddell in 1948 as an occupation and burial site with gray midden, located north of Lindsey Slough. The record notes that Treganza and Riddell removed six burials, and that obsidian projectile points, an antler tine, and obsidian scrapers were found at the site. Information available concerning this site is fairly minimal and it could not be relocated during the SAS archaeological survey. However, the presence of burials, midden, and occupation debris suggest that there is data potential available at the site and therefore, CA-SOL-1 is recommended as eligible for listing on the NRHP.

CA-SOL-2

This prehistoric resource was also recorded by Riddell in 1948 as an occupation and burial site on the border of Lindsey Slough; the record notes that excavations in 1947 and 1948 resulted in the removal of many burials and cremations, with charmstones, obsidian projectile points and mortars. Information available concerning this site is fairly minimal and it could not be relocated during the SAS archaeological survey. However, the presence of burials, midden, and occupation

debris suggest that there is data potential available at the site and therefore, CA-SOL-2 is recommended as eligible for listing on the NRHP.

CA-SOL-3

Originally documented by Treganza in 1946, the Sacramento State College Archaeological Site Survey Record notes that this site was “completely excavated” by Cook and Treganza between 1946 and 1947. Noted as having been located 25 yards east of CA-SOL-2, this was a mound measuring approximately 35 feet in diameter and consisting of “black and ashy” soil characteristic of habitation and burial mounds encountered in the Bay Area. Artifacts noted as having been recovered included projectile points, a tubular pipe, charmstones, steatite beads, clam shell disc beads, abalone pendants, and bone whistles. The site form is unclear as to the number and diversity of human interments that were encountered but both adults and juveniles were noted along with what were described as “pre-interment grave-pit burning”. Due to heavy vegetative growth in the area, SAS archaeologists could not relocate this resource. However, due to the discovery of large numbers of temporally and culturally diagnostic materials and the presence of multiple sets of human remains, this site is recommended eligible for NRHP listing pending further investigation.

CA-SOL-4

Since the existing 1948 Archaeological Site Survey Record contains no information on this site other than its mapped location, little can be said regarding site integrity or significance. However, it is probable that, given the nature of other archaeological resources documented in the immediate vicinity, CA-SOL-4 represents a prehistoric habitation and/or interment location. This site could also not be relocated by SAS archaeologists but given the density of significant sites in the immediate area, this resource should be considered eligible for NRHP listing pending further investigation.

Prehistoric Site 5

This is a large site along the eastern banks of Calhoun cut. Much of the site lies on an existing access/levee road that meanders along the edge of the slough. Midden soils are distinct, containing a light brown, crumbly matrix exhibiting fragments of charcoal and non-marine shell in much larger pieces. Basalt flakes and tools were identified throughout the site. The surface finds provide evidence that there may be valuable information contained within the midden; this cannot be confirmed without subsurface testing. Because of this potential, Prehistoric Site 5 remains unevaluated until future subsurface testing can properly determine the site’s NRHP eligibility.

Calhoun Cut

As discussed in detail above, Calhoun Cut is a historic landscape/water conveyance feature that was artificially cut in 1913 to a depth of 13 feet to allow shipping access to a proposed but never built community called “Solano City”. Solano City was planned to accommodate field agriculture operations in the vicinity of Calhoun Cut and was touted as the first city on the West Coast to be planned in detail before being built. It was planned to house 75,000 residents with a canal (Calhoun Cut) extending to the Sacramento River and railroad access to the rest of

California. The Solano City experiment is notable as an early planned community, but the fact that it was never built to meet its intended purpose does not contribute to significant historic events. As such Calhoun Cut does not meet any of the NRHP criteria and is recommended as ineligible for NRHP listing.

DETERMINATIONS OF EFFECT

The Project will involve a single main phase of construction activity that will result in areas of short-term direct impacts from construction as well as potential ongoing impacts resulting from tidal inundation as the result of proposed levee breaches. Any effects resulting from the Project on historic properties, i.e. cultural resources eligible for or potentially eligible for listing on the NRHP are considered *adverse effects*.

According to a technical memorandum prepared by ESA PWA (2011a), the main ground disturbing activities and *direct effects* of the Project will involve levee breaches, construction of a temporary construction access roadway, and the development of a 5,200 foot-long starter channel with placement of excavated materials in the marsh, adjacent to the channel. Further direct effects could result from instances where archaeological deposits lay directly on access roads. These deposits could be adversely affected by the movement of large construction machinery over them and/or the modification or maintenance of these access roads for the purposes of Project implementation.

Additional *indirect effects* will consist of future ongoing tidal inundation resulting from the levee breaches. An additional technical memorandum prepared by ESA PWA (2011b:1-2) on November 22, 2011, provided a “worst case scenario” of tidal inundation and subsequent bank erosion that could impact sites CA-SOL-1 through 4. As stated in the memo, the “location of identified cultural resource sites are also shown [on the associated memo graphic] and while none are specifically within this range of plausible erosion, this spatial relationship should be reviewed with the Project archaeologist.” According to the memorandum graphic (2011b:3), “inundation limits under typical high tides for preferred alternatives” (i.e., Project induced tidal inundation) comes as close as approximately 30 meters to CA-SOL-1 through 3, and CA-SOL-4 is clearly in the tidal inundation zone. The “plausible limit of channel erosion (high)” comes within 60 meters of all of the sites.

As stated earlier in the *Records Search and Literature Review* section of this report, precise locations of CA-SOL-1 through 4 are unknown and were mapped as single dots, with no site dimensions or extent. It is reasonable to believe that even if the hub of each site is exactly where plotted, site constituents may be scattered for hundreds of feet across the landscape (there was a difference of 600-700 meters between the multiple mapped locations of CA-SOL-1). Site boundaries should also be taken into consideration, as it is not uncommon for burials sites to be at least 20-40 meters in length. Even a 30 meter discrepancy from the current mapped locations of sites CA-SOL-1 through 4 is more than plausible, and would bring these sites into the tidal inundation zone, and a 60 meter discrepancy into the channel erosion zone. According to Philip Luecking (2012), Associate Engineer for ESA PWA and editor of the aforementioned technical memorandums, it is still possible (but unlikely) for some erosion to occur along the tidal inundation zones. Taking into consideration that the current mapped locations of CA-SOL-1 through 4 are imprecise, that we know the sites are in Holocene soils right on the bank and on the floodplain of Lindsey Slough, and that typical burial sites can be at least 20-40 meters in length, there is a strong possibility that CA-SOL-1 through 4 will be *indirectly effected* by tidal inundation and subsequent bank erosion.

Prehistoric Site 5

Located along an access road, this locale will be directly affected by heavy construction machinery driving on it and excessive traffic during the construction process. This site, however, will not be affected by tidal-induced erosion resulting from the proposed levee breaches.

Calhoun Cut

This historic-era resource may be indirectly affected by tidal-induced erosion resulting from the proposed levee breaches, however if SHPO concurs with the recommendation of not eligible for listing on the NRHP, then impacts to Calhoun Cut will not represent an adverse effect resulting from the project.

MANAGEMENT RECOMMENDATIONS

Testing and Evaluation Program for Prehistoric Site 5

This site was discovered along an access road that will be utilized for construction of the project. As elements of Prehistoric Site 5 lie in this access road, they will be affected by construction. Prior to construction, site testing or further evaluation is required to determine NRHP eligibility to ensure that construction of the project does not result in an adverse effect to a NRHP-eligible resource.

Monitoring Plan for Project Construction Direct Effects

Even if exact locations cannot be identified, a number of NRHP-eligible prehistoric resources have been documented within the Project APE and the immediate vicinity. The proximity to the proposed Project, which is designed to cause erosion in its path, may result in damage to these sites. Because of these conditions, archaeological monitoring is required for all ground-disturbing construction activities to ensure that such resources are identified and documented. All cultural monitors will complete daily monitoring logs, take photographs of relevant activities, and document any findings.

Monitoring Plan for Indirect Effect Caused by Tidal Inundation

Given the possibility of erosion damage to NRHP-eligible archaeological sites located within the Project APE and the possibility that other similar resources may be discovered during Project construction, a monitoring and management plan is strongly recommended. The monitoring and management plan will include elements – monitoring activities, triggers for action, and potential adaptive management actions – to protect cultural resources from channel scour. An overview of these elements is provided below. The exact type, frequency, and locations of monitoring can be refined elsewhere, but should include a minimum of two visits a year, in late October at the end of the dry season and in late May at the end of the wet season as each season may exacerbate normal tidal action.

- Monitoring would include visual inspection of the channel bank (site reconnaissance, erosion pins), high resolution aerial photography to characterize the channel edge, and periodic bathymetric surveys. Monitoring should occur more frequently initially. Once the channel widens, erosion is expected to slow and monitoring can occur less frequently. Initially, monitoring of the tidal inundation would be conducted by Project personnel (i.e., engineers, the SLT, the CDFG) until confirmation of bank erosion. Upon confirmation, SAS recommends that a qualified archaeologist be present during all further monitoring visits of the project as the channel naturally widens; the exact point at which the monitoring will cease will be determined by the monitoring archaeologist in consultation with SLT. No further cultural resources monitoring should be required unless flooding uncovers an archaeological resource; flooding and erosion may have unplanned, unforeseeable affects such as 1) uncovering burials/features not previously seen in recorded sites, or 2) uncovering new archaeological deposits not previously recorded.

- Triggers for action will include documentation of tidally-induced erosion to within a minimum setback distance of a known cultural resource.
- Potential adaptive management actions could include providing bank protection/armoring of the channel edge adjacent to the cultural resources, excavation to widen the channel on the bank opposite the cultural resource to provide channel capacity and reduce the potential for further scour, relocation of the channel, and reduction or elimination of flows through the causeway breach (e.g., close the breach).

Native American Monitoring

SAS further recommends that all construction monitoring have a Native American monitor present. Should human remains be discovered during any of the mitigation measures, having an existing Native American monitor also helps communicate to the appointed Most Likely Descendent required information for a treatment plan.

Should buried, unforeseen archaeological deposits be encountered during any construction activity, work must cease within a fifty-foot radius of the discovery and a qualified archaeologist be notified to document the discovery, assess its significance, and recommend treatment. In the event that human remains or any associated funerary artifacts are discovered during construction, all work must cease within the immediate vicinity of the discovery. In accordance with the California Health and Safety Code (Section 7050.5), the Solano County coroner must be contacted immediately. If the remains are deemed to be Native American, the coroner will notify the Native American Heritage Commission, which will in turn appoint and notify a Most Likely Descendent (MLD) to act as a tribal representative. The MLD will work with a qualified archaeologist to determine the proper treatment of the human remains and associated funerary objects. Construction activities will not resume until the human remains are exhumed and official notice to proceed is issued.

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APPENDIX A: NATIVE AMERICAN CONSULTATION



Solano Archaeological Services

Cultural Resource Management

104 Sunset Ave., Ste. E # 120, Suisun City, CA 94585-2064
Phone 707-718-1416 Fax 707-422-7158 www.solanoarchaeology.com

November 12, 2007

Ms. Debbie Pilas-Treadway
Native American Heritage Commission
915 Capitol Mall, Room 364
Sacramento, CA 95814

Dear Ms. Pilas-Treadway:

As part of the Wetlands Reserve Program, the Solano Land Trust (SLT) has recently retained Solano Archaeological Services to conduct a cultural resources inventory of a 282-acre parcel for the planned Calhoun Cut Ecological Preserve Program, located in Solano County, California. The project location lies in the Dozier topographic 7.5 minute quadrangle, Sections 19,24,25,26,29, and 30, township 5N and range 1,2E. Please find the enclosed topographic map illustrating the project location.

The cultural resources inventory will include a pedestrian survey of the project area. Before we commence fieldwork, however, we would like to request a Sacred Lands review for any known cultural resources in the project area. If you could please send us a list of Native American individuals/organizations that may have knowledge of cultural resources in the project area, we would greatly appreciate it. We will provide them with the opportunity to express concerns or state any opinions regarding the proposed development project.

If you have any questions, feel free to contact me at the numbers listed above. Thank you very much for your time.

Sincerely,

A handwritten signature in black ink, appearing to read "C. Jesse Phillips".

C. Jesse Phillips
Project Archaeologist
jesse@solanoarchaeology.com

Enclosed: USGS topographic map

STATE OF CALIFORNIA

Arnold Schwarzenegger, Governor

NATIVE AMERICAN HERITAGE COMMISSION

915 CAPITOL MALL, ROOM 384
SACRAMENTO, CA 95814
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Web Site www.nahc.ca.gov



November 20, 2007

C. Jesse Phillips
Project Archaeologist
Solano Archaeological Services
104 Sunset Avenue, Ste. E #120
Suisun City, CA 94585-2064

Sent by Fax: 707-422-7158
Number of Pages: 2

Re: Proposed Calhoun Cut Ecological Preserve Program, Solano County.

Dear Mr. Phillips:

A record search of the sacred land file has failed to indicate the presence of Native American cultural resources in the immediate project area. The absence of specific site information in the sacred lands file does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

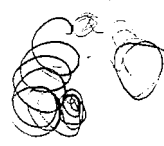
Enclosed is a list of Native Americans individuals/organizations who may have knowledge of cultural resources in the project area. The Commission makes no recommendation or preference of a single individual, or group over another. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated, if they cannot supply information, they might recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe or group. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from any of these individuals or groups, please notify me. With your assistance we are able to assure that our lists contain current information. If you have any questions or need additional information, please contact me at (916) 653-4038.

Sincerely,


Debbie Pilas-Treadway
Environmental Specialist III

Native American Contacts
Solano County
November 16, 2007



Todd Gettlerman
(530) 796-3400
msg 4/30

Kesner Flores
PO Box 1047
Wheatland, CA 95692
calnagpra@hotmail.com
925-586-8919

Wintun / Patwin

Rumsey Indian Rancheria of Wintun
Leland Kinter, Native Cultural Renewal Committee
P.O. Box 18
Brooks, CA 95606
(530) 979-6346
(530) 796-3400 - office
(530) 796-2143 Fax

msg 4/2
told to inform

spoke to
said to
email the
follow-up 4/2

Cortina Band of Indians
Elaine Patterson, Chairperson
PO Box 1630
Williams, CA 95987
~~(530) 473-3274 - Voice~~
(530) 473-3190 - Voice
(530) 473-3301 - Fax

Wintun / Patwin

Rumsey Indian Rancheria of Wintun
Cynthia Clarke, Native Cultural Renewal Committee
P.O. Box 18
Brooks, CA 95606
(530) 796-3400 - office
(530) 796-2143 Fax

msg 4/2
couldn't contact → previous ext. no longer valid and was informed by Karen Flores to contact Todd

left msg w/ receptionist 4/2

Cortina Band of Indians
~~Bill Combs~~, Vice Chairperson
PO Box 1630
Williams, CA 95987
(530) 473-3274 - Voice
(530) 473-3190 - Voice
(530) 473-3301 - Fax

Wintun / Patwin

Wintun Environmental Protection Agency
P.O. Box 1839
Williams, CA 95987
corwepa@hotmail.com
(530) 473-3318
(530) 473-3319
(530) 473-3320 - Fax

4/2
left msg

Replaced by Karen Flores

msg on 4/30

left msg. 4/30

Rumsey Indian Rancheria of Wintun
Marshall McKay, Chairperson
P.O. Box 18
Brooks, CA 95606
(530) 796-3400
(530) 796-2143 Fax

Wintun (Patwin)

msg on 4/30
left msg w/ Todd as requested by receptionist 4/2
(916) 442-9906
Michelle spoke to and said we'd inform if anything found

all blue ink is from 4/30!!

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources for the proposed Calhoun Cut Ecological Preserve program, Solano County.



Solano Archaeological Services
Cultural Resource Management

104 Sunset Ave., Ste. E # 120, Suisun City, CA 94585-2064
Phone 707-718-1416 Fax 707-422-7158 www.solanoarchaeology.com

November 28, 2007

Rumsey Indian Rancheria of Wintun
Attn: Cynthia Clarke
P.O. Box 18
Brooks, CA 95606

Sample
letter

RE: Cultural Resources Inventory for the Proposed Calhoun Cut Ecological Reserve Project

Dear Cynthia Clarke:

The Solano Land Trust (SLT) has recently retained Solano Archaeological Services to conduct a cultural resources inventory of a 282-acre parcel for the planned Calhoun Cut Ecological Reserve Project, Solano County, California. The project is located in a northern section of the Delta, just west of Lindsey Slough, and about 13 miles south of the City of Dixon. For your convenience I have enclosed a USGS topographic map that indicates the exact location of the project area.

A records search at the Northwest Information Center at Sonoma State University is currently being conducted for the involved property. Should previously recorded prehistoric cultural resources be identified during the search, we will contact you right away. Additionally, the Native American Heritage Commission (NAHC) has been contacted to search the Sacred Lands database for areas important to Native Americans near the project area, and the results were negative. Qualified SAS archaeologists will soon be conducting a pedestrian survey to locate any cultural resources that may exist on the property.

From previous correspondence with the NAHC, we have recognized your name as a Native American consultant in Solano County. In effort to identify any cultural resources in the project area, we would like to consult with you regarding information on the cultural and religious importance of the project area. Your efforts in this process provide invaluable information for the identification and treatment of cultural resources.

If you have any questions, feel free to contact me at the numbers listed above. Thank you very much for your time.

Sincerely,

A handwritten signature in cursive script, appearing to read "Jason Coleman".

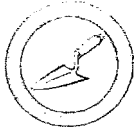
Jason Coleman, M.A., R.P.A.
Senior Archaeologist and Principal
jason@solanoarchaeology.com

**NATIVE AMERICAN CONSULTATION LOG
FOR THE CALHOUN CUT ECOLOGICAL RESERVE PROJECT,
SOLANO COUNTY, CALIFORNIA**

Native American Consultant	Contacted By	Date Letters Sent	Date of Calls	Responses
Kesner Flores	Jason Coleman C. Jesse Phillips C. Jesse Phillips	November 28, 2007	April 2, 2008 April 30, 2008	Commented that due to the age of the site to be sure and get an accurate picture of what's in the ground. Wants a copy of the mitigation plan, and to recommend a responsible treatment or walk away from the project.
Elaine Patterson, Cortina Band of Indians	Jason Coleman C. Jesse Phillips C. Jesse Phillips	November 28, 2007	April 2, 2008 April 30, 2008	Left message with receptionist. No response to date. Left message. No response to date.
Karen Flores, replacing Bill Combs, Cortina Band of Indians	Jason Coleman C. Jesse Phillips C. Jesse Phillips	November 28, 2007	April 2, 2008 April 30, 2008	Left message. No response. Left message, no response to date.
Marshall McKay, Rumsey Indian Rancheria of Wintun	Jason Coleman C. Jesse Phillips C. Jesse Phillips	November 28, 2007	April 2, 2008 April 30, 2008	Spoke with Todd Gettleman and Michelle La Pena, they asked to be informed if anything was found. Left message. No response to date.
Leland Kinter, Rumsey Indian Rancheria of Wintun	Jason Coleman C. Jesse Phillips C. Jesse Phillips	November 28, 2007	April 2, 2008 April 30, 2008	Informed Todd Gettleman again. Left message. No response to date.
Cynthia Clarke, Rumsey Indian Rancheria of Wintun	Jason Coleman C. Jesse Phillips C. Jesse Phillips	November 28, 2007	April 2, 2008 April 30	Left message. No response. Phone number no longer

			2008	valid. Informed by Leland Kinter to contact Todd Gettleman
Wintun Environmental Protection Agency	Jason Coleman C. Jesse Phillips	November 28, 2007	April 2, 2008 April 30, 2008	Left message. No response. Left message. No response.

APPENDIX B: RECORDS SEARCH AND PREVIOUSLY DOCUMENTED SITES



Solano Archaeological Services

Cultural Resource Management

131 Sunset Ave., Ste. E # 120, Suisun City, CA 94585-2064
Phone 707-718-1416 Fax 707-422-7158 www.solanoarchaeology.com

November 12, 2007

Northwest Information Center
Sonoma State University
Attn. Leigh Jordan
1303 Maurice Avenue
Rohnert Park, CA 94928

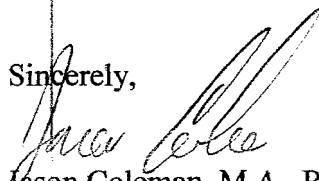
RE: Record Search Request for the Solano Land Trust Calhoun Cut Ecological Reserve Project

Dear Ms. Jordan:

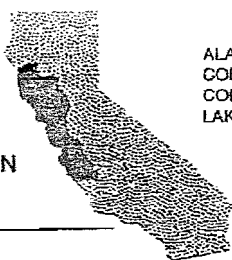
I would like to request a **records search** for the Solano Land Trust Calhoun Cut Ecological Reserve Project, Solano County, California. We will be conducting a cultural resources inventory of the project area delineated on the enclosed 1:24,000 USGS Dozier quadrangle map. Please conduct a search of all the sources on file at your information center. I have enclosed a completed Records Search Request Form indicating our needs in detail.

If you find that the records search will take longer than two hours to complete, please notify me as soon as possible. Thank you for your time, and if you have any questions please do not hesitate to contact me at the numbers listed above.

Sincerely,


Jason Coleman, M.A., R.P.A.
Senior Archaeologist and Principal
jason@solanoarchaeology.com

Enc. USGS topographic map and Records Search Request Form



CULTURAL/HISTORICAL RESOURCES CONSULTANT RECORDS SEARCH REQUEST FORM

Date: November 12, 2007 NWIC File No.: _____

Name: Jason Coleman Phone: 707-718-1416

Affiliation: Solano Archaeological Services

Address: 131 Sunset Ave., Ste. E # 120, Suisun City, CA 94585

Project: Solano Land Trust Calhoun Cat Ecological Preserve

Street Address of Project: Access Road off of HWY 113

Quad: Dozier County: Solano

Please include the following information for the project area shown on the attached map. Circle and/or fill-in as necessary:

DATA BASE

List of Sites within the project area yes / no
within a 1/2 mile radius yes / no

List of Studies within the project area yes / no
within a 1/2 mile radius yes / no

Mapped Sites within the project area yes / no
within a 1/2 mile radius yes / no

Mapped Studies within the project area yes / no
within a 1/2 mile radius yes / no

Copies of entire Resource Records (site records) yes / no

Copies of entire Study Report yes / no

Bibliographical References yes / no

CONTINUED ON THE BACK >>>

.....

INVENTORIES

Please check:

within the project area

yes / no

within a 1/2 mile radius

yes / no

Historic Properties Directory, including:

yes / no

National Register of Historic Places

California Register of Historic Places

California Historical Landmarks

California Points of Historical Interest

California Inventory of Historic Resources:

yes / no

Other Historic Inventories, if applicable:

yes / no

.....

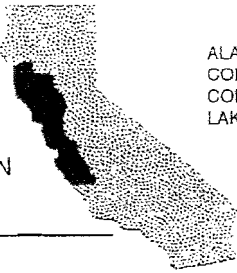
OTHER (e.g., historic maps, GLO Plats, Soil Survey Maps):

yes / no

Please list:

.....

CALIFORNIA
HISTORICAL
RESOURCES
INFORMATION
SYSTEM



ALAMEDA
COLUSA
CONTRA COSTA
LAKE

MARIN
MENDOCINO
MONTEREY
NAPA
SAN BENITO
SAN FRANCISCO

SAN MATEO
SANTA CLARA
SANTA CRUZ
SOLANO
SONOMA
YOLO

Northwest Information Center
Sonoma State University
1303 Maurice Avenue
Rohnert Park, California 94928-3609
Tel: 707.664.0880 • Fax: 707.664.0890
E-mail: nwic@sonoma.edu

COPY

INFORMATION CENTER ACCESS AGREEMENT

FILE NO.: 07-0715

I, the undersigned, have been granted access to historical resources data on file at the Northwest Information Center (NWIC) of the Historical Resources Information System, for the purpose of 1. Project Planning XX or 2. Scientific Research _____ or 3. Other(specify) _____.

I understand that all access fees charged for in-person use or services provided by the Information Center Staff are subject to a one hour minimum charge, thereafter increased by half hour increments, and that payment must be remitted within thirty days of billing.

I understand that any confidential information that I access at the NWIC must remain out of the public domain, except in those circumstances which may be required by law. I fully understand the confidential nature of this information and I agree to respect that confidentiality. I will attempt to ensure that specific site locations are not distributed in public documents or made available to unauthorized individuals within my institution or agency. I also understand that prior written consent of the Information Center Coordinator or the State Historic Preservation Officer is required for any exceptions to the above stipulations.

I agree to forward to the Northwest Information Center, no later than 30 after completion, a final version of any report(s) and/or site record(s) resulting from access to the NWIC database for this project. I also agree to forward to the Northwest Information Center any subsequent reports or records for which I am responsible.

Failure to comply with above agreement is grounds for denial of access to the historical resources data on file at the Northwest Information Center.

*** PLEASE SIGN AND RETURN THIS FORM. SEE ATTACHED INVOICE ***

Jason Coleman DATE: _____
Printed Name/Signature of Researcher
Affiliation: Solano Archaeological Services
Address: 131 Sunset Avenue, Suite E #120, Suisun City, CA 94585-2064
Phone: 718-1416 FAX: 422-7158
Contact person/agency for which work conducted: _____
Telephone: _____ FAX: _____
Project: Solano Land Trust Calhoun Cut Ecological Preserve
County: Solano
Map: Dozier & Birds Landing 7.5'
COMMENTS:

-----STAFF USE ONLY-----

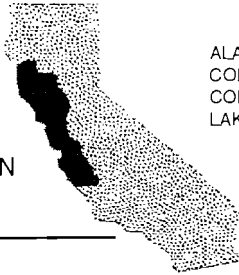
Date request rec'd: Mail 11/14/07 Phone _____ Fax _____ In person _____
Date of response: Mail 1/9/08 Phone 1/8/08 Fax _____ In person _____

CHECK IN: _____ CHECK OUT: _____
Staff processing: 2 hour(s) @ \$150/hour \$ 300.00
In person research: _____ hour(s) @ \$100/hour/person \$ _____
Xerox/Computer Search: 90 page(s) @ \$0.15/page \$ 13.50
Labor Charge: _____ hour(s) @ \$40.00/hour \$ _____
Fax @ \$1/page \$ _____
Other: \$ _____

Rapid Response surcharge of 50% of total cost:

SUBTOTAL \$ _____
SURCHARGE \$ _____

Lisa C. Hagel Invoice N10446 TOTAL \$ 313.50
Information Center Staff



MEMO

Date: 9 January 2008

To: Jason Coleman, Solano Archaeological Services, 131 Sunset Avenue, Suite E,
#120, Suisun City, CA 94585

From: Lisa Hagel

Re: Solano Land Trust Calhoun Cut Ecological Preserve, NWIC File #: 07-0715

Dozier & Birds Landing 7.5'

Sites in or within 1/2 mile radius of the project area: CA-SOL-1 (3 locations), 2, 3, 4, & 347 are within the project area. CA-SOL-5 (2 locations) and P-48-402 are within 1/2 mile. Enclosed are copies of the site record forms. The site locations are plotted on the enclosed maps.

Studies in or within 1/2 mile radius of the project area: S-5207, 12300, 23674, 17298, 22464, 7897, 7898, & 17835 are within the project area. S-5171, 5167, 23946, 15174, 16207, 16051, 6922, & 19938 are within 1/2 mile. Enclosed are bibliographic references for the reports. The study locations are plotted on the enclosed maps.

OHP Historic Properties Directory: There were no listings in the vicinity of the project.

California Inventory of Historical Resources: There were no listings in the vicinity of the project.

Historic maps (copied the pertinent sections of the maps):

- 1853 GLO Plat Map, T5N, R1E
- 1862 GLO Plat Map, T5N, R2E
- 1872 J.S. Henning, Map of Solano County, California
- 1877 Map of Solano County, California
- 1908 USGS Vacaville Quadrangle
- 1908 USGS Antioch Quadrangle
- 1914 C.F. Weber & Co., un-named map
- 1946 Thomas Bros., Map of Solano County, California

ARCHAEOLOGICAL SITE SURVEY RECORD

CA SOL - 1

1. Site Sol-1 2. Map Dozier 7.5
Maine Prairie USGS 3. County Solano
4. Twp. 5 N Range 2 E; NE $\frac{1}{4}$ of NW $\frac{1}{4}$ of Sec. 30 ?
29 ?
5. Location .5 miles to the west of Sol-2. On the south bank of Linsey Slough.
 UTM: 10/ ^{A)} 606720 / 4234790 ^{B)} 606730 / 4234730 ^{C)} 606050 / 423415
^{D)} 606030 / 4234670 6. On contour elevation 5'
7. Previous designation(s) for site Petersen 1
8. Owner(s) Mr. Petersen, Harry E. 9. Address Dixon, California
10. Previous owner(s), date(s) _____
11. Present tenant _____
12. Attitude toward excavation _____
13. Description of site Occupation and burial site
14. Area _____ 15. Depth _____ 16. Height _____
17. Vegetation _____ 18. Nearest water At the north of the site--
Linsey Slough.
19. Soil of site Gray midden. 20. Surrounding soil type _____
21. Previous excavation Treganza, 1946, U.C.; H. and F. Riddell, etc. March-June,
1948, U. C.
22. Cultivation Never 23. Erosion Slight; covered with 6" of clay
in a flood since 1850.
24. Buildings, roads, etc. none
25. Possibility of destruction slight
26. House pits none
27. Other features none
28. Burials Six burials removed between Treganza and Riddell excavations.
29. Artifacts Obsidian projectile points, antler tine, obsidian scrapers.
30. Remarks _____
31. Published references 5-7898
32. Accession No. _____ 33. Sketch map none.
34. Date March, 1948 35. Recorded by F. Riddell 36. Photos _____

ARCHAEOLOGICAL SITE SURVEY RECORD

CA SOL - 2

DOZIER 7.5'

- 1. Site Sol-2 2. Map Dozier 7.5' ~~Maine Prairie~~ 3. County Solano
- 4. Twp. 5 N Range 2 E ; SE $\frac{1}{4}$ of SW $\frac{1}{4}$ of Sec. 20
- 5. Location On the south bank of the Linsey Slough. 700' N. of the 20/29 line.
2000' E. of the 19/20 line.
- UTM: 10/606870/4235920 6. On contour elevation 5'
- 7. Previous designation(s) for site Peterson 2
- 8. Owner(s) Mr. Harry E. Petersen 9. Address Dixon, California
- 10. Previous owner(s), date(s) _____
- 11. Present tenant _____
- 12. Attitude toward excavation Agreeable
- 13. Description of site Occupation and burial site on the border of the Linsey Slough.
- 14. Area _____ 15. Depth _____ 16. Height _____
- 17. Vegetation Marsh, wire, grass 18. Nearest water At the north Linsey Slough
- 19. Soil of site _____ 20. Surrounding soil type _____
- 21. Previous excavation UC - Spring of 1948, UC - Spring of 1947, June.
- 22. Cultivation None 23. Erosion None
- 24. Buildings, roads, etc. None
- 25. Possibility of destruction Slight
- 26. House pits none
- 27. Other features none
- 28. Burials Many burials and cremations.
- 29. Artifacts Charmstones, obsidian projectile points, mortars
- 30. Remarks _____
- 31. Published references _____
- 32. Accession No. _____ 33. Sketch map none
- 34. Date March 1948 35. Recorded by F. Riddell 36. Photos _____

ARCHAEOLOGICAL SITE SURVEY RECORD

CA SOL - 3

DOZIER

1. Site Sol-3 2. Map Maine Prairie USGS 3. County Solano
4. Twp. 5 N Range 2E; SE $\frac{1}{4}$ of SW $\frac{1}{4}$ of Sec. 20
5. Location 25 yds. east of the Site Sol-2
UTM: 10/606960 / 4234950
6. On contour elevation 5'
7. Previous designation(s) for site Petersen 3
8. Owner(s) Mr. Harry E. Petersen 9. Address Dixon, California
10. Previous owner(s), date(s) _____
11. Present tenant Owner
12. Attitude toward excavation Agreeable
13. Description of site Small occupation site containing many burials.
14. Area 35 ft. dia. 15. Depth _____ 16. Height _____
17. Vegetation wire-like grass 18. Nearest water Linsey to the north of the site
19. Soil of site Black and ashy. 20. Surrounding soil type _____
21. Previous excavation Totally excavated by Treganza and Cook (1946-7)
22. Cultivation none 23. Erosion none
24. Buildings, roads, etc. none
25. Possibility of destruction Totally excavated by Cook and Treganza.
26. House pits none
27. Other features none
28. Burials Twelve burials.
29. Artifacts Projectile points, tubular pipe, Charmstones, steatite beads,
clam shell discbeads, bone awl, abalone pendants, bone whistles.
30. Remarks _____
31. Published references Cook and Treganza, Amer. Ant., Vol. 13, No. 4, April, 1948.
Treganza & Cook, Amer. Ant., Vol. 13, No. 4, pp. 287-297.
32. Accession No. _____ 33. Sketch map none
34. Date 1946 35. Recorded by Treganza 36. Photos _____

ARCHAEOLOGICAL BURIAL RECORD

CA SOL - 3

1. Bur. No. 2 2. Site Petersen #3 3. Excavation unit Sec. 20
4. Location _____ Of datum _____ To _____
5. Depth from surface 20" to skull 6. Depth from datum plane _____ to _____
7. Stratification _____
8. Matrix _____ 9. Condition Good
10. Bones absent (or present) _____
11. Sex _____ 12. Age _____
13. Pathology _____
14. Type of disposal _____
15. Position of body Right flex
16. Left side _____ Right side _____ Back _____ Face _____ Sitting _____
17. Position of head _____ side _____ back, _____ face, facing _____
18. Orientation NW - SE 19. Size of grave 26x18"
20. Associated objects (itemize) None
- _____
- _____
- _____
- _____
21. Remarks Burial lay just above base of mound. Pathologic condition present on tibia. Tooth decay (2?) and abscess present.
- _____
- _____
- _____
- _____
22. Exposed by _____ 23. Recorded by Treganza
24. Photo _____ 25. Sketch see reverse 26. Date 2/1/56

University of California

California Archaeological Survey

ARCHAEOLOGICAL BURIAL RECORD

1. Bur. No. 3 2. Site Petersen #3 3. Excavation unit Sec. 22
4. Location _____ Of datum _____ To _____
5. Depth from surface Base of mound 6. Depth from datum plane _____ to _____
7. Stratification _____
8. Matrix _____ 9. Condition Bones in good condition
10. Bones absent (or present) See remarks
11. Sex male ? 12. Age _____
13. Pathology _____
14. Type of disposal _____
15. Position of body Probably flexed
16. Left side _____ Right side _____ Back _____ Face _____ Sitting _____
17. Position of head _____ side _____ back, _____ face, facing _____
18. Orientation _____ 19. Size of grave _____
20. Associated objects (itemize) Clam shell disc beads, Olivella half shells, obsidian point.
21. Remarks Disturbed burial, pelvis, leg bones, and skull missing.
22. Exposed by _____ 23. Recorded by Treganza
24. Photo _____ 25. Sketch No 26. Date 9/11/66

ARCHAEOLOGICAL BURIAL RECORD

1. Bur. No. 1 2. Site Petersen #3 3. Excavation unit Sec. 29
4. Location _____ Of datum _____ To _____
5. Depth from surface 18" 6. Depth from datum plane _____ to _____
7. Stratification _____
8. Matrix _____ 9. Condition Fair
10. Bones absent (or present) _____
11. Sex _____ 12. Age Infant
13. Pathology _____
14. Type of disposal _____
15. Position of body _____
16. Left side _____ Right side _____ Back _____ Face _____ Sitting _____
17. Position of head _____ side _____ back, _____ face, facing _____
18. Orientation E - W 19. Size of grave 12x18"
20. Associated objects (itemize) Haliotis ornaments, pestle, boat-shaped stone object, obsidian point, small disc Haliotis epidermis beads, large Olivella discs, Olivella spires, Olivella half shells, clam shell discs, worked bone rib, asphalt coated pebble, carbonized acorns.
21. Remarks S.E. corner of Section 29. Small amount of pre-interment pit burning.
22. Exposed by _____ 23. Recorded by Treganza
24. Photo _____ 25. Sketch _____ 26. Date 9/23/56

University of California

California Archaeological Survey

ARCHAEOLOGICAL BURIAL RECORD

1. Bur. No. 5 2. Site Petersen #3 3. Excavation unit Sec. 28
4. Location _____ Of datum _____ To _____
5. Depth from surface 17" to skull 6. Depth from datum plane _____ to _____
7. Stratification _____
8. Matrix _____ 9. Condition good
10. Bones absent (or present) _____
11. Sex _____ 12. Age _____
13. Pathology _____
14. Type of disposal _____
15. Position of body Flexed on back
16. Left side _____ Right side _____ Back _____ Face _____ Sitting _____
17. Position of head _____ side _____ back, _____ face, facing _____
18. Orientation E - W 19. Size of grave 18x36"
20. Associated objects (itemize) Pestle
- _____

21. Remarks Pre-interment grave-pit burning.
- _____

22. Exposed by Treganza, Smith, Ridell 23. Recorded by Treganza
24. Photo _____ 25. Sketch see reverse 26. Date 9/22/60

ARCHAEOLOGICAL BURIAL RECORD

1. Bur. No. 6 2. Site Petersen #3 3. Excavation unit Sec. 23
4. Location _____ Of datum _____ To _____
5. Depth from surface 17" to skull 6. Depth from datum plane _____ to _____
7. Stratification _____
8. Matrix _____ 9. Condition good
10. Bones absent (or present) _____
11. Sex _____ 12. Age 5 years (?)
13. Pathology _____
14. Type of disposal _____
15. Position of body flexed on back
16. Left side _____ Right side _____ Back _____ Face _____ Sitting _____
17. Position of head _____ side _____ back, _____ face, facing _____
18. Orientation E - W 19. Size of grave 27x22"
20. Associated objects (itemize) Clam shell disc and magnesite beads, "hourglass" stellite bead.
21. Remarks Pre-interment grave-pit burning.
22. Exposed by _____ 23. Recorded by Froganza
24. Photo _____ 25. Sketch see reverse 26. Date 9/22/66

University of California

California Archaeological Survey

ARCHAEOLOGICAL BURIAL RECORD

1. Bur. No. 7 2. Site ^{Lal 3} Peterson #3 3. Excavation unit Grid 37
4. Location _____ Of datum _____ To _____
5. Depth from surface 26" 6. Depth from datum plane _____ to _____
7. Stratification _____
8. Matrix Midden 9. Condition Poor
10. Bones absent (or present) See remarks
11. Sex _____ 12. Age Infant
13. Pathology _____
14. Type of disposal _____
15. Position of body _____
16. Left side _____ Right side _____ Back _____ Face _____ Sitting _____
17. Position of head _____ side _____ back, _____ face, facing _____
18. Orientation _____ 19. Size of grave _____
20. Associated objects (itemize) Clam shell disc beads.
- _____
- _____
- _____
- _____
21. Remarks Burial badly weathered, only portion of skeleton remained.
- _____
- _____
- _____
- _____
22. Exposed by S.F. Cook 23. Recorded by T. J. ...
24. Photo _____ 25. Sketch _____ 26. Date Oct., 1946

ARCHAEOLOGICAL BURIAL RECORD

1. Bur. No. 8 2. Site Peterson #3 3. Excavation unit Grid 37
4. Location _____ Of datum _____ To _____
5. Depth from surface 35" 6. Depth from datum plane _____ to _____
7. Stratification _____
8. Matrix Midden 9. Condition Poor
10. Bones absent (or present) _____
11. Sex _____ 12. Age Infant - possible foetus.
13. Pathology _____
14. Type of disposal _____
15. Position of body _____
16. Left side _____ Right side _____ Back _____ Face _____ Sitting _____
17. Position of head _____ side _____ back, _____ face, facing _____
18. Orientation _____ 19. Size of grave _____
20. Associated objects (itemize) _____

21. Remarks In pelvic cavity of Burial #20.

22. Exposed by _____ 23. Recorded by T. Hagan
24. Photo _____ 25. Sketch _____ 26. Date 10/13/70

ARCHAEOLOGICAL BURIAL RECORD

CA SOL - 3

- 1. Bur. No. 9 2. Site Sol-3
Peterson #3 3. Excavation unit Sec. 27
- 4. Location _____ Of datum _____ To _____
- 5. Depth from surface _____ 6. Depth from datum plane 39" to _____
- 7. Stratification _____
- 8. Matrix _____ 9. Condition Fair
- 10. Bones absent (or present) _____
- 11. Sex _____ 12. Age 6 mos.
- 13. Pathology _____
- 14. Type of disposal _____
- 15. Position of body _____
- 16. Left side _____ Flexed Right side _____ Back _____ Face _____ Sitting _____
- 17. Position of head _____ side _____ back, _____ face, facing _____
- 18. Orientation 3 - 5 19. Size of grave 8x15"
- 20. Associated objects (itemize) Olivella and clam shell disc beads.
- 21. Remarks Burial #9 lay under burial #4 with head next to arm of burial #10.
Pre-internment grave-pit burning. Probably an associated infant burial with #9.
- 22. Exposed by _____ 23. Recorded by Ferguson
- 24. Photo _____ 25. Sketch _____ 26. Date 5/15/45

ARCHAEOLOGICAL BURIAL RECORD

1. Bur. No. 20 2. Site Roberson #3 3. Excavation unit Sec. 37

4. Location _____ Of datum _____ To _____

5. Depth from surface 23" to head 6. Depth from datum plane _____ to _____

7. Stratification _____

8. Matrix _____ 9. Condition Good

10. Bones absent (or present) _____

11. Sex female 12. Age young adult

13. Pathology _____

14. Type of disposal _____

15. Position of body Flexed on back; legs up.

16. Left side _____ Right side _____ Back _____ Face _____ Sitting _____

17. Position of head _____ side _____ back, _____ face, facing _____

18. Orientation WNW 19. Size of grave 47x29"

20. Associated objects (itemize) Clam shell and Olivella disc beads.

21. Remarks Pre-interment grave-pit burning. Foetal remains in pelvic and pectoral regions.

22. Exposed by _____ 23. Recorded by Treganza and Nelson

24. Photo _____ 25. Sketch see reverse 26. Date 10/23/55

ARCHAEOLOGICAL BURIAL RECORD

- 1. Bur. No. 11412 2. Site Peterson #3 3. Excavation unit Spa. 36
- 4. Location _____ Of datum _____ To _____
- 5. Depth from surface 20" to skull 6. Depth from datum plane _____ to _____
- 7. Stratification _____
- 8. Matrix Mound 9. Condition Good
- 10. Bones absent (or present) _____
- 11. Sex Female 12. Age _____
- 13. Pathology _____
- 14. Type of disposal _____
- 15. Position of body Flexed
- 16. Left side _____ Right side _____ Back _____ Face _____ Sitting _____
- 17. Position of head _____ side _____ back, _____ face, facing _____
- 18. Orientation NE - SW 19. Size of grave 33x20"
- 20. Associated objects (itemize) Small shell beads, small bird bone whistle, point, abalone ornaments, pestle.
- 21. Remarks Associated child age 2 1/2. Pre-interment grave-pit burning.
- 22. Exposed by Treganza 23. Recorded by Treganza
- 24. Photo _____ 25. Sketch _____ 26. Date 11/17

ARCHAEOLOGICAL SITE SURVEY RECORD

CA SOL - 4

DOZIER 7.5

- 1. Site Sol-4 2. Map Maine Prairie USGS 3. County Solano
- 4. Twp. 5 N Range 2 E; ^{SE}~~NE~~ 1/4 of SW 1/4 of Sec. 20
- 5. Location On the north bank of the Linsey Slough, due north of Sol-2, by less than 500 feet.
- UTM: 10/606850/4235120 6. On contour elevation 5'
- 7. Previous designation(s) for site Petersen, Schmeiser.
- 8. Owner(s) _____ 9. Address _____
- 10. Previous owner(s), date(s) _____
- 11. Present tenant _____
- 12. Attitude toward excavation _____
- 13. Description of site _____
- 14. Area _____ 15. Depth _____ 16. Height _____
- 17. Vegetation _____ 18. Nearest water _____
- 19. Soil of site _____ 20. Surrounding soil type _____
- 21. Previous excavation _____
- 22. Cultivation _____ 23. Erosion _____
- 24. Buildings, roads, etc. _____
- 25. Possibility of destruction _____
- 26. House pits _____
- 27. Other features _____
- 28. Burials _____
- 29. Artifacts _____
- 30. Remarks _____
- 31. Published references _____
- 32. Accession No. _____ 33. Sketch map _____
- 34. Date March, 1948 35. Recorded by F. Riddell 36. Photos _____

ARCHAEOLOGICAL SITE SURVEY RECORD

CA SOL - 5

- 1. Site Sol-5 2. Map DOZIER Maine Prairie USGS 3. County Solano
- 4. Twp. 5 N Range 2 E; NE NW $\frac{1}{4}$ of NE NW $\frac{1}{4}$ of Sec. 29 30
- 5. Location Approximately 400 yds. to the SSE of Peterson 1 (Sol-1)
UTM: 10/ EST A) 606650 / 4234600 B) 606680 / 4234550 C) 606130 / 4234350
D) 606100 / 4234420
- 6. On contour elevation 10'
- 7. Previous designation(s) for site Petersen 5
- 8. Owner(s) Mr. Harry E. Petersen 9. Address Dixon, California
- 10. Previous owner(s), date(s) _____
- 11. Present tenant _____
- 12. Attitude toward excavation _____
- 13. Description of site Delta grassland with tule sloughs on three sides.
- 14. Area 50' in dia. 15. Depth 35" 16. Height _____
- 17. Vegetation wire-like grass 18. Nearest water At the eastland west of the site.
- 19. Soil of site less black than Sol-1 20. Surrounding soil type _____
- 21. Previous excavation Test pitted in 1948
- 22. Cultivation never. 23. Erosion none
- 24. Buildings, roads, etc. none
- 25. Possibility of destruction slight
- 26. House pits none
- 27. Other features none
- 28. Burials none
- 29. Artifacts Fired clay and bone fragments.
- 30. Remarks _____
- 31. Published references _____
- 32. Accession No. _____ 33. Sketch map _____
- 34. Date 14 March 1948 35. Recorded by F. A. Riddell 36. Photos _____

APPENDIX C: CALIFORNIA DPR SITE FORMS – NEWLY DOCUMENTED SITES

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code

Other Listings
Review Code

Reviewer

Date

Page 1 of 6

*Resource Name or #: Calhoun Cut

P1. Other Identifier:

*P2. Location: Not for Publication Unrestricted

*a. County: Solano

and (P2b and P2c or P2d. Attach a Location Map as necessary.)

*b. USGS 7.5' Quad: Dozier Date: 1951, PR 1968 T 5N; R 1 & 2 E; NE ¼ of Sec 26, NW ¼ of Sec 25, SE ¼ of Sec 24, and Sec 19, 29, & 30; M.D. B.M.

c. Address: Robinson Road City: Unincorporated Zip: Unknown

d. UTM: Zone: 10; A. WEST 601,899mE/ 4,234,479 mN (G.P.S.) NAD83

B. EAST 607,037mE/ 4,235,402 mN

e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate) Elevation: 5-15 feet above sea level From Highway 12 take Highway 113 north, which bisects Calhoun Cut in 4 miles.

*P3a. Description: (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

Stemming from the Lindsey Slough tidal system, Calhoun Cut was artificially cut in 1913 to a depth of 13 feet to allow shipping access to a proposed but never built community called "Solano City" (Goerke-Shrode 2002). It lies almost 5 km in length (east-west) and about 2.5 km wide, and is the home of ecological preserves under the management of the California Department of Fish and Game (CDFG), and the Solano Land Trust. Owned by CDFG, the reserve lies in the northwest edge of the Sacramento Delta region, just west of the confluence of Lindsey Slough and Barker Slough. Calhoun Cut is now part of the Calhoun Cut Ecological Reserve, a 965-acre parcel of land designated for wetland growth. Along the slough embankment typical riparian flora can be observed, particularly large impenetrable thickets of tule. The surrounding land consists of valley prairie grassland where cattle graze on old agricultural plots.

*P3b. Resource Attributes: AH6. Water Conveyance System

*P4. Resources Present: Building Structure Object Site District Element of District Other (Isolates, etc.)

P5a. Photo or Drawing



P5b. Description of Photo: SAS-SLT0101-49, Slough overview, facing NE

*P6. Date Constructed/Age and Sources: Historic Prehistoric Both

*P7. Owner and Address:
CA Department of Fish and Game c/o
The Solano Land Trust
1001 Texas Street, Suite C
Fairfield, CA 94533-5723

*P8. Recorded by:
J. Coleman, Solano Archaeological
Services
131 Sunset Avenue, Ste. E 120
Suisun, CA 94585

*P9. Date Recorded:
April 11, 2008

*P10. Survey Type: Intensive
pedestrian

*P11. Report Citation: (J. Coleman, 2008, Cultural Resources Inventory Report for the Calhoun Cut Ecological Reserve Project, Solano County, California. Submitted to the Solano Land Trust. Submitted by Solano Archaeological Services.

*Attachments: NONE Location Map Sketch Map Continuation Sheet Building, Structure, and Object Record Archaeological Record District Record Linear Feature Record Milling Station Record Rock Art Record Artifact Record Photograph Record Other (List):

DPR 523A (1/95)

*Required information

*Recorded by: Jason Coleman

*Date: April 11, 2008

Continuation

Update

Delta Land Reclamation

A great period of land reclamation began in the late 1860's as economic investment in the area increased. This land reclamation trend peaked in the period during 1870 to 1880 when approximately 92,000 acres of Delta lands were reclaimed and several levees were constructed. In the period between 1910 and 1920, this number was surpassed when an additional 94,000 acres were reclaimed. The establishment of large reclamation companies, such as the Tide Land Reclamation Company and the Glasgow-California Land and Reclamation Company, in addition to technological advances in both pumping and dredging, were key factors in the 1870s being a period of reclamation projects in the area (Thompson 1957: 242).

Farming in the Delta Region

Rich fertile soils in addition to a marine influence have historically resulted in high productivity within the lower San Joaquin and Sacramento Delta regions. The area is also flat and conducive to agricultural modifications to the land such as grading, the excavation of ditches, irrigation, and work with mechanized equipment given the lack of hardpan, gravels, or rock. Additionally, the soils in the region are rich in nitrogen, and initially the application of fertilizer was not required (Thompson 1957: 307). The following sections constitute a synopsis of the historical farming practices within the Delta.

The Early Period

Early farming in the Delta region consisted primarily of subsistence gardening during and after the Gold Rush. This subsistence farming was fostered by the proximity of the region to the markets located in San Francisco and the goldfields of the Sierra Nevada foothills. Initially, the primary crops were tended by people of various nationalities on higher lands such as natural levees and rises, and consisted mostly of potatoes, onions, and beans as well as other perishable crops. Beef cattle were grazed in the tule swamps in the summer months. Fruits, grains, and dairy products were also profitable commodities originating in the Delta Region in the late 1870's (Thompson 1957: 309).

The growth of agriculture in the Delta region was steady, and by 1852 the banks of the San Joaquin River were entirely occupied by small-scale farming operations. In the late 1870's market gardens near Stockton were competing for the San Francisco produce trade which had been dominated by the Santa Clara Valley and other areas located in the bay area periphery. By 1883, large amounts of garden vegetables were moving to San Francisco with a day's harvest picked up by steam ships which landed in the city the morning after harvest from the nearby fields and orchards.

By the 1870's, when the reclamation efforts by land development companies were at their peak, the region flourished and various farming projects became associated with various ethnic groups. Chinese immigrants became specialists in row crops such as potatoes, while Chinese, Italian, and Portuguese tenant farmers were identified with garden or truck farming (Thompson 1957: 309). American-born settlers tended to gravitate towards grain and orchard production as well as livestock husbandry. Generally, these European residents lived on the mainland and the "islands" located within 1 mile of the river. Their houses were often constructed atop alluvial prominences amidst the grain fields in the region.

Some of these farm structures were built by land developers as base camps for land clearing and reclamation crews.

Also in the 1870's, large-scale irrigation began to be developed and employed. Initially, water was delivered through tidal gates and drainage ditches. The tenant farmer was responsible for maintenance of these irrigation systems, while the reclamation district was responsible for maintaining the drainage systems. Although there was large-scale irrigation in the region, the majority of land in the area was without irrigation as late as 1898 (Thompson 1957: 311).

The Growth Period

The transition of the Delta region from garden to field agriculture is primarily a twentieth century phenomenon (Thompson 1957: 312). While large expanses of agricultural land continued to be reclaimed, the catalyst for the expansion in production appears to be the introduction of electric pumps which were in wide use by 1905 and 1906. These pumps replaced the previously used steam-powered and horse-powered devices. Electricity was provided to the area by a network of transmission and distribution lines, the construction of which peaked in the period during 1911 and 1915.

Early in the twentieth century, the majority of the Delta acreage was planted in barley, with potatoes being the most valuable crop, followed by beans and then asparagus. The common crops produced in the region included onions, field corn, celery, sugar beets, sweet potatoes, flax and flaxseed, wheat, alfalfa, and rye (Thompson 1957: 313). A change in earlier farming practices occurred after World War I when small family operations quickly gave way to a trend toward heavily industrialized farms. Increases in mechanization, the use of contract day labor rather than sharecropping, increased use of fertilizer, and a departure from a traditional potato-beans-barley rotation, were all key factors in the industrial farming boom.

*Recorded by: Jason Coleman

*Date: April 11, 2008

Continuation

Update

Large-Scale Agriculture

During this time period, winter grain and asparagus ranked first and second among Delta crops in terms of total planted acreage, followed by alfalfa and corn. However, large concentrations of beans continued to be grown in the region in 1924 but gradually declined after that year. Mechanization, including irrigation systems, continued to increase in popularity and lead to increased agricultural production. The increased use of fertilizer also facilitated this increase. While the markets expanded in terms of volume, the same basic crops continued to be grown in the Delta for the past 150 years. Asparagus has remained one of the most important crops despite a labor intensive harvesting process. Prior to World War I, laborers were usually of Japanese, Chinese, and Indian descent, with Filipino and Mexican nationals dominating the workforce after the war. (Thompson 1957: 339). This pattern of shifting demographics in the labor force mirrors the trend seen in the 1880s when various ethnic groups worked on constructing the canals and the levees that made the Delta region one of the most important agricultural centers in the United States.

Patrick Calhoun and the Solano City Land Bust

Consistent with the general trend during the Growth Period, the town of Solano City was planned to accommodate field agriculture operations in the vicinity of Calhoun Cut. Solano City was touted as the first city on the West Coast to be planned in detail before being built. However, the Solano City project would never materialize and will always be remembered as one of the biggest land busts in California history (Eberling 1996). While large expanses of agricultural land were reclaimed for agriculture in the Delta region during the same time period, in contrast, Solano City and the Calhoun Cut area represent the collapse of the American dream rather than agrarian prosperity. In hindsight, Solano City was a magnificently planned community. It was planned to house 75,000 residents with a canal extending to the Sacramento River and railroad access to the rest of California. During the time that the city was planned, Solano County had only 25,000 residents (Bowen 2000: 23). Had the promoters of Solano City been successful, it would have been Solano County's largest city and would have likely developed into an agricultural and commercial hub in the area.

The history of Solano City and Calhoun Cut is inextricably linked to Patrick Calhoun, the grandson of former United States Vice President, John C. Calhoun. He was once described as a "pudgy middle-aged business tycoon with a stern face and drooping white mustache," who, "wanted more money for himself and his company." (Eberling 1996). Calhoun was one of the town's main promoters, and unlike his distinguished ancestor, would be remembered his for his greed and dishonesty rather than serving his fellow man. Calhoun came to Solano County to recoup the losses he suffered to defend himself against bribery charges while head of the United Railroads. In 1905, a movement to convert a fully electric train complex using underground electric systems was well underway in cities like San Francisco. United Railroads owned a cable car business in San Francisco in the early 1900's. The company was insistent on using the universal overhead electric trolley line. Overhead lines were much cheaper to build but were not as esthetically pleasing. Additionally, United Railroads refused to reduce the fares if the less expensive system was approved. The company did donate \$200,000 to the city to develop its parks. This gesture would prove to be more self-serving than altruistic because the company would receive their money back many times over in fares from park visitors (Bowen 2000: 23).

The earthquake and fire of April 1906 temporarily suspended transportation on the cable cars. Although damage to the various cable slots was not serious, the company reported otherwise in an attempt to force the acceptance of the overhead lines that it favored. In fact, the cable cars could have been carrying passengers within a month of the disaster. Nonetheless, no passengers were carried on these lines for many months after the earthquake because United Railroads would not release information on the true condition of its infrastructure (Bowen 2000: 23). Regarded as the mastermind of the fraudulent scheme, Calhoun was indicted, tried, and acquitted of the charges against him. Although he prevailed in the courtroom, his legal troubles resulting from the United Railroads scheme would cost Calhoun most of his fortune, and forever cast a shadow upon his reputation. In spite of this dubious reputation, the position of executive manager of the Solano City project was placed in his hands (Bowen 2000: 24).

The company of Solano Irrigated Farms was formed and filed its Articles of Incorporation in Solano County on December 4, 1912, with the final approval being filed on January 22, 1913. The corporation was to have a life of 50 years with \$2,500,000 in preferred stock, and \$5,000,000 in common stock at \$100 per share. The newly formed company began making major land purchases throughout eastern Solano County. The purchase by Solano Irrigated Farms included land from Elmira to Collinsville along existing railroad lines and from the Suisun area to the Sacramento area near Rio Vista. Total land holdings included about 175,000 acres including approximately 17 miles worth of land adjacent to existing railroad lines (Bowen 2000: 23). Having control of the land along the railroad meant access to the rest of northern California via railroad and increased commercial prosperity in the area.

In 1913, the Vacaville Reporter announced plans for a "New town of Solano." Surveys and plat maps were completed and construction began. The city was to occupy 1,500 acres across Highway 12 from Denverton, located at the southwest corner of Solano City and between Creed and Lambie Roads. Along with the many residences scheduled for construction, the proposed amenities included a 50-room hotel constructed of fireproof concrete, a bank, telephone service, water, lighting, and a post office. The project was on a fast track to completion and well promoted. One of the primary investors in the project, M.H. DeYoung, was the founder and owner of the San Francisco Chronicle and had recently purchased the San Francisco Call. Undoubtedly, Solano City received positive publicity through advertisements in these publications (Bowen 2000: 24).

*Recorded by: Jason Coleman *Date: April 11, 2008 Continuation Update

In April of 1913, Solano Irrigated Farms bought additional land along the Oakland-Antioch railroad line and announced that a canal was being dredged from the Sacramento River to Solano City, a distance of 9 miles with a width of 75 feet, and a depth of 17 feet. The first 700 acre reservoir was to have water by May and construction on a temporary hotel capable of housing 140 people was nearly complete. The following week Solano Irrigated Farms reported that the dredging was complete. Solano City was planned to have such features as a business district and a waterfront that could receive boats from San Francisco (Eberling 1988). The canal was designed so that ships could dock at Solano City, load or unload, then return to the Sacramento River with having to turn around (Bowen 2000: 25). On July 18, 1913, Solano City was announced as, "The next real estate sensation on the market," and, "the greatest city ever planned." Many people hurried to invest in this ambitious but ill-fated land scheme (Bowen 2000: 23).

Solano Irrigated Farms began showing property to potential buyers on June 9, 1913, with initial sales at the Stewart corner and Denverton extending almost to Suisun. In addition to the good press the project received from the San Francisco publications, The Solano Republican urged Suisun to take advantage of the project in an editorial (Eberling 1988). On August 17, 1913, an estimated 1,000 people arrived to look over the Solano City location. More than 80 autos shuttled people from Suisun City on primitive roads to view and buy land in the "greatest city ever planned." Project promoters claimed buyers had spent a total of \$1,000,000 on farm sites and building sites in Solano City although it is unclear just how many people had bought land (Eberling 1996).

The project came to an abrupt halt on October 17, 1913. Having overextended themselves, the project promoters could not pay their bills including notes and mortgages that were due on October 1, 1913. Solano Irrigated Farms was immediately placed into receivership and the town of Solano City died a quiet death almost overnight. At this point, the Solano City project had spent \$616,000 on land, \$450,000 on irrigation development, and \$132,000 on equipment for a total of almost \$1.2 million. About 300 creditors met in San Francisco on November 7, 1913 to discuss how to get their money back (Eberling 1996). In January of 1914, Paul Foster and Patrick Calhoun attempted to revive the project but were ultimately unsuccessful. Instead of representing a triumph in American urban planning and land reclamation, the Solano City project would become an historical side-note and bear the brunt of countless jokes by local residents. Railroad officials were purported to tell trainmen not to laugh when passengers wanted to get off at Solano City (Eberling 1996). Only the second city in America planned beforehand from start to finish, Solano City will always be known as an ambitious but ultimately doomed undertaking.

Patrick Calhoun, the Solano City project's dubious promoter and the namesake of the Calhoun Cut, filed bankruptcy in 1916 and vanished into obscurity only to surface again in the 1930's with the fortune he made in San Joaquin Valley oil. In 1943 the final chapter in the Solano City saga was written when, at the age of 87, Calhoun was struck and killed by a taxicab in Pasadena while crossing the street (Bowen 2000: 26). Like the Solano City project, Calhoun died a sudden and unceremonious death. The only monument from Calhoun's dream community that remained after the project failed was the shell of a train station, now gone, along the Oakland Antioch & Eastern route (Eberling 1996). Today, between Creed and Hastings Roads, Highway 113 crosses a portion of the canal that bears Calhoun's name. The surrounding area on the Rio Vista side of the road has been designated as the Calhoun Cut Ecological Reserve.

- Bowen, Jerry
2000 *Solano City? Where's That?* The Solano Historian; Vallejo, California
- Eberling, Barry
1988 *Lofty Plans for Solano Irrigated Farms.* The Daily Republic, Fairfield, California.
1996 *Solano City Scheme Hooked a Few Suckers.* The Daily Republic, Fairfield, California.
- Goerke-Shrode
2002 *Solano: The Town that Never Was: Huge Plan Falls Short of Fruition.* For the Vacaville Historical Society, Vacaville, California.
- Luecking, P.
2008 Memorandum dated January 24 to Ben Wallace, Solano Land Trust. Phillip Williams & Associates (PWA), San Francisco, California.

L1. Historic and/or Common Name: Calhoun Cut

L2a. Portion Described: Entire Resource Segment Point Observation **Designation:** Calhoun Cut

b. Location of point or segment: (Provide UTM coordinates, legal description, and any other useful locational data. Show the area that has been field inspected on a Location Map)

Situated 13 km (8 miles) northwest of the City of Rio Vista on unincorporated land in Solano County, Calhoun Cut, generally oriented in an east-west direction, lies 6.5 km (4 miles) north of Highway 12 and is bisected by Highway 113 heading north to Dixon. Additionally, an eastern segment of Robinson Road heads directly into the ecological reserve. Calhoun Cut, now owned primarily by the CDFG, lies surrounded in all directions by old agricultural and cattle-grazing land. Several privately-owned ranches are present in the vicinity, the more prominent being the Peterson Ranch located on the eastern side of Calhoun Cut. The project APE is situated on the northeast corner of Section 26, the northwest corner of Section 25, the southeastern corner of Section 24, and Sections 19, 29, and 30, Township 5 North, Range 1 and 2 East, as illustrated on the Dozier, California 7.5' topographic quadrangle map

L3. Description: (Describe construction details, materials, and artifacts found at this segment/point. Provide plans/sections as appropriate.) Stemming from the Lindsey Slough tidal system, Calhoun Cut was artificially cut in 1913 to a depth of 13 feet to allow shipping access to a proposed but never built community called "Solano City" (Goerke-Shrode 2002). It lies almost 5 km in length (east-west) and about 2.5 km wide, and is the home of ecological preserves under the management of the California Department of Fish and Game (CDFG), and the Solano Land Trust. Owned by CDFG, the reserve lies in the northwest edge of the Sacramento Delta region, just west of the confluence of Lindsey Slough and Barker Slough. Calhoun Cut is now part of the Calhoun Cut Ecological Reserve, a 965-acre parcel of land designated for wetland growth.

L4. Dimensions: (In feet for historic features and meters for prehistoric features)

a. Top Width: ~1500 feet

b. Bottom Width: ~1000 feet

c. Height or Depth: ~13 foot depth

d. Length of Segment: ~6km long

L5. Associated Resources: CA-SOL-1 through 5, newly identified Prehistoric Sites #1-#9

L4e. Sketch of Cross-Section (include scale) **Facing:**

None available.

L8a. Photograph, Map or Drawing



L6. Setting: The slough embankment typical riparian flora can be observed, particularly large impenetrable thickets of tule. The surrounding land consists of valley prairie grassland where cattle graze on old agricultural plots.

L7. Integrity Considerations:

Erosion is badly deteriorating cut embankments.

L8b. Calhoun Cut, SAS-SLT0101-67, facing south.

L9. Remarks: This resource may be eligible for inclusion in the National Register of Historic Places.

L10. Form Prepared by: (Name, affiliation, and address) J. Coleman, Solano Archaeological Services
131 Sunset Avenue, Ste. E 120
Suisun, CA 94585

L11. Date: April 11, 2008

LOCATION MAP

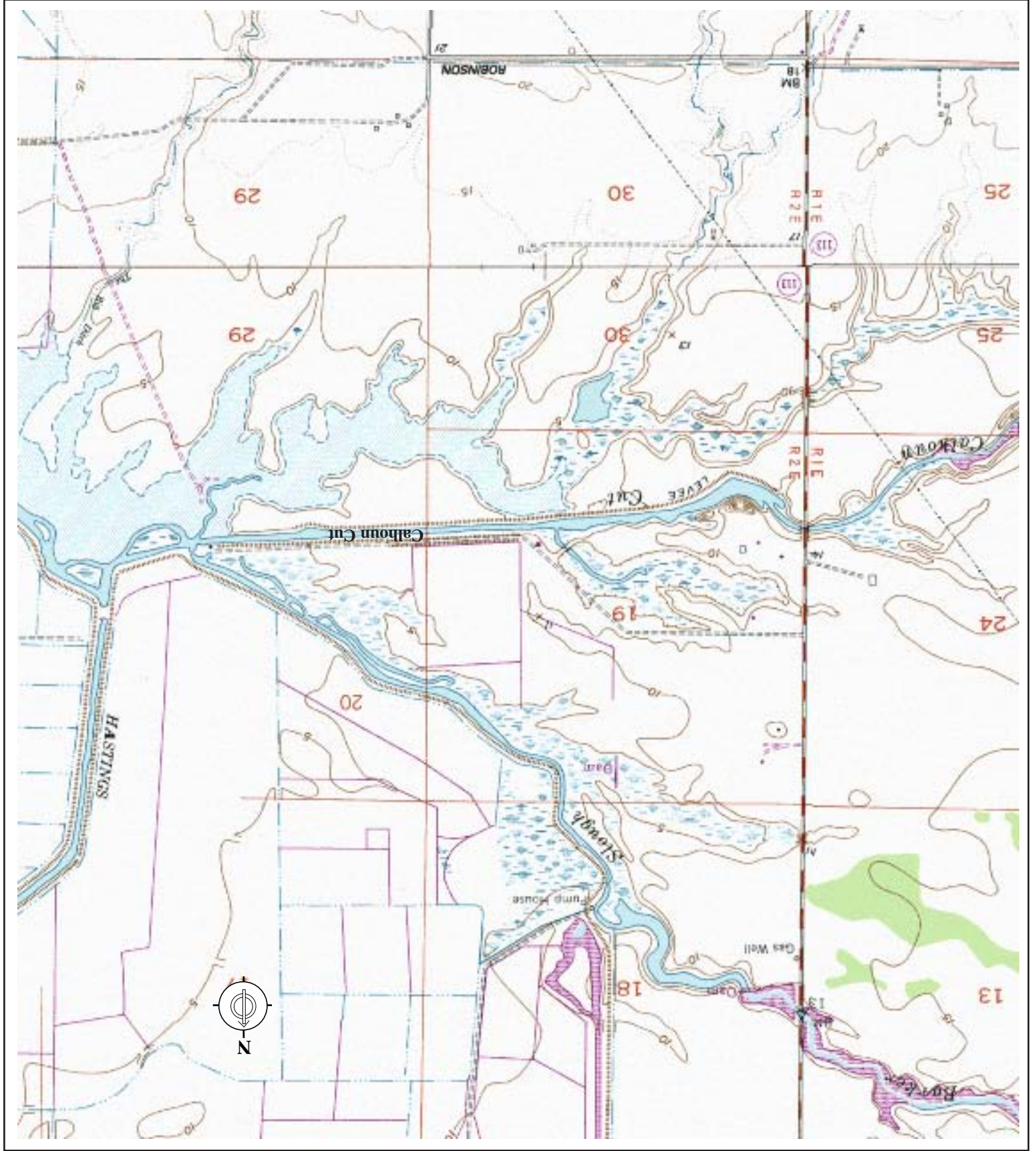
Primary #
HRI#
Triennial

Page 6 of 6
*Resource Name or #: Calhoun Cut

*Map Name: Dozier

*Scale: 1:24,000

*Date of Map: 1951 PR 1968



State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code

Other Listings
Review Code

Reviewer

Date

Page 1 of 2

*Resource Name or #: Prehistoric Site #5

P1. Other Identifier:

*P2. Location: Not for Publication Unrestricted

*a. County: Solano

and (P2b and P2c or P2d. Attach a Location Map as necessary.)

*b. USGS 7.5' Quad: Dozier Date: 1951 PR 1968 T 5 N; R 2 E; NW ¼ of SE ¼ of Sec 20; M.D. B.M.

c. Address: Calhoun Cut City: unincorporated land Zip: unknown

d. UTM: Zone: 10; SOUTH 607,113mE/ 4,235,274mN (G.P.S.) NAD83

NORTH 607,277mE/ 4,235,329m N

e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate) Elevation: 8 feet above sea level.
From Highway 113 travel east on Robinson Road. When Robinson Road veers right, go straight through the gate and follow the dirt access road about 1 km as it veers north toward Calhoun Cut. The site is on the road at the slough.

*P3a. Description: (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

This is a large 300m (N-S) x 100m (E-W) site along the eastern banks of Calhoun cut and Lindsey Slough. Much of the site lies on an existing access/levee road that meanders along the edge of the slough. Midden soils are distinct, containing a light brown, crumbly matrix exhibiting fragments of charcoal and non-marine shell in much larger pieces. Over ten basalt flakes and two basalt tools were identified throughout the site. Although the area was periodically trowel scraped, it is inconclusive as to where or not an intact deposit exists. Riparian vegetation covers much of the site adjacent to the slough, while the west side opens up to cattle-grazing country. This site was discovered during an archaeological study of the Lindsey Slough Tidal Enhancement Project. Known burial sites CA-SOL-1 through 3 (the Peterson Mounds) are in close proximity to Prehistoric Site #5.

*P3b. Resource Attributes: AP2. Lithic scatter

*P4. Resources Present: Building Structure Object Site District Element of District Other (Isolates, etc.)

P5a. Photo or Drawing



P5b. Description of Photo: SAS-SLT-65
Basalt hand tool

*P6. Date Constructed/Age and Sources:

Historic
 Prehistoric Both

*P7. Owner and Address:

CA Department of Fish and Game c/o
The Solano Land Trust
1001 Texas Street, Suite C
Fairfield, CA 94533-5723

*P8. Recorded by:

J. Coleman, Solano Archaeological Services
131 Sunset Avenue, Ste. E 120
Suisun, CA 94585

*P9. Date Recorded:

April 11, 2008

*P10. Survey Type: Intensive pedestrian

*P11. Report Citation: J. Coleman, 2012, Lindsey Slough Tidal Enhancement Project, Solano County, California. Submitted to the Solano Land Trust. Submitted by Solano Archaeological Services.

Goerke-Shrode, 2002, *Solano: The Town that Never Was: Huge Plan Falls Short of Fruition*. For the Vacaville Historical Society, Vacaville, California.

*Attachments: NONE Location Map Sketch Map Continuation Sheet Building, Structure, and Object Record
 Archaeological Record District Record Linear Feature Record Milling Station Record Rock Art Record
 Artifact Record Photograph Record Other (List):

DPR 523A (1/95)

*Required information

LOCATION MAP

