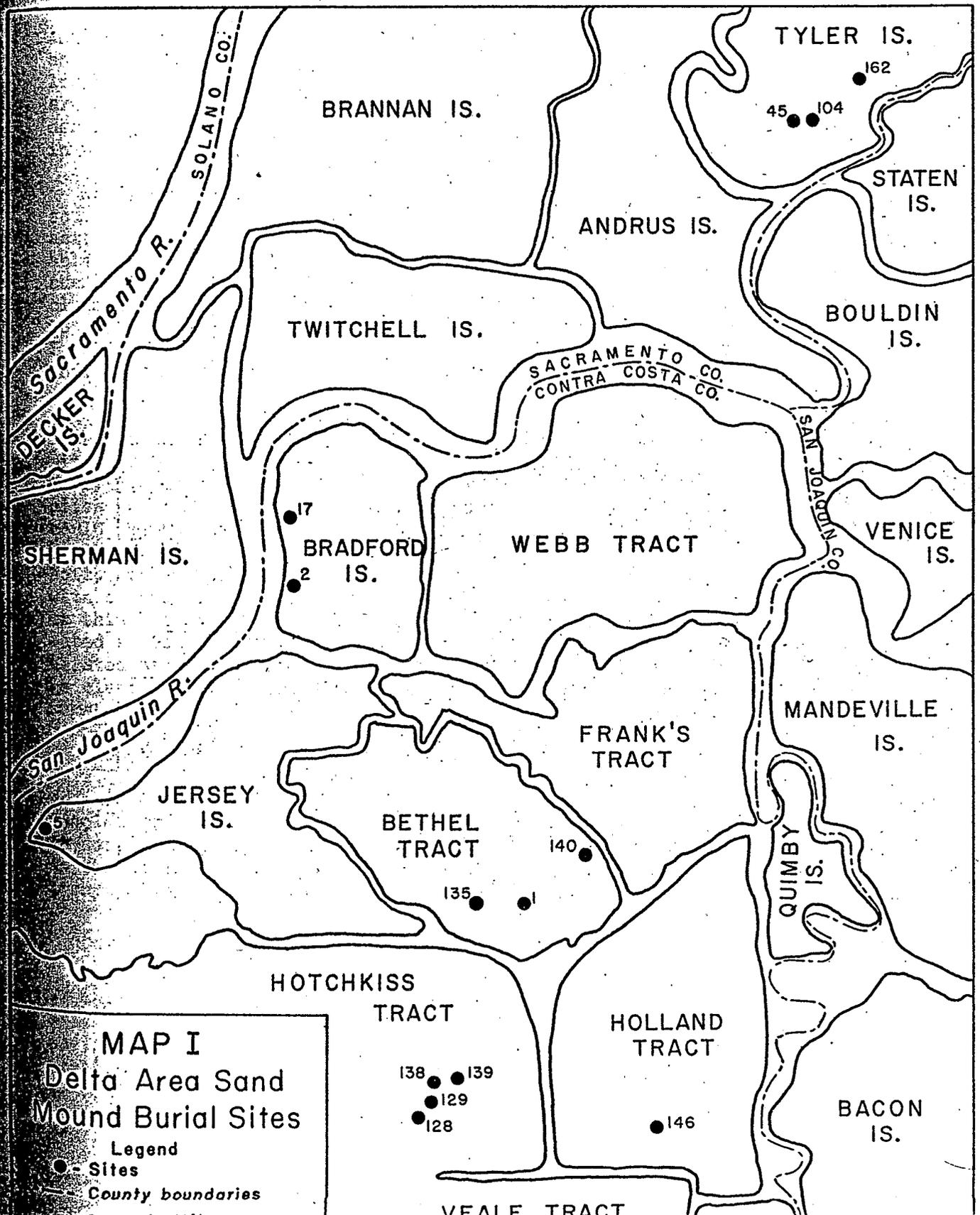


MAP I
Delta Area Sand
Mound Burial Sites

Legend
 ● Sites
 --- County boundaries
 Scale in Miles



C - 0 7 4 9 8 8

CULTURAL RESOURCES INVENTORY AND EVALUATION OF
DELTA WETLANDS WATER STORAGE PROJECT,
CONTRA COSTA AND SAN JOAQUIN COUNTIES,
CALIFORNIA

Prepared For:

JONES & STOKES ASSOCIATES, INC.

1725 23rd Street
Sacramento, California

FEBRUARY 24, 1989

Final Report

Submitted By:

PAR & ASSOCIATES

P.O. Box 160756
2116 T Street
Sacramento, California

**CULTURAL RESOURCES INVENTORY AND EVALUATION OF
DELTA WETLANDS WATER STORAGE PROJECT,
CONTRA COSTA AND SAN JOAQUIN COUNTIES,
CALIFORNIA**

Prepared For:

JONES & STOKES ASSOCIATES, INC.

1725 23rd Street
Sacramento, California

By:

Mary L. Maniery
and
Keith A. Syda

With Contributions by
Judith Cunningham

FEBRUARY 24, 1988
Final Report

Submitted By:

PAR & ASSOCIATES

P.O. Box 160756
2116 T Street
Sacramento, California

PREFACE

Delta Wetlands proposes to create water storage reservoirs on Webb and Holland tracts, Bacon and Bouldin islands to impound high winter flows in the Delta region. Plans call for a reconstruction of interior levees on each island to accommodate increased erosion from wave action. Water would be stored on the islands from January through April and would be discharged back into the Delta from May through July. During the remainder of the year activities would focus on creating riparian habitat and operation of duck hunting clubs.

A cultural resources investigation was conducted on the four islands between September, 1988 and February, 1989, in compliance with CEQA guidelines and Section 106 of the National Historic Preservation Act. These laws protect significant archaeological, architectural, or engineering sites, buildings, districts, or cultural lifeways important to interpreting history or prehistory of a region. The work was conducted under contract between Jones & Stokes Associates and PAR & Associates, both of Sacramento. Mary L. Maniery acted as Principal Investigator during the project. Judith Cunningham served as architectural historian. Archaeological fieldwork was directed by Keith Syda and Randy Bethard and was completed between December 15, 1988, and January 31, 1989. The following report documents the results of archival research and field reconnaissance and provides preliminary significance assessments of cultural resources identified on each island.

Twenty-five sites and 22 isolated features or artifacts were identified and recorded during the survey. Records have been submitted to the California Archaeological Inventory, Northwest Information Center (Holland and Webb tracts), and South Central Information Center (Bacon and Bouldin Islands). Six sites and 22 isolated features or artifacts are not considered potentially eligible to the National Register of Historic Places due to the lack of research potential or lack of integrity. Three prehistoric sites on Holland Tract are potentially eligible to the Register under criterion 36 CFR 60.4 (d). Thirteen sites (including 54 standing historical structures) are included within the proposed Bacon Island Historical District and are potentially eligible for inclusion to the Register under 36 CFR 60.4 criteria (a), (b), and (d). Three historical archaeology sites, two on Bouldin and one on Webb Tract, are also potentially eligible to the Register under criterion 36 CFR 60.4 (d).

Prehistoric human remains have been identified within the project. These remains, and others that may be present on the islands, are protected under Public Health Codes and Senate Bill 297. Delta Wetlands is advised to work with the Native American Heritage Commission in Sacramento to devise appropriate treatment plans for these sensitive resources.

Certain information contained in this report is of a confidential nature and PAR recommends that site-specific data not be released to the general public. Of further note, as with any surface survey, vegetation and standing water inhibited ground visibility in some areas during the project. In addition, several areas of high prehistoric sensitivity exist on Holland and Webb tract. While no surface indications of prehistoric use was evident at these location, it is possible that subsurface deposits may exist. If state and federal permits are issued to the project proponent, then these deposits are protected under CEQA and Section 110(a)(2) of the NHPA. In the event any historic properties are uncovered during the life of the project, Delta Wetlands is required to stop work in that immediate vicinity and to contact the SHPO in Sacramento for a determination of resource significance.

TABLE OF CONTENTS

PREFACE	ii
INTRODUCTION	1
Scope of Work	1
Previous Investigations	2
PROJECT GUIDELINES AND METHODS	4
Framework for Analysis	4
Research Goals	6
Methods and Techniques	6
Archival Research	6
Field Research	8
Bacon Island	8
Bouldin Island	10
Holland Tract	10
Webb Tract	10
Historic Sites Survey	11
ENVIRONMENTAL AND CULTURAL SETTING	16
Environmental History	16
Prehistoric/Archaeological Setting	16
Ethnographic Setting	18
Historic Setting	19
Reclamation - 1860-1900	19
Reclamation - 1900-1920	21
Agriculture	23
Other Uses	26
SURVEY RESULTS	28
Bacon Island	28
Bouldin Island	39
Holland Tract	45
Webb Tract	49
RESOURCE EVALUATION	55
Bacon Island	55
Bouldin Island	60
Holland Tract	61
Webb Tract	61
IMPACTS AND MITIGATION MEASURES	63
Impacts on Historic Sites	63
Impacts on Prehistoric Sites	64
Recommended Mitigation Measures	65
Bacon Island	66
Bouldin Island	68
Holland Tract	68
Webb Tract	68
General Mitigation Recommendations	69

SUMMARY AND CONCLUSIONS	70
Resources Judged Ineligible	70
Sites Judged Potentially Eligible	70
Conclusions	72

REFERENCES CITED	73
------------------	----

APPENDICES

- A. Resource Location Maps
- B. Site and Isolated Feature Records (Bound Separately)

LIST OF FIGURES

1. Vicinity Map	3
2. Archaeological Survey Coverage Map - Bacon Island	12
3. Archaeological Survey Coverage Map - Bouldin Island	13
4. Archaeological Survey Coverage Map - Holland Tract	14
5. Archaeological Survey Coverage Map - Webb Tract	15
6. Overview of Camp #2 on Bacon Island	32
7. Views North and West of Boarding House #14, Camp 3, Bacon Island	34
8a. Craftsman-style residence at Shima's Camp #11, Bacon Island	38
8b. Bridge Tender's House on Bacon Island	38
9. Medicinal and Ink Bottles from BI-2; dated 1925-1930	42
10. Diagnostic Obsidian Tools from CA-CC0-147	50
11. George Shima's office at Camp #3, Bacon Island	59

LIST OF TABLES

1. Repositories/Agencies Visited or Contacted	7
2. Summary of Surveyed Acreage	9
3. Summary of Reclamation Efforts in the Delta Wetlands Project	22
4. Presently Identified Cultural Resources on Bacon Island	29
5. Architectural Data Summary of Bacon Island	31
6. Presently Identified Cultural Resources on Bouldin Island	40
7. Presently Identified Cultural Resources on Holland Tract	46
8. Presently Identified Cultural Resources on Webb Tract	51
9. Architectural Data Summary of Bouldin Island, Holland Tract, and Webb Tract	52

INTRODUCTION

Delta Wetlands proposes to create water storage reservoirs on Webb and Holland Tracts, Bacon Island, and Bouldin Island to impound high winter flows in the Delta (Jones & Stokes Associates 1988). The islands are all located in the Sacramento/San Joaquin River delta and are within Contra Costa and San Joaquin counties (Figure 1). Webb and Holland tracts are situated in southeast Contra Costa County east of Antioch and Oakley. Franks Tract State Recreation Area separates the two tracts. Bacon and Bouldin Islands are within San Joaquin County and are west and north of Stockton. Bouldin is crossed by state route 12 and is immediately west of Terminous. The southern edge of Bacon Island is bordered by the Southern Pacific Railroad. Old River separates Bacon and Holland from each other while the San Joaquin River flows between Webb and Bouldin.

Ideally, water would be stored on the islands between January 1 and April 30 and would be discharged back into the Delta from May to July 31. August and September would be used for revegetation and seeding and the islands would be partially flooded between October and December to create riparian habitat and to facilitate private duck hunting clubs operating during those months. Project alternatives that are being considered include no project, increasing the amount of water stored on each islands, and intensifying agricultural use. The latter alternative would result in a change in the types of crops currently being grown on Bacon and Bouldin islands, and an increase in weed eradication and ditch maintenance programs on Bouldin Island and Webb Tract. Intense agricultural use on Holland Tract would require redevelopment of agriculture and ditch maintenance systems on the island, a weed and rodent control program, reinstatement of hog feeding, and a shift to orchards and vineyards as a crop type (Jones & Stokes Associates 1988).

Scope of Work

In September, 1988, PAR & Associates (PAR) conducted archaeological and historical record searches, limited field reconnaissance, and preliminary assessments of the archaeological sensitivity of the Delta Wetlands project under contract with Jones and Stokes Associates (J&S). Based on this work, PAR identified areas of historical sensitivity on all four islands and prehistoric sensitivity on Holland and Webb tracts. Historic resources were confined to areas around the perimeters of the islands (on or at

the base of the levees), while prehistoric resources occurred in association with Piper soils deposits (Maniery 1988).

Consultation between the State Water Resources Control Board (SWRCB) and J&S led to an agreement that a 100-percent survey of the identified prehistoric and historically-sensitive areas, in combination with a 20 percent sample survey of each island's interior, was adequate to identify cultural resources within the Delta Wetlands project. In addition, a historic sites survey was recommended for all islands to assess the potential significance of standing structures within the project. This report summarizes results of the record search conducted in September, 1988, and documents the archaeological and historic sites surveys completed for each island.

Previous Investigations

Numerous investigations have been carried out near the Delta Wetlands project since the advent of cultural resource management laws passed by 1970. The majority of these have consisted of inventories and preliminary evaluations and have focused on Bethel Island and the Hotchkiss Archaeological District, both situated west of the project (cf. Bard and Busby 1978; Desgrandchamp and Chavez 1984; Hampson 1985; Jackson and Fredrickson 1979; Jones et al. 1980; Moratto et al. 1974; Poswall 1978; Weigel 1981). The State Lands Commission and California Department of Parks and Recreation have also conducted work in the region (Paterson et. al 1978; Waugh 1986).

Two of these projects, conducted by Hampson (1985) and Paterson et. al (1978), discussed resources on all or portions of the four islands currently under study. An extensive historical evaluation of the Delta waterways, prepared by Paterson, Herbert, and Wee under a contract with State Lands Commission, included data on all islands within the Delta Wetlands project. In particular, reclamation work on Bouldin and Bacon Islands was discussed in detail (Paterson et al. 1978). Hampson surveyed 50 acres in the southern portion of Holland Tract in 1985 for Jack Williams Ranches but did not locate any cultural resources. Results of these investigations are incorporated into the prehistoric and archaeological summary presented below.

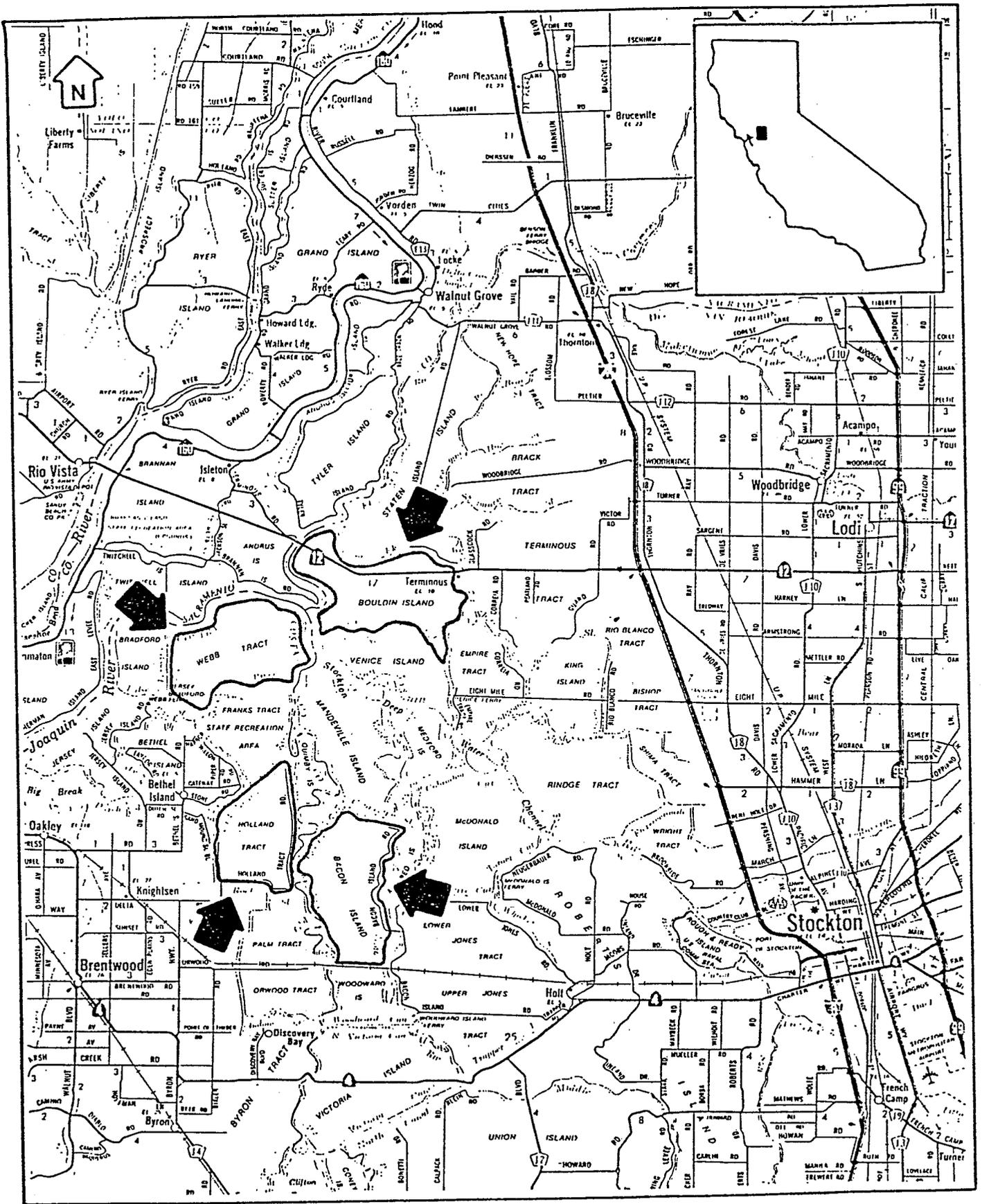


Figure 1. Vicinity Map

PROJECT GUIDELINES AND METHODS

Framework for Analysis

The cultural resources survey was conducted in compliance with the California Environmental Quality Act and Section 106 of the National Historic Preservation Act. The National Historic Preservation Act of 1966 (NHPA) as amended (80 Stat. 915, 94 Stat. 2987; 16 USC 470) requires federal agencies to inventory, evaluate, nominate, and attempt to preserve cultural resources, both on federal lands and on lands over which the federal agencies have permit, licensing or financial authority. Issuance of a 404 permit by the Army Corps of Engineers requires compliance with NHPA.

Section 106 of NHPA directs federal agencies to take into account the effect of their "undertakings" on cultural resources and to afford the Advisory Council on Historic Preservation an opportunity to comment. In addition, until it has been determined that a resource is not significant, it must be managed as if it were, in compliance with section 110(a) (2) of the NHPA, which requires that resources be located, inventoried and assessed for significance.

Cultural resource significance is evaluated in terms of each resource's eligibility for listing in the National Register of Historic Places (36 CFR 60.4 [48 R 46306]) as outlined below.

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

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

Sites younger than 50 years, unless of exceptional importance, are not eligible for the National Register.

An integral part of assessing cultural resource significance, aside from applying the above criteria, is the physical integrity of the resource. Prior to assessing a resource's potential for listing on the National Register, it is important to understand the subtleties of the seven kinds of integrity mentioned in 36 CFR 60.4. To summarize a National Park Service (NPS) handbook, entitled How to Apply the National Register Criteria for Evaluation (1982:35-36), the types of integrity are defined as:

- o Location is where a historic resource was constructed or where an important event took place.
- o Design is the basic look and creation of the resource and includes organization of space, proportion, scale, technology and ornament.
- o Setting applies to the physical environment of the historic or prehistoric property and should illustrate the character of the place in which the resource played its role.
- o Materials includes the artifacts and features deposited at the resource during a particular period.
- o Workmanship is the physical evidence of the crafts of a particular culture and can apply to buildings, machinery, pottery, and construction techniques, for example.
- o Feeling is intangible but depends upon the quality of the resource in portraying a sense of the historic past.
- o Association is the direct link between a property and an event, person, etc., that makes the property significant.

To qualify for the National Register, a resource must have at least two types of integrity and meet one of the criteria listed above.

California Environmental Quality Act (CEQA) of 1970, as amended (Title 14, California Administrative Code, Appendix K 1983:324.13-324.16), requires that five criteria be considered in assessing cultural properties in compliance with CEQA regulations. These criteria are:

- A. Is the resource associated with an event or person of 1) recognized significance in California or American history or 2) recognized scientific importance in prehistory;
- B. Can the resource provide information that is both of demonstrable public interest and useful in addressing scientifically consequential and reasonable archaeological research questions;
- C. Does the resource have a special or particular quality such as oldest, best example, largest, or last surviving example of its kind;

- D. Is it at least 100 years old and possesses substantial stratigraphic integrity; or
- E. Does it involve important research questions that historical research has shown can be answered only with archaeological methods.

Research Goals

In light of the above, the inquiry at this level of research is to determine if any historic properties within the project area qualify for listing on the National Register of Historic Places or meet CEQA criteria. To address this question, a survey was performed to locate, identify, record, and assess all cultural resources within the Delta Wetlands project.

The specific goals of the survey were:

- o Locate, record, and map all cultural resources within areas identified as high archaeological sensitivity (i.e., Piper soil areas);
- o Survey a 20 percent sample of each island or tract interior;
- o Record and map all historic and prehistoric cultural resources identified in the preliminary assessment report;
- o Conduct a historic sites survey of standing structures on all islands built prior to 1946;
- o Assess the research potential of all recorded cultural resources within the project; and
- o Provide a report documenting methods and results of the survey, including evaluations of significance and assessment of sites in terms of their potential eligibility for listing on the National Register of Historic Places and significance under CEQA guidelines, as appropriate.

Methods and Techniques

Archival Research. Extensive archival research was completed as part of the preliminary assessment phase of the initial project (c.f. Maniery 1988) and as part of the historic sites survey. Eighteen repositories, agencies, and individuals were visited or contacted by PAR staff and site specific data was collected (Table 1). Research focused on examining historical maps, written histories, and census material for each island to identify landing sites, agricultural camps, and other activity areas originally present

Table 1. Repositories/Agencies Visited or Contacted

Place/Location	Information
Northwest Information Center, Sonoma State University*	Previously recorded site records, survey reports, excavation field notes, soil survey data, National Register of Historic Places listings.
South Central Information Center, California State University, Stanislaus*	Previously recorded site records and survey reports, National Register of Historic Places listings.
Native American Heritage Commission, Sacramento*+	Native American concerns, sacred areas, referral list of consultants
William Franklin, lone+	Native American concerns
California State Historic Preservation Office, Sacramento*	Ethnic survey data, historic sites survey file, points of historic interest listings, Native American concerns, architectural data
California Room, California State Library, Sacramento+	Historic maps, county histories.
Government Publications, California State Library, Sacramento+	Historic maps, soil reports.
Mickey Grove Museum, Lodi+	San Joaquin County records, reclamation district maps.
San Joaquin County Assessors/Recorders Office, Stockton+	Plats and deeds.
Contra Costa County Assessors/Recorders Office, Martinez+	Plats and deeds, reclamation district records.
State Lands Commission, Sacramento*	Cultural resources reports.
USDI, Bureau of Land Management, Sacramento+	General land office plat maps, field notes.
Contra Costa County Coroner's Office*	Burial data
State Department of Water Resources*	Past cultural resources reports
US Army Corps of Engineers, Sacramento*	Past cultural resources reports
Gene Baugh, caretaker+	Site specific information, Holland Tract
Hong Huey, farmer+	Local history, site specific information, Bacon Island
Mr. Marvin, ferry operator+	Local history, site specific information, Webb Tract

* = contacted by letter or telephone
+ = visited

in the project that may be represented in the field. Archival research was also conducted during the field phase of the project to aid in the identification of construction dates for buildings on the islands and to assess potential site significance.

Field Research. After completing archival research, areas of potential archaeological sensitivity were identified for each island. Generally, these consisted of any area marked as Piper sandy loam or Piper sand on county soil maps (USDA n.d.) and locations of historic resources situated around the perimeter of each island. Aside from the Piper soils, no areas of high archaeological sensitivity were identified in the interior portions of the islands. After consultation with SWRCB and J&S, it was decided that a survey of a 20-percent sample of each island's interior, in addition to Piper soil regions and identified historic locations, would adequately identify cultural resources within the project (Table 2).

Land within all four islands was surveyed by PAR staff using a complete survey strategy. Crew members walked transects spaced 20 to 30 meters apart. Each transect generally followed furrows in plowed fields, resulting in precisely spaced coverage over lengthy distances. Fallow fields and pastures were walked with the aid of a compass. Roads and ditches provided excellent parcel boundaries on all tracts. In some areas, however, the ditches were uncrossable, making it necessary to survey the parcel in sections or to circumnavigate the ditch and realign on the other side before continuing the transect.

Piper soil areas were located on Holland and Webb tracts and were surveyed using a complete coverage. North/south or east/west transects were conducted across the piper mound at 20-meter intervals. Road cuts, cut banks, and ditches were examined carefully for evidence of any buried deposits. Where necessary, the ground surface was scraped to reveal the mineral surface.

Although sample areas were plotted on maps prior to beginning the fieldwork, rain and seasonal flooding of tracts made it necessary to change strategy in the field. Small flooded areas (0.5 acres or less) were navigated, while large flooded areas were avoided. In the latter case the surveyors walked adjoining, unflooded parcels to account for the unsurveyable acreage.

Bacon Island

Excluding the levees, Bacon Island contains 5,500 acres of land, all used for agriculture. PAR surveyed 1,095 acres of land, spaced evenly in all four quarters of

Table 2. Summary of Surveyed Acreage

Island/Tract	Surveyable Acres	Required 20% Sample of Interior Acres	No. of Interior Acres Surveyed	No. of Piper Soil Acres Surveyed	Total Surveyed Acres	Total Portion Sampled (%)
Bacon Island	5,360	1,072	1,095	0	1,095	20
Bouldin Island	5,825	1,165	1,460	0	1,460	25
Holland Tract	3,690	792	870	221	1,091	30
Webb Tract	4,450	890	890	335	1,225	27
TOTAL	19,325	3,919	4,315	556	4,871	25

the island as part of the 20-percent sample (Figure 2). In addition, a cursory inspection of land along the base of the levee was completed by driving slowly on the levee road and stopping to field check any likely looking spot or historic location. No Piper sand mounds were present on Bacon Island and ground visibility was excellent in all surveyed parcels.

Bouldin Island

Bouldin Island contains over 5,800 acres and is the largest within the project. Initially, PAR projected that 1,165 acres would need to be surveyed to complete the 20-percent sample. Approximately one-fifth of the island was flooded during the fieldwork and parcels located within the flooded areas were abandoned and new, adjacent parcels were substituted. Flooded areas were later drained and PAR surveyed 295 additional acres within these parcels in order to more evenly sample the entire island (Figure 3). Similar to Bacon Island, no Piper soils were present on the Island and ground visibility throughout the majority of the parcels was excellent.

Holland Tract

PAR sampled 870 acres on Holland Tract, and surveyed an additional 221 acres of Piper soils. Approximately 800 acres in the southwest quarter of the tract were not sampled due to access limitations. This area contains about 100 acres of Piper sand mounds. In addition, a small lake and marshy area in the northeastern portion of the tract were not sampled (Figure 4).

Three Piper soils areas depicted in the Contra Costa County soils survey (USDA n.d.) are no longer visible in the field. One small Piper soil area in the northeast corner, another in the center, and a third in the southern edge of the tract were not located due to lack of mounded topography and dense vegetation. Several mounds have been removed by agricultural pursuits in the last 25 years and were not located. Visibility was poor in about 120 acres of the sample area surveyed due to heavy vegetation; the remaining parcels had excellent ground visibility.

Webb Tract

Several areas of Webb Tract were not accessible to PAR due to private ownership. The northeast quarter of the tract, encompassing approximately 600 acres, and a 120-acre parcel in the south central portion of the tract were not included in the sample. In

addition, a large lake and associated marshland, remnants of a levee break in 1950, prohibited survey of an additional 500 acres in the northcentral portion of Webb.

A total of 890 acres were sampled on the tract (Figure 5). In addition, 302 acres of Piper soils were closely inspected. Several areas of Piper soils identified through soil surveys were not located in the field due to leveling of mounds by agricultural activities or heavy vegetation. Approximately 140 acres surveyed on Webb Tract contained standing water, vegetation, or mud, resulting in poor ground visibility.

Historic Sites Survey. Standing structures on each island were described in terms of architectural design and photographed. If part of a complex, a sketch was made of the complex, using existing blue-line topographic maps as a base. Historic structures were numbered and their physical location in relationship to other buildings in the complex was noted. State of California Historic Site Inventory Forms were completed for those structures that were constructed before 1946.

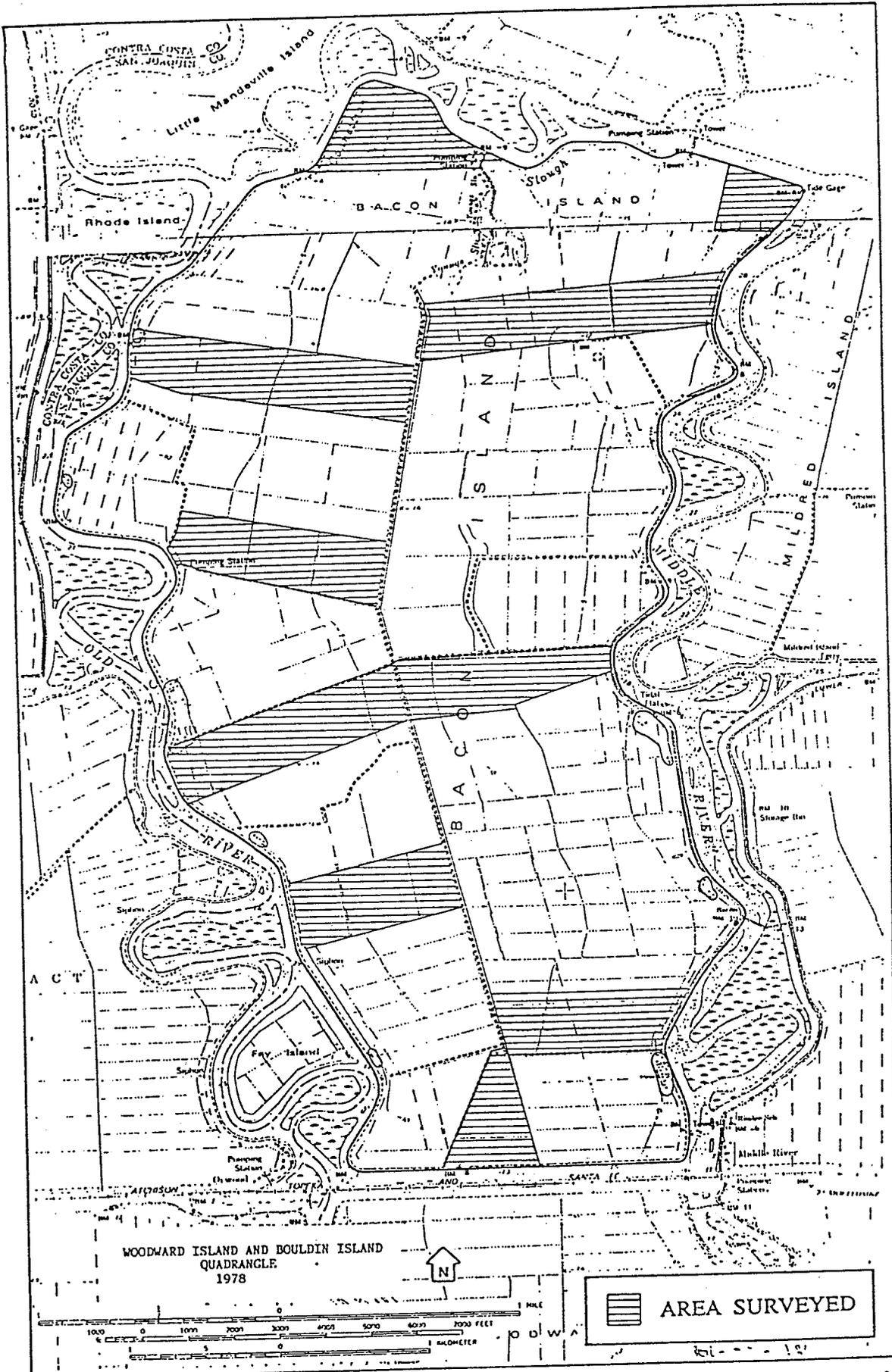


Figure 2. Archaeological Survey Coverage Map - Bacon Island

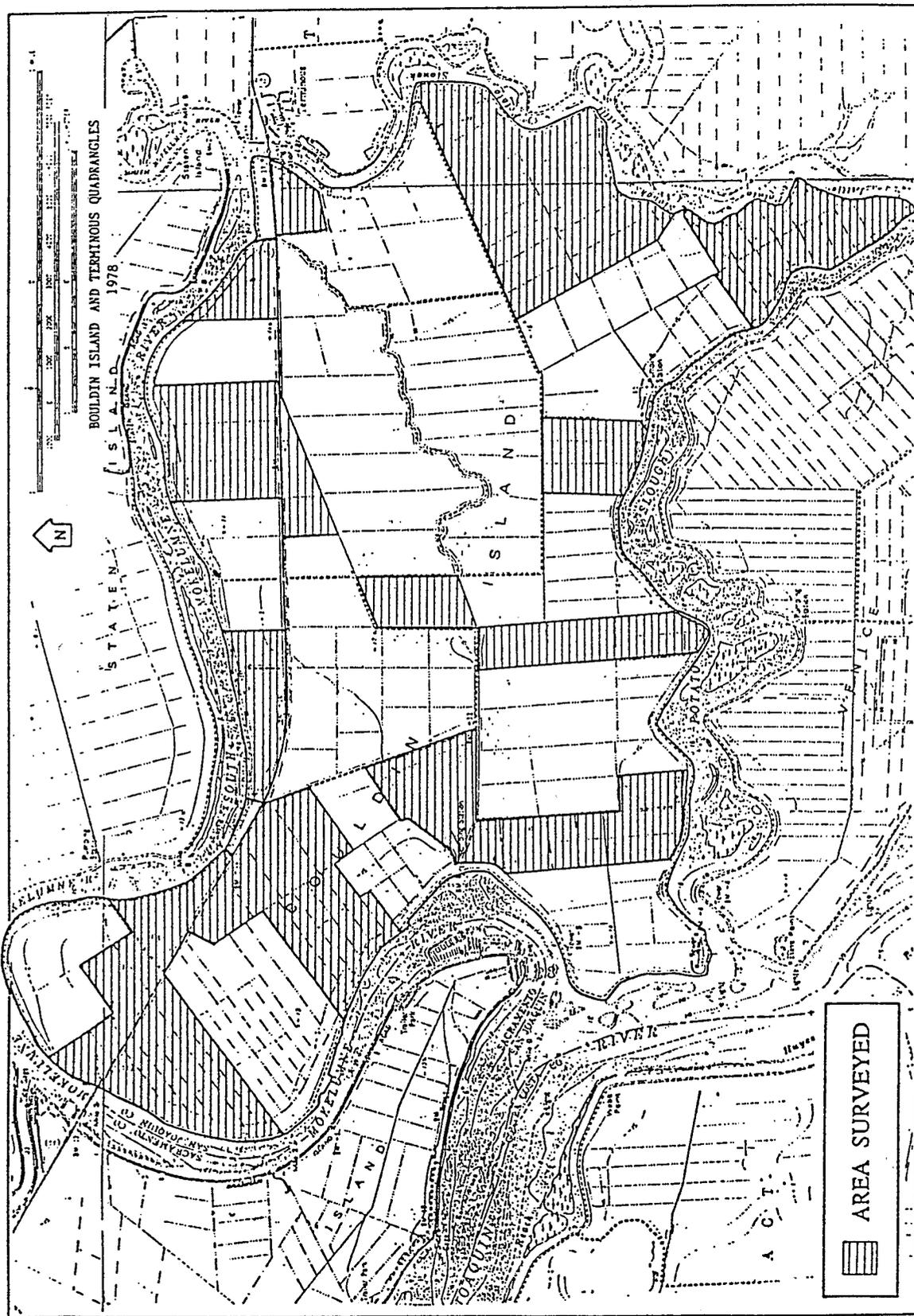
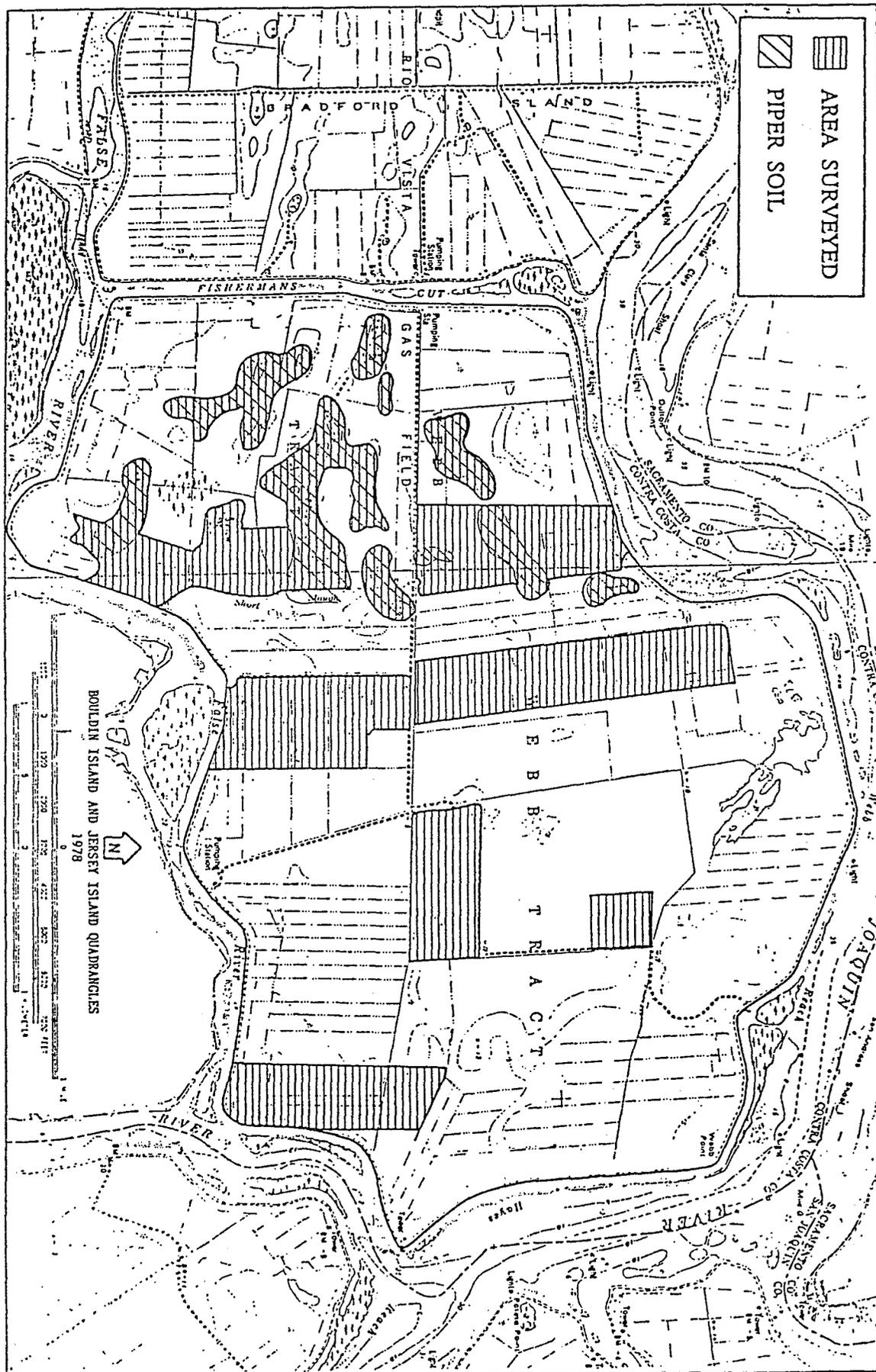


Figure 3. Archaeological Survey Coverage Map - Bouldin Island

Figure 5 Archaeological Survey Coverage Map - Webb Tract



ENVIRONMENTAL AND CULTURAL SETTING

Environmental History

Prior to the Pliocene flooding of the San Francisco Bay (approximately 11,000 years ago) the present day Delta was part of a large river valley of the Lower Sacramento and San Joaquin rivers. The environment was entirely different than today, with oak woodlands and savannah bordering the rivers. With the advent of the Pliocene period, sea levels rose, flooding the lower part of the Sacramento Valley. The rivers slowed their flow to the sea and deposition of inorganic and organic matter increased, slowly forming the Delta marshland. The marshland, being at or below sea level, contained a variety of ecological zones cut by many sloughs and meanders. Numerous sand mounds provided high spots throughout the marshes (Desgrandchamps and Chavez 1984; Hackel 1966:217-238).

Reclamation of the delta marshes began in the 1850s but reached its peak in the late 19th and early 20th centuries. During this time levees were built, the marshes were drained, and the subsequent reclaimed land was utilized for agriculture, pasture lands, and recreation. Intensive agricultural use has resulted in land subsidence caused chiefly by intensive pumping of ground water and oxidation of peat lands (Poland and Evenson 1966:239-248). Today the islands support a variety of crops including potatoes, sunflowers, onion, asparagus, and corn, as well as vineyards on Bacon Island.

Prehistoric/Archaeological Setting

Prior to Delta reclamation, small hummocks or islands of sand protruded from the tule marshes of the Delta. Composed primarily of Piper sands and loam, these islands were above flood level and were used by prehistoric and ethnographic populations for villages and/or burial sites. Transportation between the small islands was by tule canoe. The use of these hummocks allowed for a greater exploitation of the resources in the Delta, such as waterfowl, fish, freshwater shellfish, and game (Desgrandchamps and Chavez 1984:14). Over time, the sand mounds were often covered with a peat deposit, the result of repeated and long-term flooding.

Not surprisingly, the archaeological sites that have been recorded or excavated to date in the Delta are all located on small mounds of Piper fine-grained sandy loam soil, remnants of those areas that were above sea level in prehistoric times. The archaeological record indicates that the earliest recognized prehistoric use of the region

dates from approximately 2500 B.C. to 1000 B.C. and has been labeled the Early Horizon (Fredrickson 1974); however, it is probable that the Delta region was used much earlier, but that evidence of this use is buried beneath river alluvium or peat deposits (Waugh 1986:CR-11). The Early Horizon is characterized by distinctive shell ornaments and charmstones, large projectile points with concave bases and stemmed points, baked clay balls (used for cooking), fishing implements and grinding tools (Moratto 1984).

Burials were almost always extended, faced down, and were westerly oriented (Heizer 1949). Early Horizon burials have typically been recovered from lower levels of indurated sand mounds. Known sites have been discovered through initial exposure by agricultural activities; little or no surficial evidence is present at these sites.

The Middle Horizon period in the Delta has been dated from ca. 1000 B.C. to A.D. 500. Sites associated with this period often overlie Early Horizon sites and contain substantial midden deposits with shell, mammal and fish bone, charcoal, grinding tools, and other artifacts. Increased use of obsidian, shell, and bead assemblages indicate a greater complexity of exchange networks and social stratification during this time period. Burials were flexed, as opposed to extended (Frederickson 1974; Waugh 1986:CR-12-CR-13).

The Late Horizon in the Delta dates from A.D. 500 to Spanish incursion in the region (approximately A.D. 1800). This phase is marked by large village sites situated on high ground, use of the bow and arrow (as indicated by small projectile points), presence of shell beads, and increased acorn and nut processing. Deeply serrated projectile points (often referred to as Stockton serrated) and small, convex-based side-notched projectiles are diagnostic implements used during this period (King 1978:68). Clam shell disc beads, used as a medium of exchange, continued exchange of commodities for obsidian, and glass trade beads indicate an extensive exchange system in operation during the Late Horizon (Moratto 1984). The end of the Horizon, within the last 500 years, saw an increase in the use of cremation as a mortuary practice (Johnson 1982:40).

The Delta region was occupied into the first quarter of the nineteenth century, when a combination of epidemics and forced removal to Spanish missions effectively eliminated the Native population of the area (Bennyhoff 1977). Moratto (1984), Waugh (1986), Fredrickson (1974), and Desgrandchamps and Chavez (1984) present summaries of the known prehistoric complexes in the region. The reader is referred to these sources for detailed overviews.

Sixteen archaeological sites have been recorded or excavated within several miles of the islands: 12 on Bethel Island and Hotchkiss Tract, two on Veale Tract, and two on Holland Tract. Ten of these are burial sites with no midden deposit, whereas the remaining sites contain both burials and midden. Generally, the burials occur in the hard, almost compact sand situated below the upper peat deposits, possibly indicating that the burials are older than the midden and habitation debris that occur in the more recent, upper peat deposits (Cook and Elsasser 1956; Desgrandchamps and Chavez 1984:15). In most cases, the burial style is typical of the Early Horizon culture, while the artifacts and midden deposit materials are more characteristic of the Middle Horizon, leading some investigators to suggest that these sites represent a transition phase between the Early and Middle Horizon (labeled an early Middle Horizon phase) (Cook and Elsasser 1956; Waugh 1986:CR-12). The majority of the sites also contain Late Horizon components.

Fifteen of the resources were found accidentally through plowing, leveling, or ditching. Researchers in the Delta region point out that most of the known burial sites are impossible to locate from the surface because there is no distinctive accumulation of occupation debris or a soil color change as in midden sites. It is only when the hard, compact sand layer is penetrated through agricultural pursuits, flooding, or other impacts that the burial deposits are exposed (Cook and Elsasser 1956). This has led several investigators to believe that the recorded sites in the Delta are only a random sample of what is potentially present, perhaps only a small fraction of the total number yet to be discovered (Cook and Elsasser 1956:32; Fredrickson 1974).

Ethnographic Setting

Ethnographically, the Delta region was inhabited by several groups, including the Bay Miwok (Contra Costa County), the Plains Miwok (Sacramento County and a portion of San Joaquin County), and the Northern Valley Yokuts (San Joaquin River). All of these groups relied on the rich resources of the Delta for both dietary needs and material culture. Tules provided material from the stalks that were woven into matting and used for house and canoe construction and clothing, while the roots were pounded and used for food. Acorns, collected on yearly excursions to the foothills and stored in granary bins, provided the dietary staple, complemented by the abundant waterfowl, fish, shellfish, and large game that lived in or visited the Delta (Bennyhoff 1977; Levy 1978; Waugh 1986).

Permanent settlements were located on high ridges or knolls near watercourses or on the sandy islands in the Delta. The islands were also used regularly for hunting and fishing base camps. Social structure was centered around the tribelet, with small satellite villages radiating from a main tribelet center (Kroeber 1925).

The native way of life changed after 1790, with increased forays into the Delta region by Spanish soldiers in search of potential mission neophytes. The main river groups of the region were forced into the mission system between 1806 and 1813 (Milliken 1982). The natives that were not removed to the missions succumbed to European-introduced diseases that spread through the Delta between the late 1700s and circa 1835 (Levy 1978:400). By the time ethnographers began gathering data in the late 1800s, there were virtually no survivors of the Delta tribelets (Levy 1978). Ethnographic summaries of the various Native groups who occupied the area are provided in Bennyhoff (1977) and Levy (1978).

Historic Setting

Historical use of the Delta has centered around reclamation, agriculture, and recreation. Several documents have summarized the history of the region, particularly Paterson et al. (1978) and Waugh (1986), and the reader is referred to those sources for overviews. The synthesis presented below focuses on those islands included within Delta Wetlands project.

Reclamation - 1860-1900. When the gold rush began in 1848 the Delta consisted of a series of waterways interspersed with islands formed by natural sand levee deposits. American entrepreneurs viewed the area as potential farmland, recognizing the richness of the upper peat soil deposits. The passing of the Swamp and Overflow Land act of 1850 transferred ownership of the Delta from the federal government to the state and opened up the land for speculation by land developers (Thompson and West 1879). Soon after reclamation districts were established and attempts to reclaim the islands began in earnest. Bouldin Island was one of the islands included in the Swamp and Overflow Land act and was included in Swamp Land District No. 22 in 1861; however, no serious attempts to reclaim the island were made at that time (Paterson et al. 1978:16; San Joaquin County).

Massive efforts in the Delta did not begin until the late 1860s, when Chinese laborers laid off from railroad construction provided the work force necessary for the all-out effort. The first of the Bedford islands to be reclaimed was Bouldin Island.

Bouldin was owned by the Sargent brothers and Smith until 1871, when it was sold to Steven Baker and Company of San Francisco for \$12,000 (Thompson and West 1879:133). Using Chinese labor, Baker and Company constructed a levee around the island and began planting crops. Cracks in the levee and annual flooding resulted in the island being abandoned in 1874, with the owners suffering a \$65,000 loss (Paterson et al. 1978:16).

In 1877 the Island was sold to the Pacific Distillery Company of San Francisco, owned by Henry Voorman, George Oulton and F. and J. Schultz, for \$64,000. Using Chinese labor, the Distillery company spent \$250,000 on levee construction and reclamation efforts, and completed the project by 1878. In that year over 4,000 acres were in cultivation and two crops were grown at various times of year: grains and potatoes. The reclamation of Bouldin was considered to be so successful that during the big flood of 1878 it alone survived with its levee system intact (Thompson and West 1879:43). By 1886 the Island was the principal source of potatoes for the San Francisco market (Paterson et al. 1978:16).

Early attempts to reclaim Bacon Island were not as successful. In 1872 Henry Bacon, Sherman Day, and S. C. Hastings purchased a 9,000-acre tract from the Tide Land Reclamation Company with the purpose of reclaiming the land and selling it for a profit. A levee was constructed in 1872 and Bacon burned the reclaimed land and planted his first crop during the winter of 1872-1873. In June of 1873 the levee broke, the crop was ruined, and levee work began again (Paterson et al. 1978:14).

Over the next five years Bacon tried many methods of levee construction, including driving piles, using brush mattresses to tie levees together, and using mud from the river bottom, held together with posts and boards, to form levees. The interior of the island was also leveed to separate Day's western holdings from Bacon's east side properties. Although houses and landings were established on Bacon Island by 1879, reclamation efforts were not successful; levees continued to sink into the river due to the unstable peat soils, cracks developed, and the island flooded on a regular basis into the early 1900s (Paterson et al. 1914-1915).

Initial reclamation of Webb Tract also occurred between 1870 to 1872, using members of the Chinese labor force to construct the levees. While not much is known concerning early reclamation efforts, other than the work was initiated by David Webb and Thomas Williams, it is documented that the tract was flooded and the levee system lost in the winter of 1872-1873 and reclamation was not attempted again until the twentieth century (Paterson et al. 1978:22; Thompson and West 1882).

Reclamation - 1900-1920. With the exception of Bouldin Island, peat soil tracts and islands situated in the interior Delta region were not successfully reclaimed until after the invention of various dredging machinery in the late 1800s (Table 3). The clamshell dredger, hydraulic dredger, and steam driven dredge allowed for levees to be constructed using river bottom sediment instead of unstable peat soil. This, in combination with engineering advancements, resulted in the construction of permanent levee systems that were more resistant to cracks, breaks, and sinkage problems, providing that they were constantly maintained (Paterson et al. 1978:21-22).

As with initial levee work, reclamation after 1900 required substantial resources of financial capital, consolidated ownership of large tracts of land, and engineering experience. As an example, in 1904 the levee at Central Landing on Bouldin Island broke, washing away the small community situated there. After the break, the water depth at the place where the levee broke was estimated at 75 feet. Derelict sailing ships loaded with rocks were sunk in an unsuccessful attempt to close the hole. In addition, double rows of pilings, filled in with sediment were constructed. These efforts were in vain, however, and further breaks occurred in the same location in 1906 and 1908. After the last break the island was abandoned until 1916, when reclamation work began again (Paterson et al. 1978:45).

The final reclamation of all four project islands was the result of the cooperative venture between three men: Phillips, Cochran, and Rindge. Based out of Los Angeles, these men began buying tracts of land in the Delta in 1902, with the intention of draining the islands and reselling the newly-acquired farm land for a handsome profit. Initially, individual companies were set up specifically to purchase and reclaim each tract of land (e.g., Holland Land and Water Company, Webb Land Company). By 1912, Phillips had parted with his partners and had consolidated the separate companies into the California Delta Farms Company (Paterson et al. 1978:23). Through the efforts of the California Delta Farms Company, Holland and Webb Tracts and Bacon Island were finally leveed in 1910, 1912, and 1915, respectively.

Sometime before 1910 Phillips worked out an arrangement with George Shima, a Japanese farmer who leased farm land and worked in the Delta. Shima arrived in the United States from Japan in 1889 and began working as a laborer at a potato farm along the coast (Fujita 1980:2; Hata and Hata 1986:56). He grew potatoes experimentally in the Delta in the early 1890s and successfully harvested a crop on Staten Island. Despite a major financial setback in 1895, when a flood destroyed the majority of his crops, he

Table 3. Summary of Reclamation Efforts on the Delta Wetlands Project

Tract/Island	Early Reclamation Effort/ Company	Final Reclamation/ Company	Tenant/Farmer	Reclamation District/ Organization Date	Known Major Floods
Bacon Island	1872-1877 Bacon, Day, and Hastings (later Bacon Land and Loan Company)	1915 California Delta Farms	Shima (1915- 1936+)	#2028/1918	1873, 1879, 1907 - 1910
Bouldin Island	1871-1874 Steven, Baker & Co. 1878 Pacific Distillery Company	1916-1918 California Delta Farms	Shima (ca. 1904- 1910)	#22/1861 #756/1904, 1918	1874, 1904, 1906, 1907, 1908 - 1916
Holland Tract	1910 Holland Land and Water Company (division of California Delta Farms)	1910 Holland Land and Water Company	Shima (ca. 1910- 1919)	#2025/1918	1980
Webb Tract	1870-1872/?	ca. 1912 Webb Land Company (division of California Delta Farms)	Shima (ca. 1910- 1919)	#2026/1918	1872-1873, 1934, 1950, 1980

Source: Paterson et al. 1978:22; San Joaquin and Contra Costa Counties Reclamation Records.

persevered and continued to buy and lease land in the Delta (Fujita 1980; Hata and Hata 1986:57).

Shima and Phillips were partners and friends. Shima apparently owned stock in the California Delta Farms Company and worked out an arrangement early in the twentieth century with Phillips in which the company would obtain unreclaimed land, build levees, and then lease the holdings to Shima for reclamation and farming purposes. Through this arrangement, Shima reclaimed Webb, Holland, Orwood, Empire, McDonald, Shima, Bishop, Cohn, and Henning tracts and King, Medford, Mandeville, and Bacon Islands. At one time he owned over 4,000 acres of land and leased an additional 25,000 acres (Fujita 1980:3). Between 1889 and 1913 he reclaimed close to 29,000 acres and is credited with reclaiming a total of 102,000 acres of land; 62,000 of these were located in the Delta (Byron Times 1912; Fujita 1980a:2).

By 1909 Shima was known as "the Potato King," a man who was credited with establishing the reputation of the Sacramento-San Joaquin River Delta region as a prime agricultural region. A true entrepreneur, he was the first to realize that using appealing packaging methods when shipping his product would aid in marketing. Red bags marked "Shima Fancy" were used to package and ship his potatoes and became his trademark between 1910 and 1926 (Yoshimura 1981:24, 28).

Agriculture. Even before reclamation efforts were successful, the various islands had landings to accommodate ferry traffic and the loading of crops. Webb Landing, named for an early-day owner and located in the extreme northeast corner of the tract, was established by 1885 (McMahon and Minto 1885). Two additional landings were in operation near Webb in 1901 (Punnett Brothers 1901). Days Landing, named after Sherman Day, the landowner, was situated along the Old River levee in the northwest portion of Bacon Island by 1883 (Reid 1883). Day's Landing was also known as the Bee Ranch Landing by 1905 (Quail 1905).

Two landings were established in the southwest corner of Bouldin Island by 1894, Schultz and Central (Compton 1894). Fourteen additional landings had been constructed by 1901 (Punnett Brothers 1901). Central Landing, located in the west central section of the island on the levee, was established prior to 1904 and consisted of a hotel, various houses, barns, and a steamboat wharf (Paterson et al. 1978:45; Punnett Brothers 1901). Levee breaks at Central Landing in 1904, 1906, and 1908 resulted in the demise of the community (Paterson et al. 1978).

Only seven landings were still in existence on Bouldin in 1912 (Quail 1912). According to Paterson et al. (1978:39), landings were simple in construction and were routinely built. A typical landing consisted of a small pier or floating dock. Strong pilings, often driven in rows, extended along the levee bank for use in securing barges or large boats for loading and unloading crop, seed, machinery, and other cargo. In some cases, barges or boats would nose into a cleared area along the levee and secure lines to trees or pilings. /no

The landings were established as a means to transport grains and produce grown on the islands to markets in San Francisco, Sacramento, and Stockton and were often located at agricultural camps or canneries. Along with the reclamation efforts came extensive construction of ditch systems and pump stations around the islands as a means of draining water. Agriculture on Bouldin Island was successful by the 1880s and the island was on its way to establishing its reputation in Delta agriculture, particularly as the home of asparagus (Paterson et al. 1978:49).

The first attempts to grow asparagus commercially occurred on Bouldin Island in 1892, a venture that eventually led to the region becoming known as the asparagus capital of the world. Asparagus, along with potatoes, beans, and grains, were the primary crops grown on the islands before 1900 (Chan 1986:163). In 1910, Bouldin, Bacon Islands and Webb Tract were planted in potatoes and onions (Sierra Art and Engineering Company 1910). Robert Hickmott was operating two asparagus canneries on Bouldin Island in 1905 and 1912 (Punnett Brothers 1907; Quail 1905, 1912). Both of these structures were built on the levees, with a steam plant installed on pilings over the water and warehouses built on the island. Hickmott lost his canneries when Bouldin Island flooded repeatedly before 1916 and moved his operations to Orwood Tract by 1919 (Paterson et al. 1978:49). By 1928 the main crops grown on the islands were again asparagus and potatoes, with celery, lettuce, and barley also cultivated on Webb and Holland Tracts (Thomas Brothers 1928).

Farming was conducted either by large-scale operations or by tenant farmers who rented the land from the landowner. Most of the laborers and tenant farmers before circa 1942 were Asian. Initially Chinese provided the major labor force; after completing the levee systems they were often hired to begin preparing the land for cultivation and were kept on as seasonal laborers. Other situations developed where the land owner leased land to one Chinese person, who then brought in his countrymen to farm (Chan 1986:208-209). Chinese farmers were working on Bouldin Island in 1882 and were farming

more than one-quarter of Bacon Island between 1910 and 1919. Their involvement declined rapidly after this date (Chan 1986).

By the late 1890s Japanese immigrants were steadily arriving in American, joining the Chinese work force. The numbers of Japanese coming to the United States rapidly swelled during the first two decades of the 20th century. These men quickly replaced the Chinese as tenant farmers and laborers in some areas of the Delta. This Japanese population was augmented at times by East Indians (1910s) and Philipinos (1920s), but was the dominant labor force until the forced removal of Japanese from the area during World War II (Maniery and Costello 1986:38-45).

Initially, laborers were housed in bunks or tents on top of the levee high ground. By 1900, however, Delta farmers devised a series of camps to facilitate cultivating the vast fields on the islands. Each tract of land was divided into sections, ranging from 100 to 500 acres in size. A laborer camp, located within one of the parcels, and usually situated at the base of a levee, was responsible for each section of land, often growing different crops.

The camps functioned as autonomous units. Each had its own housing, cooking facilities, barn, sheds, horses, and farm implements. In addition, large warehouses, used for packing, storing, and processing crops, were often located on tops of levees, in close proximity to landings or wharfs. Crops were then removed from each camp by barge or steamboat (Paterson et al. 1978:42-43). A camp foreman was in charge of all the laborers, the cook, and the stable groom. During the off season the camps were deserted except for the foreman, cook, and groom (Chan 1986:209).

While initially camps were established to accommodate Chinese levee builders and agricultural laborers, by 1910 the camps on the islands were being constructed by George Shima for use during his reclamation efforts and farming ventures. Shima's camps were similar to others constructed in the Delta in that a camp was built for every 400 to 500 acres of land and included a place to live, kitchen, and barn. Every two or three camps had an office (Fujita 1980:3). Shima maintained a consistent work force, arranging his reclamation efforts and farming activities so that he could keep men employed year round (Paterson et al. 1978:26). By 1913, he was considered the wealthiest Japanese man in California, operated a fleet of river barges and boats used to haul his crops to market, and employed hundreds of Japanese, Chinese, and East Indian workers (Hata and Hata 1986: 59). Shima also created conditions favorable to the transition of the Japanese from

wage earners to tenant farmers by frequently subleasing his holdings to other Japanese farmers (Hata and Hata 1986; Paterson et al. 1978:21-24).

Asian laborer camps were present on all tracts. A 1917 map of the Delta area depicts 12 camps on Holland Tract, 17 on Webb Tract, 12 on Bacon Island, and none on Bouldin Island, which was in the process of being reclaimed. Webb and Bacon each had a headquarters facility as well (Widdows 1917). These camps were all operated by Shima under a lease to the California Delta Farms Company. In addition, Shima maintained a residence at Camp 1 on Bacon Island and his headquarters office was located in Camp 3 on Bacon Island (Fujita 1980, 1980a). Following reclamation of Bouldin in 1918, numerous camps were constructed around the perimeter of that island. A map published in 1926 depicts 37 camp locations on Bouldin Island (Budd and Widdows 1926).

The passage of the Alien Land Law in 1913, followed by the amendment of an even tougher law in 1919, resulted in many Asian tenant farmers moving out of the Delta. The laws made it difficult for Asians to lease farm land after 1913 and into the 1930s, although Shima found ways to circumvent the statutes and continued to farm on Bacon Island until his death in 1926 (Hata and Hata 1986:55). Holland Tract, however, was subdivided and sold as small-acreage farms to non-Asian owners between 1920 and 1922. Webb Tract was also liquidated by California Delta Farms and sold, as was Bouldin Island. By 1938 Shima's widow had sold his holdings in the Delta and given up the leases and the Shima family moved to New York (Fujita 1980; Hata and Hata 1986:61).

Japanese continued to work in the Delta as laborers until the outbreak of World War II, when they were removed from the area and placed in camps. After the War, few Japanese returned to the Delta, compared to the "small army" who were working for Shima after 1910. Of the islands within the project, only Bacon continued to be farmed by Japanese after 1946, maintaining the tradition started by Shima. Today, more than half of Bacon Island is leased or owned and farmed by Asians, with labor provided by Mexicans.

Other Uses. The large number of laborers working Bouldin Island in the 1920s resulted in the establishment of a school in the west central area of the island. The school is noted on a 1926 map as being near the current pumping station; by 1940 it had been moved approximately one-half mile north (Budd and Widdows 1926; Metsker 1940). County records for this school are housed at the San Joaquin County Mickie Grove Museum in Lodi (Bennett 1988).

Today, Bacon, Bouldin, and Webb are still used primarily for agricultural pursuits. Portions of Holland and Webb Tracts, and Bouldin Island are used for grazing sheep and cattle. Seasonal sheep camps are established during the summer and fall on Bouldin and Webb, while cattle grazing occurs year round on Holland Tract. In addition, several hunting clubs were established on Holland Tract in the 1950s; one of these is still in operation and is used seasonally by members who hunt ducks and other water fowl on the island. Two small marinas are also present on this tract and are used by year-round residents who live in house boats, and by seasonal or weekend recreationalists.

SURVEY RESULTS

Twenty-five archaeological sites and 22 features or isolated artifacts were located on the four islands. In addition, 54 standing historical structures were inventoried. Resource types range from prehistoric cemeteries and habitation sites to Japanese labor camps with bunkhouse, cookhouse, washhouse, and other structures. These resources represent nearly 3,000 years of occupation and land use.

Bacon Island

Thirteen agricultural camps, a bridge tender's house, and two isolated historic artifacts were recorded on Bacon Island. The camps were constructed by George Shima between 1915 and 1918 and consist of a variety of houses, sheds, garages, washrooms, and barns (Tables 4, 5).

BC-1: Located at the site of Shima's Camp 1, BC-1 consists of a two story bunkhouse, a mess hall, detached cookhouse, shower house, toilet facilities, cement cistern, pier blocks, and trash. Artifacts noted on the surface include glass (clear, aqua, green, amber), metal, and Japanese blue-and-white transferprinted fragments. All buildings and material are located at the base of the levee. Shima lived at Camp 1 while working on the island and it is probable that his residence was torn down and is represented by the pier blocks. The camp is abandoned and the bunkhouse and mess hall are boarded up at present.

Architectural Description. All of the buildings, except for the toilet facility, are craftsmen in style and are characterized by gable roofs, exposed rafters, multi-paned windows, and paneled doors. A small, shed roof addition has been added to the south side of the mess hall. The toilet house has a shed roof and a concrete floor with single-paned windows and may have been built at a later date.

BC-2: Shima's Labor Camp Number 2 contains two boarding houses (one occupied and one abandoned), a shed, garages, and modern mobile homes situated at the base of the Old River levee. In addition, a sheet metal building, probably used as a packing shed at one time, is present on top of the existing levee.

A covered wooden footbridge crosses an irrigation canal that separates one of the garages from a boarding house. Modern trash was noted around the abandoned building.

Table 4. Presently Identified Cultural Resources on Bacon Island: Description and Evaluation Data

Site/Temp. Number	Temporal Unit	Resource Type	Site Characteristics	Landform	Area/Depth (a)	Cultural Value Ascribed Function	% Intact (b)	Integrity (c)	RV/CR (d)	NRHP Status (e)
BC-1 CA-SJo-0211H	ca. 1913 - ca. 1960	Architectural/ Historic	Structures, trash scatter, pier blocks	base of levee	SS	Shima's Japanese Labor Camp #1	95	LSDAWMF	4/3	PE
BC-2 CA-SJo-0212H	ca. 1915 - present	Architectural/ Historic	Structures, trash scatter	base of levee	S	Shima's Japanese Labor Camp #2	100	LSDAWMF	4/3	PE
BC-3 CA-SJo-0213H	ca. 1915 - present	Architectural/ Historic	Structures, trash scatter	base of levee	S	Shima's Headquarters/ Japanese Labor Camp #3	100	LSDAWMF	4/3	PE
BC-4 CA-SJo-0214H	ca. 1915 - present	Architectural/ Historic	Structures, trash scatter	base of levee	S	Shima's Japanese Labor Camp #4	100	LSDAWMF	4/3	PE
BC-5 CA-SJo-0215H	ca. 1870s - 1950	Historical	Cement pads, trash scatter	base of levee	SS	Day Ranch 1873- 19 Bee Ranch 1901-1913/ Shima's Japanese Labor Camp #5 (after ca 1915)	50	LSM	3/2	PE
BC-6 CA-SJo-0223H	ca. 1915	Architectural/ Historic	Structure, cement pad, trash scatter	base of levee	SS	Shima's Japanese Labor Camp #6	75	LSA	3/3	PE
BC-7 CA-SJo-0216H	ca. 1915 - ?	Architectural/ Historic	Structures, trash scatter, pier blocks	base of levee	S	Shima's Japanese Labor Camp #8	75	LSDAWMF	3/3	PE
BC-8 CA-SJo-0217H	ca. 1915 - present	Architectural/ Historic	Structures, trash scatter	base of levee	S	Shima's Japanese Labor Camp #9	100	LSDAWMF	4/3	PE
BC-9 CA-SJo-0218H	ca. 1915 - present	Architectural/ Historic	Structures, trash scatter	base of levee	S	Shima's Japanese Labor Camp #10	100	LSDAWMF	4/3	PE
BC-10 CA-SJo-0219H	ca. 1915 - present	Architectural/ Historic	Structures, trash scatter	base of levee	S	Shima's Japanese Labor Camp #10 1/2	100	LSDAWMF	4/3	PE
BC-11 CA-SJo-0220H	ca. 1915 - present	Architectural/ Historic	Structures, trash scatter	base of levee	S	Shima's Japanese Labor Camp #11	100	LSDAWMF	4/3	PE
BC-12 CA-SJo-0221H	ca. 1915 - present	Architectural	Structures	top and side of levee	S	Bridge Tender's Residence	100	LSDAWMF	4/3	PE

**Table 4. Presently Identified Cultural Resources on Bacon Island: Description and Evaluation Data
(concluded)**

Site/Temp. Number	Temporal Unit	Resource Type	Site Characteristics	Landform	Area/Depth (a)	Cultural Value Ascribed Function	% Intact (b)	Integrity (c)	RV/CR (d)	NRHP Status (e)
BC-13 CA-SJo-022H	ca 1915 - present	Architectural/ Historic	Structures, trash scatter	base of levee	SS	Shima's Japanese Labor Camp #12	100	LSDAWMF	4/3	PE
BC-14 None	post - 1915	Historic	Porcelain fragment	plowed field	S	Japanese	N/A	None	0/3	NE
BC-15 None	post - 1915	Historic	Porcelain fragment	plowed field	S	Japanese	N/A	None	0/3	NE

a. S = Surface deposits; SS = Surface deposits with possible subsurface deposits

b. 25 = Historic appearance greatly altered; 50 = Some historic appearance retained; 75 = Most historic appearance present; 100 = Historic appearance intact; N/A = not applicable

c. National Register of Historic Places evaluation criteria: L = Location, S = Setting, D = Design, A = Association, W = Workmanship, M = Materials, F = Feeling

d. RV = Research value; ranked from 0 (no value) to 5 (highest value). CR = Confidence in the assigned RV; 1 = Judgement is more guess than science and is likely to be not reliable, 2 = Judgement is moderately reliable, 3 = Judgement is most likely to be reliable

e. NRHP = National Register of Historic Places NE = Site is not eligible for inclusion on NRHP. PE = Site is potentially eligible.

Table 5. Architectural Data Summary of Bacon Island

Temp No.	Descriptive Name	Barns	Sheds	Bunkhouse	Packing Shed	Single Residence	Boarding House	Modern Structures	Other	Total No. of Structures
BC-1	Camp #1	-	-	1	-	-	-	-	Dining hall, washroom, toilet, cookhouse	5
BC-2	Camp #2	-	1	-	1	-	2	3	Garage, small footbridge, domestic trees	9
BC-3	Camp #3	2	1	4	-	1	3	11	Laundry room, kitchen, orange and acacia trees, wooden sidewalks, wooden footbridge	24
BC-4	Camp #4	-	-	-	-	-	1	-	Duplex, walnut trees and grapes, 2 garages	4
BC-5	Camp #5	-	-	-	-	-	-	-	Large cement pad, fig trees	0
BC-6	Camp #6	-	-	-	-	1	-	3	Cement foundation	4
BC-7	Camp #8	-	-	-	1	-	1	4	Possible office	7
BC-8	Camp #9	1	1	-	1	-	-	6	Garden	9
BC-9	Camp #10	1	-	-	-	1	-	1	None	3
BC-10	Camp #10-1/2	-	-	1	-	2	-	3	Cookhouse, fig tree	7
BC-11	Camp #11	-	-	-	1	1	-	5	Yard	7
BC-12	Bridge Tender's Residence	-	-	-	-	1	-	2	Dock	3
BC-13	Camp #12	-	2	1	-	3	2	20	Bathhouse, 2 duplexes, shrubbery, roses	31

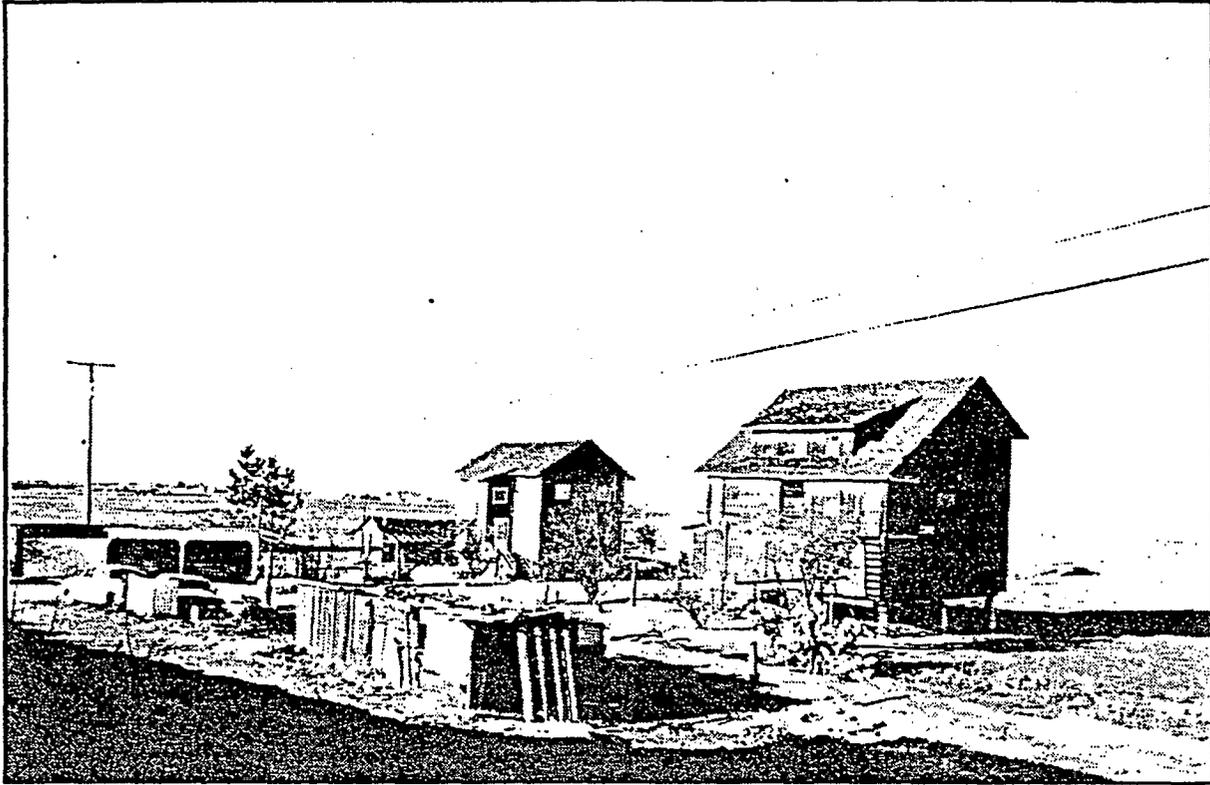


Figure 6 Overview of Camp #2 on Bacon Island, View East

In addition, fragments of a large, quart-sized Japanese stoneware sake bottle were located near the footbridge, as well as fragments of solarized amethyst-colored glass.

Architectural Description. The two boarding houses have end-gabled shingled roofs with exposed rafters, paneled doors, porches, and multi-paned windows (Figure 6). The buildings are supported by concrete piers. A small shed with a gable and shingled roof, horizontal board siding, and a diamond-shaped louvre in the end gable is located at the north end of the camp. Finally, a large (115 feet long by 30 foot wide) building is present on the levee. This structure has a gabled roof, monitor vents and louvres on the roof, sliding metal doors, and is covered with metal. A collapsed loading dock is situated on the east side of shed. Given the size and its location near the river, it is probable that the building was used as a packing and processing shed.

BC-3: Labor Camp 3 served as George Shima's headquarters for farming operations in the Delta and is now the headquarters for Rancho del Rio, a Japanese-owned farming operation. The camp contains 22 structures; half of these date to the initial construction era. Modern buildings include large metal sheds, trailers, single-family residences, and garages. Pre-1918 buildings consists of three multi-storied boarding houses, two barns, four bunkhouses, sheds, a laundry room, and single-family dwellings. Wooden walkways and foot bridges connect the boarding houses to each other and cross over irrigation canals. Orange and acacia trees, false bamboo, roses, and gardens adorn the compound. Modern trash is scattered around the buildings and has been deposited in the canals. Fragments of solarized glass and Japanese porcelain were also noted on site.

Architectural Description. The structures within Camp #3 are Craftsman/Craftsman Vernacular in style and have similar architectural elements. The 11 historic buildings are supported on wooden or concrete piers, have gabled roofs, exposed rafters, multi-paned windows, dormers on the two-storied structures, and paneled doors. Buildings dating to Shima's occupation include two, two-storied boarding houses (one originally served as Shima's office), one two-and-one-half storied boarding house (Figure 7), six one-story bunkhouses, residences, or mess halls, two barns, and assorted outbuildings (laundry house, sheds). Alterations to the structures include enclosing the porches, adding fire ladders and staircases to the outside of the buildings, replacing some windows with aluminum, and building shed-roofed additions. Overall, however, the buildings are in near-original condition.

BC-4: The site of Camp 4 also contains historic structures, including a two-story boarding house, one story duplex, and garages. Walnuts and grapes are growing in the yard, as well as roses. Modern trash is deposited around both houses and several fragments of Japanese transferprinted wares were noted. The area is still in use as a farm laborer camp.

Architectural Description. The two-story, gable-roof boarding house has exposed rafters, channeled siding with end boards, staircases, paneled doors, and six-pane windows. This massive structure is supported by tall, concrete piers. The single-storied duplex is also on pier blocks and has a low-pitched, end gable roof covered with metal. Enclosed porches, with shed roofs, are located on the south and north sides of the duplex and there is an addition with a shed roof attached to the east rear.

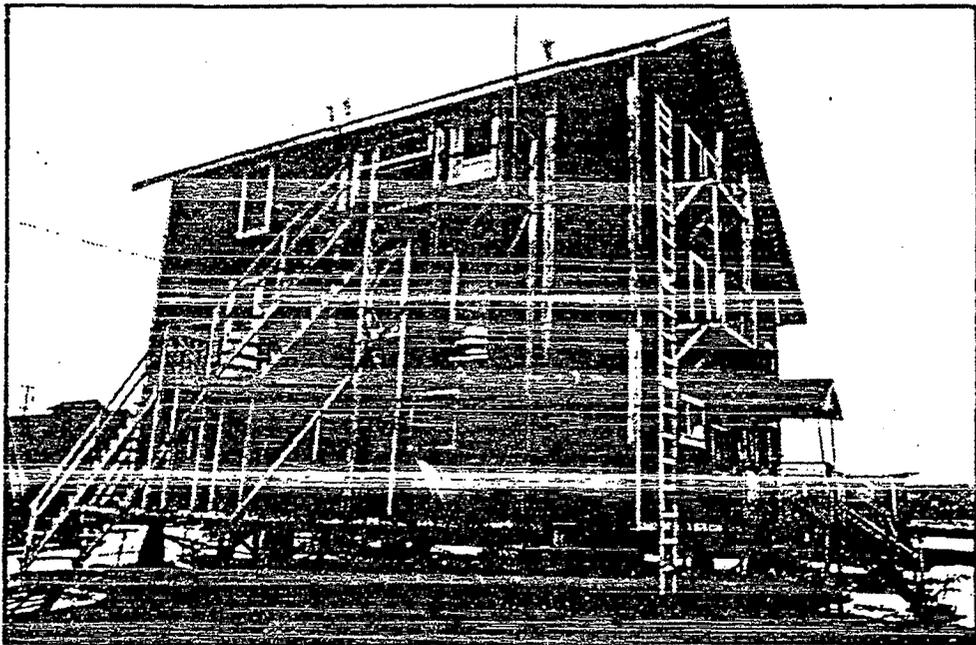
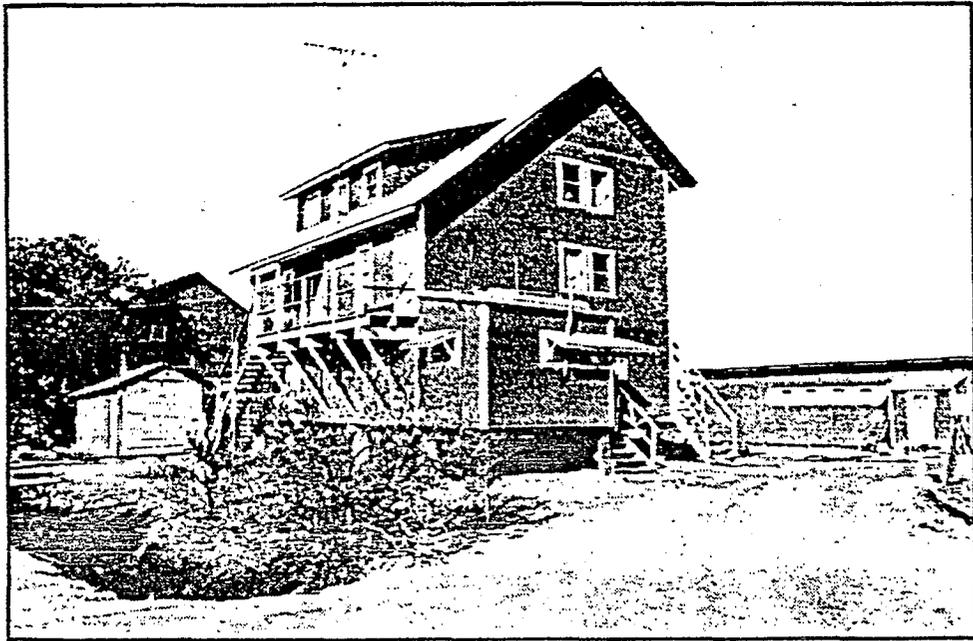


Figure 7 Views north (top) and west (bottom) of Boarding House #14, Camp 3, Bacon Island. Note access stairs, fire escape ladders, and porches.

BC-5: The Days or Bee Landing site contains two mature fig trees, a developed pond, and bulldozed piles of boards, water pipes, and other structural remains, including a concrete pad. Historic material is scattered along the levee road for over a mile and includes glass fragments (amethyst, aqua, olive, clear, brown), ceramic sherds, and metal bits. Similar type material is present in the plowed fields east of the site for a distance of about 400 feet. Pilings are visible in Old River adjacent to the site and may represent remnants of a wharf or pier.

Day's Landing was used by Sherman Day soon after he purchased the Island in 1872. The site was known as Bee Ranch after 1905 and by 1915 was being used by George Shima as Camp #5.

BC-6: The 1917 Camp 6 site is characterized by a large concrete pad (probable remnants of a long, narrow warehouse or packing shed), an abandoned two-story boarding house, a metal packing shed, and a trailer. The original two-story boarding house structure is currently being dismantled and has broken windows and floorboards. It is missing both interior walls and outer doors. Historic and modern trash is scattered around the structure and inside the house.

Architectural Description. This Craftsman house is one-story on the levee side and two stories behind. It has a low-pitched end-gabled roof with exposed rafters and louvres in the gabled ends. The lower story has board and batten siding while the upper is of horizontal two-in-one board. The interior of the house has tongue and groove floors, sheet rock over the original wallboard, knob and tube wiring, French doors, and a built-in china cabinet.

BC-7: This site consists of two historic boarding houses and two packing sheds or barns. Noted on a 1917 map as Camp 8, the camp is no longer in use and the buildings are rapidly deteriorating. Artifacts noted on the surface around the buildings include glass fragments and porcelain sherds.

Architectural Description. Both residences are one story, single family units with end or side gabled roofs, exposed rafters, and multi-paned sash windows. They are representative of a Craftsman vernacular style. A large wooden packing shed and a barn are also associated with the camp; both structures are badly deteriorated and are collapsing.

BC-8: Shima's Camp 9 contains a barn and two sheds, as well as six modern buildings. The original residences were removed due to their dilapidated condition. Modern garbage and a few sherds of Japanese blue-and-white transferprinted vessels were noted around the structures.

Architectural Description. The barn and two sheds have gabled roofs covered with corrugated metal. The barn and one of the sheds have board and batten siding and are supported by concrete piers. The large packing shed is on a concrete foundation and is covered with corrugated metal siding.

BC-9: BC-9 is the location of Labor Camp 10 and consists of one house, a barn, and a modern trailer. Pampas grass and cactus grow around the barn. The camp is still in use.

Architectural Description. Craftsman in style, the house has a low pitched, metal gable roof with exposed rafters and louvres in the gable ends. The house is covered with green asphalt siding and the original windows have been replaced with aluminum. The barn has a metal gable roof, board and batten siding, and is supported by wooden piers.

BC-10: Shima's Camp 10-1/2 contains a Foreman's House, bunkhouse, probable cookhouse, and a residence, as well as three modern buildings. A fig tree, roses, and shrubs are present around the foreman's house. These wooden structures date to the initial establishment of the camp and are currently being used by farm laborers.

Architectural Description. The historical structures are supported by wooden piers and have gabled roofs, exposed rafters, multi-paned windows, and paneled doors. The foreman's house, cookhouse, and residence have been covered with asphalt siding, while the bunkhouse has board and batten siding. Additions have been added to each structure.

BC-11: Situated at the base of the levee, this site represents the remains of Shima's Camp 11 and includes five modern structures, a residence, and a wooden packing shed.

Architectural Description. The house has several elements of Craftsman style and is architecturally more sophisticated than most of the buildings on the Island. The

low-pitched front gable roof has exposed rafters and five knee braces. The house has channeled siding, six pane windows flanked with louvres, a paneled front wood and glass door, and a recessed porch across the front (Figure 8a). The shed has horizontal wooden siding, a gabled roof, and three shed-roofed extensions.

BC-12: One two-story wood frame house is situated on the south side of the Bacon Island Bridge. This house served as the bridge tender's residence. A dock extends out into Middle River below the house and two modern structures are located at the base of the levee in this location.

Architectural Description. This Craftsman-style house is one-story on the levee side and two stories in back (Figure 8b). It has a low-pitched gable roof with exposed rafters and a front entry with intersecting gable roof. Additions to the building include a new railing on the porch, and aluminum sash windows.

BC-13: Like BC-3, this site is a major compound and houses a large population of farm workers and equipment. Located at the 1917 site of Shima's Camp 12, BC-13 contains 10 historic structures and 20 modern houses and trailers. Ornamental, elaborately-shaped shrubs adorn one yard and pampas grass, cactus, roses and flowers are also present. Abandoned equipment and trash heaps litter the area.

Architectural Description. There are two two-storied boarding houses at this camp. Both have steeply-pitched gable roofs of corrugated metal with exposed rafters. One of the houses has a three-windowed dormer, of four panes each, in the front. The boarding houses are supported by wooden piers and have stairways attached to the outside of the buildings.

Single-storied buildings include two duplexes, a bunkhouse, and two houses. The duplexes have channeled siding and are supported by wooden piers. Both have low-pitched end-gabled roofs with exposed rafters; one has louvres on the gable end. Additions to the duplexes include shed-roofed garages, and new windows. The bunkhouse is a long, narrow building with low-pitched front-gable roof and a central louvre. It is on wooden piers and is covered with asphalt siding. The two houses have board and batten siding, low-pitched, end-gabled roofs, and porches. Both are supported by wooden piers.

Other structures at Camp 12 that date to Shima's occupation include a washhouse and two sheds. All have gabled roofs and multi-paned windows and the sheds have exposed rafters.

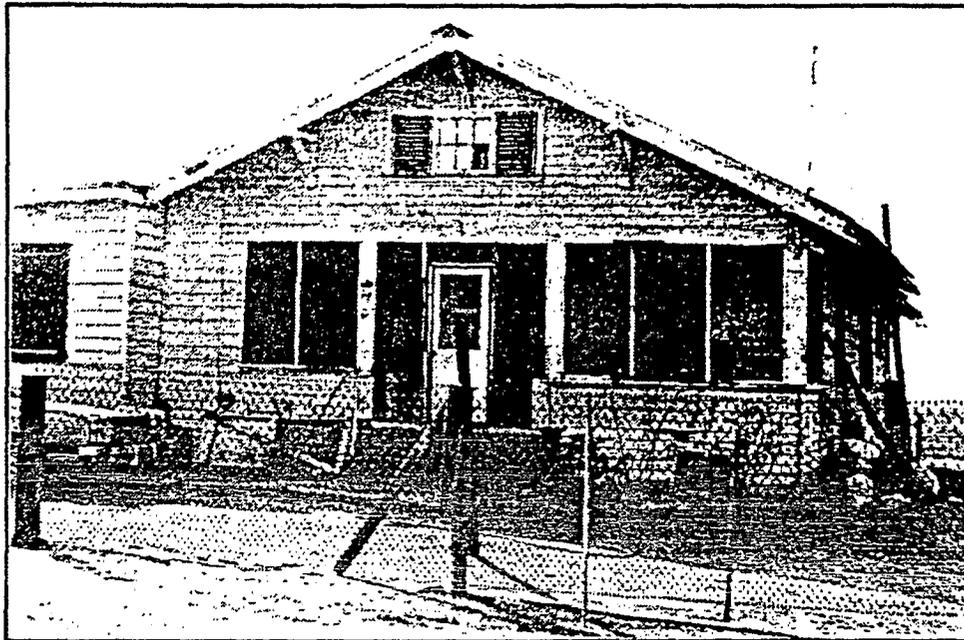


Figure 12a. (top) Craftsman-style residence at Shima's Camp #11,
(BC-11) Bacon Island

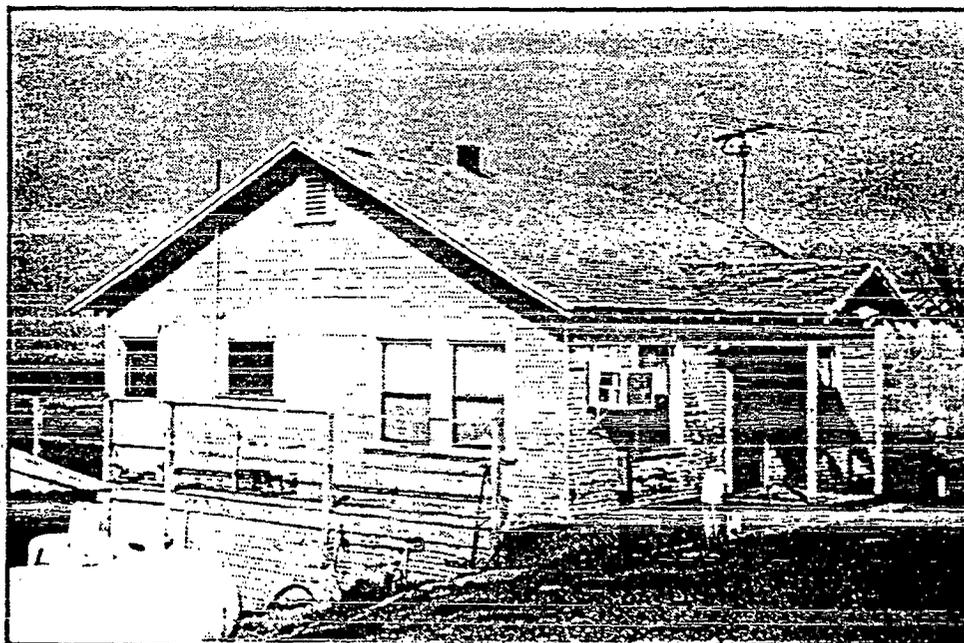


Figure 8 . (bottom) Bridge Tenders House on Bacon Island
(BC-12)

BC-14 and BC-15: These locations contain isolated fragments of Japanese ceramics. The material was located in plowed fields and original context could not be determined.

Other Resources: A recent farm compound, used for large equipment storage and crop transport is located in the northeast section of the island. A large mounded area at Young's Slough was examined for prehistoric remains. This area is heavily disturbed by animal burrows, contains a dense vegetation cover, and is surrounded by the slough; no resources were noted. A modern trash dump is situated just south of this mound along Young's Slough. Recent trash, primarily aluminum cans, bottles, and glass fragments, were randomly scattered over all areas surveyed on the island. Finally, pilings visible in Middle River, off the east side of Bacon Island, represent the location of the original levee built between 1872 and 1905 by H. Bacon.

Bouldin Island

Historic research indicated that at one time or another Bouldin Island had 37 camps, two school locations, two canneries, and 21 landings. In addition, canals and ditches criss-crossed the island, pumping stations were situated in three locations, and a ferry operated between Terminous and the northeast corner of Bouldin. These historical locations were depicted on county maps between 1894 and 1940 (see Historical Setting section). Five archaeological sites and eight isolated features or artifacts were located on Bouldin Island and represent the agricultural development of the island (Tables 6, 9).

BI-1: The historical archaeological site consists of a scatter of artifacts, spread out along the edges of a plowed field. Artifacts include Japanese porcelain sherds, glass, depression-era domestic trash, and plastic. The site has been disturbed and original context and location of the material could not be determined.

BI-2: This resource is also a historical trash scatter and is associated with a labor camp built on the island after 1918. Artifacts noted on the site surface include two small bottles (Figure 9); one with a base mark dated between 1925 and 1930 (Toulouse 1974:414). Asian and American ceramics, glass fragments, plastic, and metal were found on the surface. A nearby mound of blackberry brambles, squarish in shape and about 10 feet in height, may cover additional trash or remains of a building.

Table 6. Presently Identified Cultural Resources on Bouldin Island: Description and Evaluation Data

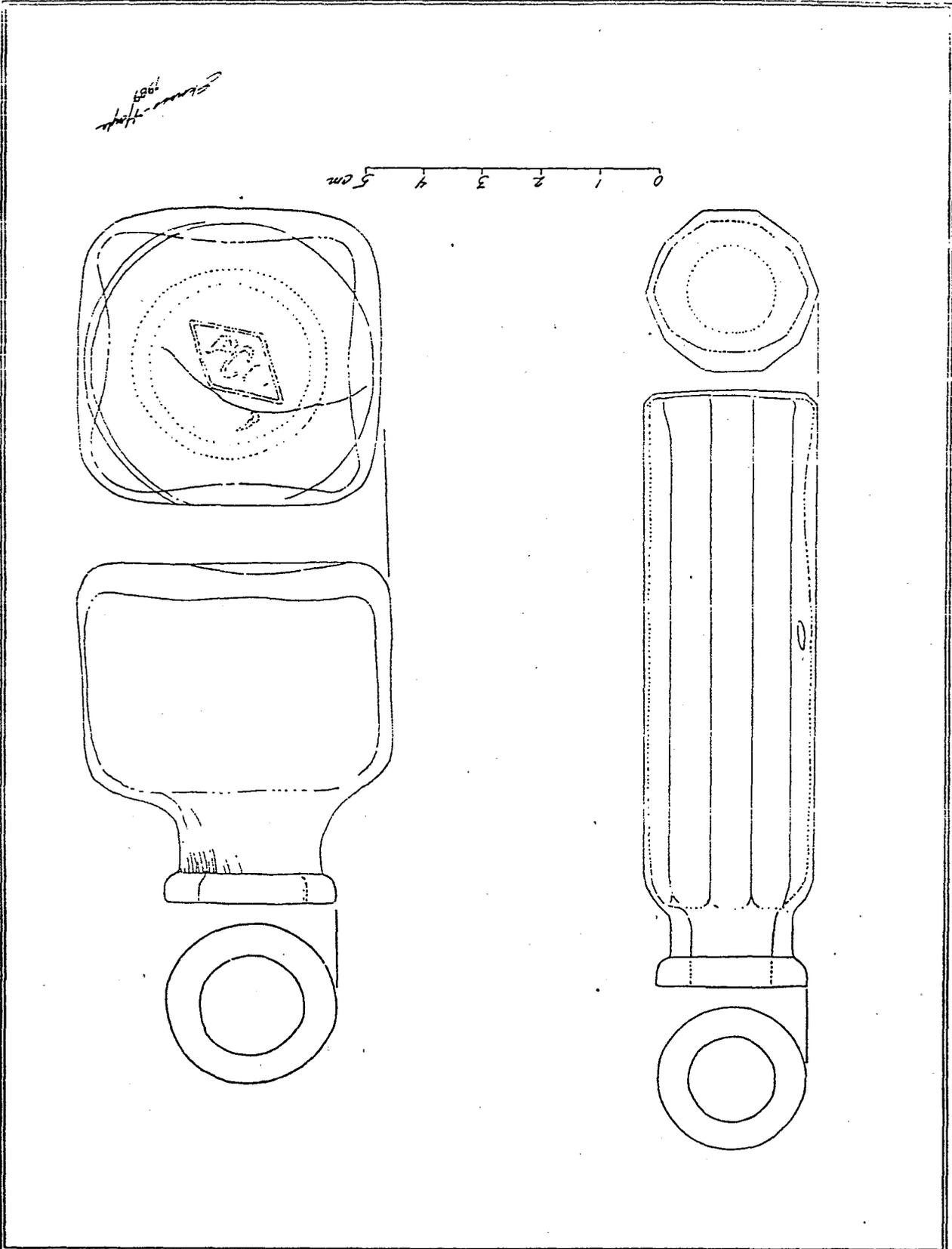
Site/Temp. Number	Temporal Unit	Resource Type	Site Characteristics	Landform	Area/Depth (a)	Cultural Value Ascribed Function	% Intact (b)	Integrity (c)	RV/CR (d)	NRHP Status (e)
BI 1 CA SJo-020514	1918 - 1930s	Historic	Trash scatter	plowed field	SS	Japanese Labor Camp #22 or #23	5	M	0/3	NE
BI 2 CA SJo-020014	1918 - 1930s	Historic	Trash scatter	base of levee	SS	Japanese Labor Camp #25	50	LSM	3/2	PE
BI 3	ca. 1872 - 1950s	Historic	Cement foundation	levee top	S	Central landing, Hickmott Cannery site	5	LS	0/3	NE
BI 4	ca. 1920	Historic	Chinese brownware, ceramic fragments	plowed field	S	Labor Camp/Central Landing	N/A	-	0/3	NE
BI 5	ca. 1905 - 1918	Historic	Cement foundation	field	S	Hickmott Cannery site/ Camp #11	5	LS	0/3	NE
BI 6	ca. 1918 - 1922	Historic	Chinese brown glazed ceramic fragment	plowed field	S	Asian Labor Camp #5	N/A	-	0/3	NE
BI 7	ca. 1918 - 1922	Historic	Chinese brown glazed ceramic fragment	plowed field	S	Asian Labor Camp #5	N/A	-	0/3	NE
BI 8 CA SJo-020711	ca. 1918 - 1950s	Historic	Trash scatter	plowed field	SS	Japanese Labor Camp #17	5	M	0/3	NE
BI 9	ca. 1920s	Historic	Bottle fragment	plowed field	S	Labor Camp	N/A	-	0/3	NE
BI 10 CA SJo-020014	ca. 1873 - 1960(?)	Historic	Cement pads, trash scatter	base of levee	SS	Bouldin/Schultz Landing/ Labor Camp #1	50	LSM	3/3	PE
BI 11	ca. 1920s	Historic	Cement pad	base of levee	S	Pumping Station	5	LS	0/3	NE

Table 6. Presently Identified Cultural Resources on Boulder Island: Description and Evaluation Data (concluded)

Site/Temp. Number	Temporal Unit	Resource Type	Site Characteristics	Landform	Area/Depth	Cultural Value Ascribed Function	% Intact	Integrity	RV/CR	NRHP Status
					(a)		(b)	(c)	(d)	(e)
BI-12	ca. 1950	Architectural	Structure	Island interior	S	Farming	100	LSW	0/2	NE
BI-13	ca. 1918 - present	Architectural/Historic	Structures, cement pads, trash scatter	top sides, base of levee	S	Japanese Labor Camp #21	75	LSDW	2/2	NE

- a. S = Surface deposits; SS = Surface deposits with possible subsurface deposits
 b. 25 = Historic appearance greatly altered; 50 = Some historic appearance retained; 75 = Most historic appearance present; 100 = Historic appearance intact; N/A = not applicable
 c. National Register of Historic Places evaluation criteria: L = Location, S = Setting, D = Design, A = Association, W = Workmanship, M = Materials, F = Feeling
 d. RV = Research value; ranked from 0 (no value) to 5 (highest value). CR = Confidence in the assigned RV; 1 = Judgement is more guess than science and is likely to be not reliable, 2 = Judgement is moderately reliable, 3 = Judgement is most likely to be reliable
 e. NRHP = National Register of Historic Places NE = Site is not eligible for inclusion on NRHP. PE = Site is potentially eligible.

Figure 9 Medicinal (left) and ink (right) bottles from BI-2; dated 1925-1930



BI-3: Located at a pumping station, this area through time contained Central Landing (ca. 1872-1904), Hickmott Cannery (1905), and Bouldin School (1926). Physical remains include one concrete foundation slab on top of the levee. Abandoned modern farm equipment (boiler, gears, machinery) is present at the base of the levee. Central Landing was destroyed when the levee broke in 1904, 1906, and 1908. Due to the lack of artifactual material and structural remains, the resource was recorded as an isolated feature.

BI-4: Several sherds of Chinese brown-glazed vessels, such as soya sauce pots or wine jugs, were located in a plowed field on the west side of the island.

BI-5: Situated at the 1905 site of Hickmott Cannery, ruins at BI-5 consist of one cement foundation. Initial inspection of the site in September, 1988, revealed cement pier blocks, two foundations, and artifacts associated with the cannery area, including brown, clear, and amethyst colored glass, brick fragments, and recent trash. However, when the area was visited in January, 1989, only one foundation was evident due to current use of the site as a fill dump and laydown area by California Department of Transportation while working on the Terminus/Bouldin Island bridge. Given the lack of cultural material the resource was recorded as an isolated feature.

BI-6 and BI-7: Several sherds of Chinese brown-glazed vessels fragments were noted at two different locations on the Islands, both in plowed fields.

BI-8: An historic trash scatter probably associated with an Asian labor camp was located in a plowed field. The material was dispersed uniformly throughout the field and original location and context was not determined. Artifacts include glass, metal, ceramic, and plastic and appear to date post-1925.

BI-9: One bottle fragment was found in a plowed field near the historical location of one of the agricultural labor camps that were on the island in 1926. No other material was noted.

BI-10: This site represents remnants of the historical Bouldin/Schultz Landing, in operation from around 1873 into the 1960s. On maps dated after 1912, this landing was one of the few depicted on the island. Physical remains include mature domestic trees.

foundation pads, brick fragments, scrap metal, cast iron fragments, and glass fragments. Glass and metal fragments were noted scattered over the entire area. The site is located at the base of the levee.

BI-11: One cement pad was recorded as an isolated feature at the site of an old pumping station. The pad may be associated with mid-1920s use of the Island. No other cultural material was noted in the area.

BI-12: One modern structure is located in the south center portion of the island and is surrounded by plowed fields. This farming headquarters building was built after 1946.

BI-13: Labor Camp 21, noted on a 1926 county map, is still in use by the Bouldin Farming Company. It consists of several cement foundations, a large bulldozed mound of structural and farm equipment debris, and corrugated tin sheds. In addition, two wooden structures (two stories each) are located on site and date to the original construction of the camp sometime between 1918 and 1925.

Architectural Description. The two structures at Camp 21 are Craftsman in design and are one story on the levee side and two stories in the rear. Both houses have low-pitched, gabled roofs with exposed rafters and louvres in the gable ends. They have horizontal siding with end boards, five-paneled doors, poured concrete foundations, and small, recessed porches.

Other Resources: A double row of pilings in the river west of Central Landing represent the location of the pre-1904 levee. This levee was breached in 1904 and the hole was plugged by sinking derelict sailing vessels filled with rock into the void. These attempts were unsuccessful and the existing levee, built behind the old barrier, was constructed between 1916 and 1918.

Modern alterations to the island include several residences along the levee north of Highway 12 and one in the center of the island south of Highway 12 (all built post-1946), temporary sheep camps, and recent debris and abandoned equipment.

Holland Tract

Three prehistoric archaeological sites and two architectural sites were located and recorded on Holland Tract. In addition, three prehistoric isolated artifacts and four historic/modern features were noted during the survey (Table 7). One prehistoric site was noted in the southwest corner of the tract in 1943. CA-CCo-146 was partially excavated in 1954 by Elsasser, after a local landowner reported finding burials (Elsasser 1954; Hampson 1985). Elsasser removed four burials from the area. A thorough search of the area during the current investigation did not reveal any evidence of this mound or cultural material on the existing ground surface; the site appears to be completely destroyed.

HT-1: The combined locations of the 1917 Camps 1 and 2 are now used by a duck-hunting club as a seasonal headquarters. One board-and-batten building is located at Camp 1 and several recent structures are at Camp 2. Palm, magnolia, orange, and apricot trees are in the yard around the headquarters.

Architectural Description. The gun club house is a simple Craftsman-style building with a low-pitched end-gabled asphalt roof with decorative and curved exposed rafters. A small porch with square posts is present at the west entrance and a new shed and fish/duck-cleaning sink are attached to the structure.

HT-2: One prehistoric basalt flake was noted in a dirt road used by farming vehicles. This artifact is probably associated with nearby CA-CCo-147.

HT-3: This resource consists of a cement pad situated in a plowed field. The pad was probably laid around 1915 and was used in connection first with Asian labor camps operating on the Island until 1922 and later with local tenant farmers. The structure that originally stood on the foundation was destroyed when Holland Tract flooded in 1980. The pad is in the 1917 location of Shima's Camp 4.

HT-4: One historic structure, a house, is present on the east side of the tract just north of the 1917 location of Camp 5. Orange trees and camellia bushes are growing in the yard around the house and a modern trailer is just north of the building.

Architectural Description. The foreman's residence is a one-story building on the levee side and two-stories on the interior Island side. The foundation is poured con-

Table 7. Presently Identified Cultural Resources on Holland Tract: Description and Evaluation Data

Site/Temp. Number	Temporal Unit	Resource Type	Site Characteristics	Landform	Area/Depth (a)	Cultural Value Ascribed Function	% Intact (b)	Integrity (c)	RV/CR (d)	NRHP Status (e)
CA-CCo-147	1000 BC - AD 1800	Prehistoric	Human remains, lithic debitage, tools	piper sand mound	SS	Native American/cemetery, village	30	LSM	4/3	PE
HT-1 CA-CCo	ca. 1910 - present	Architectural	Structure	levee top	S	Labor Camp #1/ Gun Club	100	LSDW	3/2	NE
HT-2	?	Prehistoric	flake	edge of piper sand mound	S	Native American	N/A	None	0/3	NE
HT-3	ca. 1910 - 1980	Historic	Cement pad	plowed field	S	Labor Camp #4	5	LS	0/3	NE
HT-4 CA-CCo	ca. 1910 - 1927	Architectural/ Historic	Structure, Cement pad	levee top and side	S	Labor Camp #5	60	LS	1/3	NE
HT-5	ca. 1955 - 1980	Modern	Pads, debris	plowed field	SS	Hunting Club	25	L	0/3	NE
HT-6 CA-CCo	2500 BC - AD 1800	Prehistoric	Human remains, lithic debitage and tools, shell artifacts, groundstone	Piper sand mound	SS	Native American/cemetery, village	80	LSWM	5/3	PE
HT-7	ca. 1920s	Historic	Cement pad	Piper sand mound	S	Hunting club (?), ranching	N/A	L	0/3	NE
HT-8	?	Prehistoric	Mano	Piper sand mound	S	Native American	N/A	None	0/3	NE
HT-9	ca. 1920s	Historic	Cement pad	Piper sand mound	S	Ranching	N/A	None	0/3	NE
HT-10	?	Prehistoric	Bone fragments	Piper sand mound	S	Native American	N/A	None	0/3	NE

**Table 7. Presently Identified Cultural Resources on Holland Tract: Description and Evaluation Data
(concluded)**

Site Comp. Number	Temporal Unit	Resource Type	Site Characteristics	Landform	Area/Depth (a)	Cultural Value Ascribed Function	% Intact (b)	Integrity (c)	RV/CR (d)	NRHP Status (e)
HT-11	2500 BC - AD 1800	Prehistoric	Bone, lithic debitage, shell	Piper sand mound	SS	Native American/burial	5	LSM	3/2	PE

- a. S = Surface deposits; SS = Surface deposits with possible subsurface deposits
b. 25 = Historic appearance greatly altered; 50 = Some historic appearance retained; 75 = Most historic appearance present; 100 = Historic appearance intact; N/A = not applicable
c. National Register of Historic Places evaluation criteria: L = Location, S = Setting, D = Design, A = Association, W = Workmanship, M = Materials, F = Feeling
d. RV = Research value; ranked from 0 (no value) to 5 (highest value). CR = Confidence in the assigned RV; 1 = Judgement is more guess than science and is likely to be not reliable, 2 = Judgement is moderately reliable, 3 = Judgement is most likely to be reliable
e. NRHP = National Register of Historic Places NE = Site is not eligible for inclusion on NRHP. PE = Site is potentially eligible.

crete. The low-pitched, end-gabled roof has a lower hip roof over a porch on the north side and is covered with tar paper. Roof rafters are exposed. The house has channeled siding with end boards on all corners. Lighting fixtures inside the house date to the mid-1920s. Other features include tongue and groove interior floors, varnished pine door and trim, pine kitchen cabinets, and vertical paneled doors.

HT-5: The remains of a 1950s hunting club are present at this location. Structures were destroyed during the 1980 flood. Cement pads, asphalt siding and linoleum fragments, boards, screw top mason jars, and other debris are present in this location.

HT-6: This prehistoric site is situated on top of a Piper sand mound in the center of Holland Tract. Artifacts found on the surface of the site include obsidian debitage and tools, a shaped metate, baked clay cooking balls, clamshell and olivella disk beads, groundstone, biface fragments, and basalt and chert debitage. Hundreds of fragments of human and mammal bone were noted on the site surface. The site appears to have served as a cemetery and perhaps as an occupation site for prehistoric people. The top of the mound has been disced and bones were located in the furrows.

HT-7: This cement pad was situated on top of a Piper sand mound and was used for ranching operations after 1922. No artifacts were found associated with the pad and it was recorded as an isolated feature.

HT-8: One isolated mano, used to grind seeds and nuts by prehistoric and ethnographic populations, was located on a Piper sand mound.

HT-9: One cement pad was recorded as an isolated feature. No structural remains or artifactual material was noted around the pad.

HT-10: Two fragments of unidentifiable bone, associated with prehistoric use of the area, were noted on a Piper sand mound.

HT-11: Less than five percent remains of this Piper sand mound. The mound has been removed as levee fill and most of the cultural material is no longer on site.

Several flakes of obsidian and chert, one biface, groundstone, and possible human bone fragments were noted in the cut bank of the mound and in the surrounding area. The presence of cultural material indicate that the mound originally may have contained prehistoric burials.

CA-CCo-147: This site, originally recorded in 1943, is located on top of a sand mound in the southwest quarter of the tract. The site is characterized by bone fragments (bird, fish, mammal, human), shell, obsidian and chert debitage, fire cracked rock, ground stone implements, and stone tools typical of a Late Horizon occupation (Figure 10).

The west side of this mound was severely eroded by wave action during the 1980 flooding of the tract. At that time, human remains were noted in the cut bank of the mound. The surface of the mound is subject to on-going disturbance by cattle (it is near a corral and salt block area). It is estimated that 30 percent of the original site is intact; the remainder was washed away through flooding.

Other Resources: According to Hampson, buildings and structures situated at historic camp locations on the south and east side of the tract were destroyed by flooding in 1980 and were subsequently removed (Hampson 1985:6). Several locations around the perimeter of the island contain bulldozed piles of concrete slab fragments, pier blocks, and fragments of milled lumber. While these piles of debris probably represent labor camp locations, no data potential exists at these locations.

Webb Tract

Seven resources were identified on Webb Tract; two architectural sites and five historical isolated features or artifacts associated with labor camps present on the island before 1920 (Table 8, 9).

WT-1: A solarized amethyst-colored glass tumbler base was located in a plowed field. This artifact is probably associated with agricultural labor camps present on the island from circa 1913 to 1922.

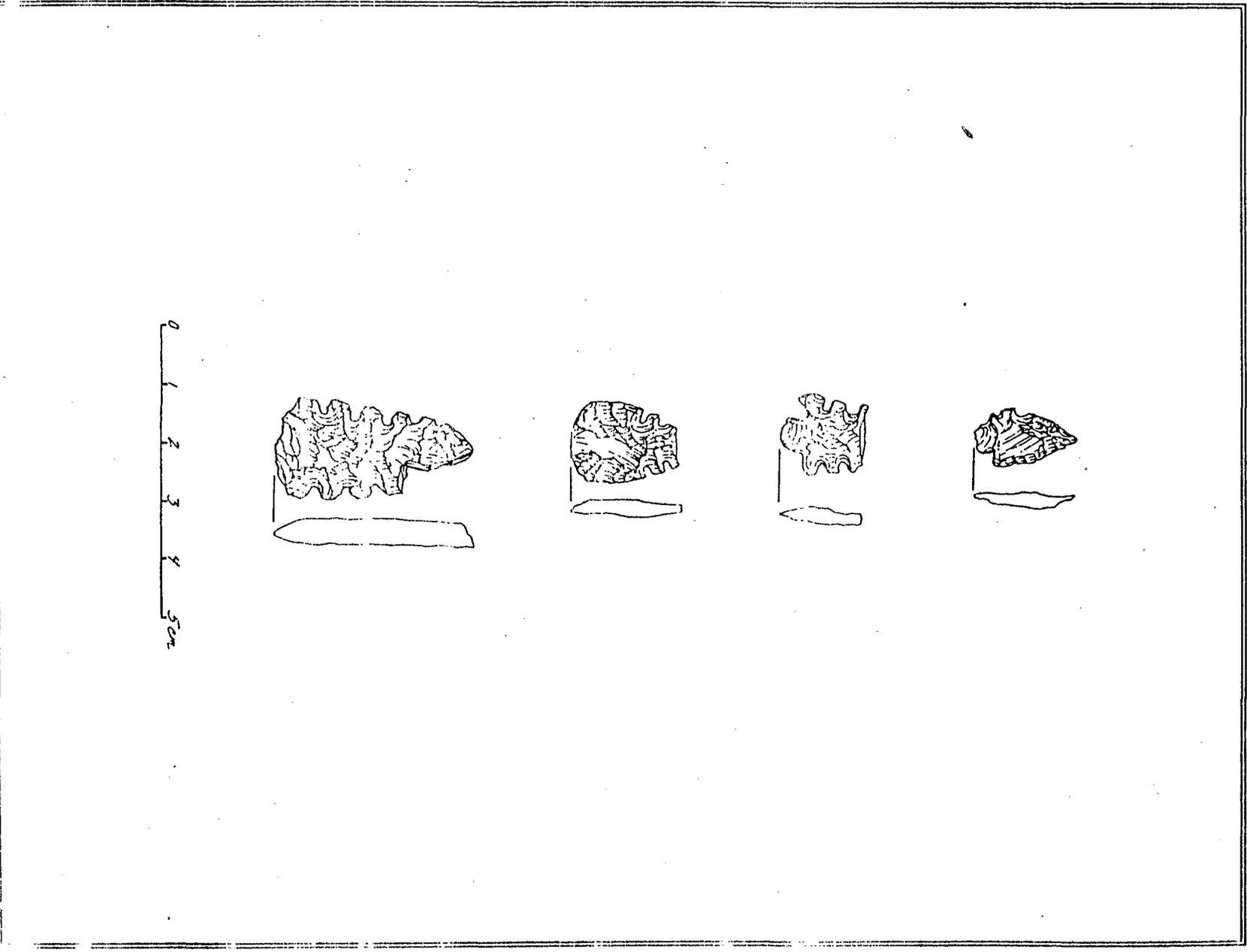


Figure 10 Diagnostic obsidian tools from CA-CCo-147

C-075043

Table 3. Presently Identified Cultural Resources on Webb Tract: Description and Evaluation Data

Site/Temp Number	Temporal Unit	Resource Type	Site Characteristics	Landform	Area/Depth (a)	Cultural Value Ascribed Function	% Intact (b)	Integrity (c)	RV/CR (d)	NRHP Status (e)
WT-1	ca. 1912 - 1920	Historic	Sun tinted amethyst glass tumbler base	Plowed field	S	Japanese Labor Camp #17	N/A	None	0/3	NE
WT-2	ca. 1912 - 1920	Historic	Six white improved earthenware fragments	Plowed field	S	Japanese Labor Camp (?)	N/A	None	0/3	NE
WT-3	ca. 1912 - 1920	Historic	Five white improved earthenware fragments	Plowed field	S	Japanese Labor Camp (?)	N/A	None	0/3	NE
WT-4 CA-C00	ca. 1915 - present	Architectural	Ferry house	In river; top of levee	S	Ferry Landing	95	LS	2/3	NE
WT-5 CA-C00	1912 - present	Architectural/ Historic	Structure, trash scatter	Piper sand mound	SS	Japanese Labor Camp #10	75	LSM	3/3	PE
WT-6	ca. 1912 - 1920	Historic	Cement Pad	Base of levee	S	Pumping Station	N/A	L	0/3	NE
WT-7	ca. 1912 - 1920	Historic	Cement pad	Base of levee	S	Japanese Labor Camp #14	N/A	L	0/3	NE

a. S = Surface deposits; SS = Surface deposits with possible subsurface deposits

b. 25 = Historic appearance greatly altered; 50 = Some historic appearance retained; 75 = Most historic appearance present; 100 = Historic appearance intact; N/A = not applicable

c. National Register of Historic Places evaluation criteria: L = Location, S = Setting, D = Design, A = Association, W = Workmanship, M = Materials, F = Feeling

d. RV = Research value; ranked from 0 (no value) to 5 (highest value). CR = Confidence in the assigned RV; 1 = Judgement is more guess than science and is likely to be not reliable, 2 = Judgement is moderately reliable, 3 = Judgement is most likely to be reliable

e. NRHP = National Register of Historic Places NE = Site is not eligible for inclusion on NRHP. PE = Site is potentially eligible.

Table 9. Architectural Data Summary of Bouldin Island, Holland Tract, and Webb Tract

Tract No	Descriptive Name	Barns	Sheds	Bunkhouse	Packing Shed	Single Residence	Boarding House	Modern Structures	Other	Total No. of Structures
BI-2	Camp #21	-	-	-	-	1	1	3	Cement pads, trash scatter	5
HT 1	Duck Club/Labor Camp #1	-	-	-	-	1	-	-	Orange, apricot, magnolia, palm trees, dock	3
HT 4	Foremans Residence, Camp #5	-	-	-	-	1	-	1	Cement pad, orange trees	2
WI-4	Ferry House	-	-	-	-	1	-	-	Ferry landing	1
WI-5	Asian Labor Camp #10	-	-	1	-	-	-	1	Trash scatter	2

C.
P.

C-075045

WT-2 and WT-3: Fragments of white improved earthenware were noted in plowed fields in two locations on the tract (six sherds at WT-2 and five at WT-3). The ceramic pieces are probably associated with labor camps present on the island between circa 1913 and 1922.

WT-4: A ferry house is located at this location. A telephone booth is constructed outside the house. Associated features include the ferry landing. According to the ferry operator, the house was moved to Webb Tract over 20 years ago from an unknown location.

Architectural Description. The ferry house is a one-story, board and batten structure supported on wooden pilings. The low-pitched gable roof has exposed rafters and is covered with corrugated metal. The west side of the building has two six-pane horizontal windows. Architecturally, the style is consistent with Craftsman and the building was probably constructed between 1910 and 1920.

WT-5: Situated at the site of Shima's Camp 10, this site consists of a large, one-story wooden boarding house constructed on top of a sand mound. Trash, both historical and recent, has been deposited off the sides of the mound to the north and south. Historic artifacts observed on top of the mound by the house and downslope include aqua, amethyst, olive, and clear colored bottle glass fragments, window pane fragments, ceramic sherds (whiteware), one brass suspender buckle embossed with the letter "B", and one Chinese brown-glazed vessel fragment. A metal Quonset hut-style barn, currently used for storing hay bales, is present on the mound.

Architectural Description. This Craftsman boarding house has a low-pitched, side-gabled roof with exposed rafters and knee braces. Louvres are present on the gable ends. The windows are original and are of single-pane, double-hung sash. The original board siding has been covered with plywood siding and new window surrounds. The house is supported by wooden piers.

WT-6: Located east of a current pumping station, this area contains one concrete foundation and a bulldozed pile of modern boards, machinery, and other debris. The pad was recorded as an isolated feature.

WT-7: The 1917 site of Camp 14 is represented in the field by a concrete slab foundation pad. The pad was recorded as an isolated feature. No artifacts or other cultural material was noted in association with the pad.

Other Resources: Recent trash is present in plowed fields. As with Holland Tract, several areas of bulldozed concrete slabs and pier blocks were noted. These are not associated with known labor camp locations and do not appear on historic maps.

Several areas of Piper fine-grained sandy loam were surveyed on Webb Island. These areas contain a high potential for prehistoric burial sites, although no surface indications were present.

RESOURCE EVALUATION

Resources identified on each island were assessed in terms of National Register of Historic Places (the Register) criteria and CEQA guidelines. Six sites and all 22 isolated features and artifacts were measured, recorded, sketched, and/or photographed. These resources do not appear to contain data potential beyond that recorded at the inventory level and need not be considered any further in the Section 106 process. Nineteen sites are potentially eligible to the Register under 36 CFR 60.4 (a), (b), and/or (d).

Bacon Island

All of the 13 sites on Bacon Island are related to agricultural activities that occurred between circa 1910 and the present. The National Register considers resources individually or as a district. A district is a geographically definable area that possesses a significant concentration or continuity of sites, buildings, structures, or objects united by past events (Department of the Interior 1982:5). District boundaries are established after reviewing a property's physical use, visual qualities, and research values. Bacon Island meets the criteria as a National Register district due to its continuity of agricultural use and the concentration of labor camps still in use on the island. Virtually no intrusive (non-agricultural) elements have been imposed on the historic landscape to destroy the identifiable locations of the original labor camps, ditches, canals, pumping stations, and fields.

Architectural Summary. Most of the original buildings on the island were constructed in the Craftsman style, which was the dominant architectural style for smaller houses built throughout the country during the period 1905 through the early 1920s. The style originated in Southern California, inspired primarily by the work of Charles and Henry Green, brothers who practiced in Pasadena from 1893 to 1914. Their residences were given extensive publicity in many architectural and home magazines, familiarizing the nation with their Craftsman style. As a result, a flood of pattern books appeared, offering plans for Craftsman bungalows, and, in some cases, pre-cut packages of lumber and detailing were offered to the home builder.

Given the similarity of the Bacon Island buildings, it is not unlikely that they were constructed from pattern books. Boarding houses at three separate camps are exactly alike, while others have minor alterations of the same plan. These boarding houses, and one very large house at Camp 3 (see Figure 7), embody the highest Craftsman style with cross-gabled roofs, dormers, decorative beams, or braces, exposed rafters, recessed porches supported with square columns, triangular braced supports, gable stickwork, multi-pane sash windows, and other architectural elements (see Figure 11).

Differing from the basic Craftsman style, however, are two- and three-story stairways, leading to exterior entrances, imposed upon the facades and sides of the houses and necessary to provide access for the many workers who resided in the houses. This is in contrast to the usual single family Craftsman house. Other vernacular elements have been imposed upon the basic style of the building to adapt them to a variety of domestic and agricultural uses by the laborers.

Some of the individual residences of the camps, especially those that were used by foremen, are typical of the Craftsman Bungalow style found in any small California town. Sheds, barns, and bunkhouses also have Craftsman elements in varying degrees.

Evaluation. The resources on Bacon Island are potentially eligible for inclusion to the National Register of Historic Places under criteria a, b, and d. Given the common occurrence of Craftsman-style structures in California, the district does not meet criterion c. Most of the camps retain integrity of location, setting, design, workmanship, association, materials, and feelings. BC-5 retains integrity of location, setting, and materials, while BC-6 has integrity of location, setting, and association.

Criterion A

The resources within the proposed Bacon Island District are associated with reclamation of Delta lands and the continued use of the Island for agriculture. The reclamation of the Delta and the development of agriculture in the region played an important part in the economic history and development of California. The rich peat soil in the Delta supported a wide variety of crops and proved especially productive in the growing of asparagus and potatoes.

The District constitutes a historically complete agricultural area that contains evidence of all of the support facilities related to agriculture in addition to the activities themselves. Included are agricultural structures and facilities which are related to

isolated enterprises unrelated to a larger agricultural landscape, the proposed Bacon Island District encompasses a complete geographical area with a 75-year period of agricultural use. This includes the related levees, drainage and irrigation systems, peat soil, pumping stations, agricultural buildings, and the labor camps with their residential facilities.

The majority of the camps present within the District retain their earliest configuration of residences, boarding houses, bunkhouses, washhouses, offices, barns, equipment and packing sheds. Although some newer buildings have been constructed and the original buildings have undergone some alterations, the integrity of the camps remains relatively intact.

The importance of the camps increases when one considers their use by Japanese laborers. The Japanese were instrumental in land reclamation and agricultural development in the Delta. Eleven camps that were built by a Japanese man to house his Japanese workers are intact within the District, as well as ruins of a twelfth. More importantly, unlike most other islands in the region, Japanese continue to farm the island today, increasing its importance under criterion a.

Criterion B

Land reclamation and agricultural development of Bacon Island is the result of the efforts of George Shima, a well known Japanese entrepreneur. Between 1889 and 1926 Shima was the driving force behind much of the reclamation work in the region. In addition, his willingness to take risks, exemplified by his efforts to establish the potato as a viable crop in the region, did much to advance the reputation of the Delta as a rich agricultural region. Innovative marketing techniques developed by Shima, such as using red bags marked with "Shima Fancy" to package his potatoes, also gave added credibility to products grown in the Delta and made "Shima Fancy" a common household item.

Shima also played an important role in the Japanese community. Not only did he provide hundreds of jobs to his fellow countrymen, he arranged work so as to keep men employed year round, eliminating the transient, seasonal lifestyle required of many farm laborers. He leased his own farmland to other Japanese, allowing them to try their hand at tenant farming and giving them an opportunity to become entrepreneurs in their own right.

Shima worked to advance a positive image of Japanese in an era of extreme racial prejudice. He was the founder and president of the Japanese Association of America, wrote regularly to local and national newspapers in attempts to diffuse prejudice against Asians, and contributed liberally to Stanford University and various community organizations in Berkeley. He was respected by both American and Japanese businessmen and by his employees.

Although Shima constructed camps on numerous islands throughout the Delta, a cursory survey indicates that only Bacon Island retains the majority of labor camps associated with him. Individual structures that were probably built by Shima around the same time period (1915-1920) are present on Bouldin Island, Webb and Holland tracts, Orwood Tract, and Mandeville Island. The majority of the camps associated with Shima, however, appear to have been dismantled, increasing the importance of the Bacon Island resources. In addition, Shima lived at Camp 1 for a time prior to 1915 and maintained his Delta office at Camp 3 (Figure 11), both on Bacon Island, contributing to the significance of the District under criterion B. Finally, Bacon Island and George Shima's office at Camp 3 are included as important resources in the State Office of Historic Preservation's Ethnic Survey program (Fujita 1980, 1980a).

Criterion D

The proposed Bacon Island District offers an important opportunity to study the Japanese agricultural experience. The availability of well-preserved architectural and potential historical archaeological remains, good ethnic documentation, and probable informant data allows for a uniquely complete and accurate reconstruction of historical agricultural activities. The District resources are representative of agricultural activities and architectural designs that were common throughout the Delta region. Abandoned farm equipment is also present on the island. Information available from a study of the District may be applicable to other agricultural sites and districts in the state.

Potential subsurface archaeological deposits relating to the use of the camps by Shima's work force are present at several of the camps with structures and at BC-5, a dismantled camp. Artifacts noted on the surface indicate a retention of Asian domestic goods and food products by the laborers. A study of deposits on the island may yield information concerning changes in ethnic populations over time, subsistence, demographic composition, and cultural continuity.

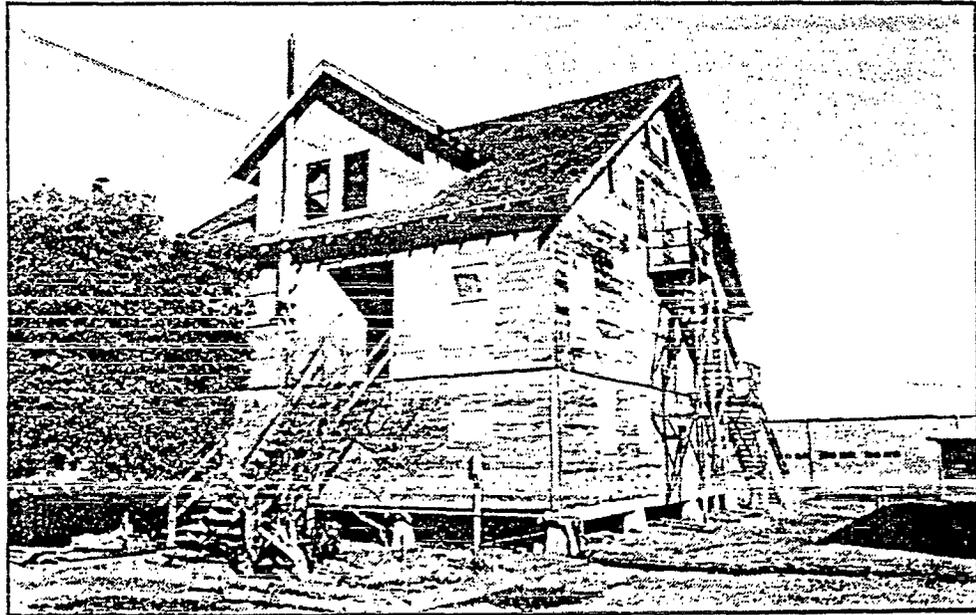
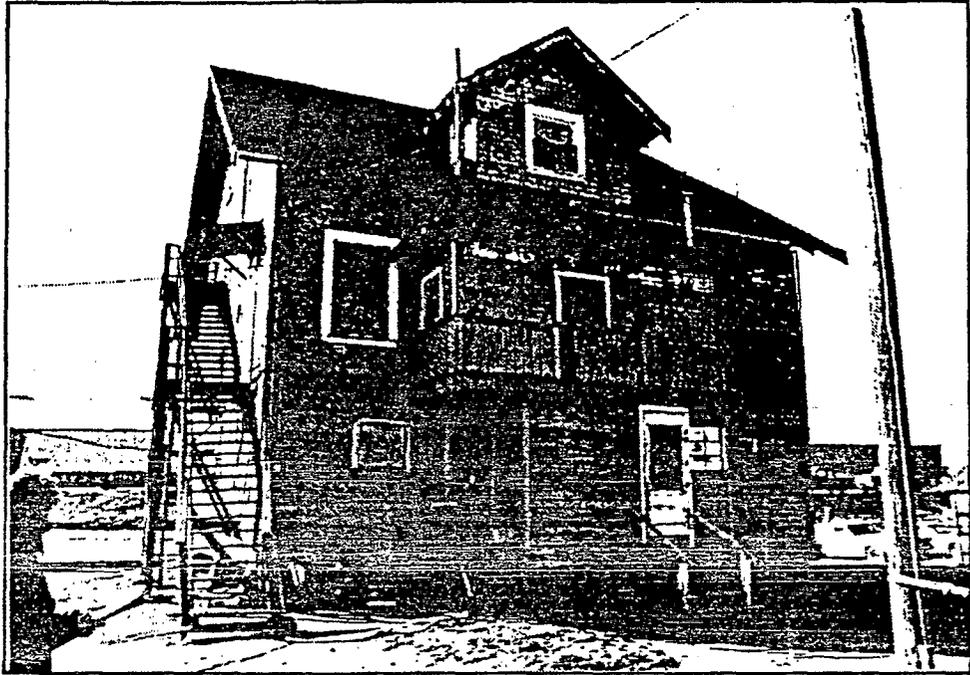


Figure 11 George Shima's office at Camp 3, Bacon Island, now used as a boarding house. View's west (top) and northeast (bottom)

Bouldin Island

Of the 13 resources identified within the project on Bouldin Island eight are isolated features (concrete pad) or artifacts. These have been recorded on State of California forms, do not have additional research potential, and are not eligible for listing on the National Register of Historic Places. Two sites, BI-1 and BI-8, consist of domestic trash scattered across the surface of plowed fields. Both sites appear to be surface scatters only and the original context and location of the material could not be determined. Therefore, these two resources are not eligible for inclusion to the National Register of Historic Places.

BI-2 is a trash scatter situated along the base of the levee. Two complete bottles were identified at this site, indicating a potentially intact subsurface deposit. In addition, a large blackberry thicket, squarish in shape, is present on the site and may have grown up over a structure or foundation. The site retains integrity of location, setting, and materials. There is a paucity of information concerning the day-to-day existence of Asian laborers in the early 1900s. The site has the potential to answer questions regarding economic exchange, subsistence, material preference, and ethnic continuity and is potentially eligible to the National Register of Historic Places under 36 CFR 60.4 (d).

BI-10 is the historic site of Bouldin Landing and was occupied from circa 1873 into the second half of the twentieth century. Surface artifacts date post-1900 and it is possible that a subsurface archaeological deposit is present on site. Little is known concerning pre-1900 landing sites on the interior islands of the Delta region and any intact subsurface deposits dating to the initial use of the site could offer significant information concerning economic and material development of Bouldin Landing. The site retains integrity of location, setting, and materials. Based on the data potential and integrity of the resource, it is potential eligible for inclusion to the National Register under criterion 36 CFR 60.4 (d).

BI-13 includes two Craftsman-style boarding houses, cement foundations, and recent trash. The buildings are not unique occurrences of Craftsman style in the Delta. In addition, there is a better representation of this type of structure built to house farm laborers on Bacon Island. The cement foundations and trash are not unique and do not meet National Register criteria.

Holland Tract

Two architectural sites, HT-1 and HT-4 are related to early agricultural development of the tract by George Shima. These two structures are Craftsman in style and are common in the region. More intact and representative examples of labor camp architecture are present on Bacon Island. As such the two sites are not considered potentially eligible for inclusion to the National Register of Historic Places.

Three prehistoric isolated artifacts were recorded during the survey. These items were not associated with other cultural material, are not unique, and do not contain further research value. As such, they are not eligible to the National Register. Four concrete pads were also identified, measured, and recorded as isolated features. No artifactual material was located in association with the foundations and they do not warrant further investigation.

Three prehistoric sites were identified during the investigation. All contain human bone, lithic debitage and tools, groundstone, and other diagnostic artifacts. Although prehistoric sites are known to occur in the Delta, they have disappeared at an alarming rate due to intense agricultural land use, subdivisions, and flooding. CA-CCo-147 and HT-6 contain numerous diagnostic tools indicating an occupation dating back perhaps as early as 2,500 BC, while HT-11 may also contain diagnostic artifacts. The wide variety of material identified on the surface of the site, including mammal bone, indicates that the resources may have functioned as village sites as well as cemeteries. These sites have the potential to yield information important to the reconstruction of prehistoric lifeways in the Delta, including economic exchange patterns, demographic and social organization, subsistence and settlement, and lithic technology. The three sites are potentially eligible to the National Register of Historic Places under criterion d.

Members of the local Miwok population have expressed concerns regarding the Native American remains contained in all three sites. The human remains are protected under Public Health Code and under Senate Bill 297 and their disposition is being taken under consideration by the Native American Heritage Commission in Sacramento and the local Indian community.

Webb Tract

Five of the seven resources identified on Webb Tract are isolated artifacts or features and do not have the potential to yield important information. These artifacts

and concrete pads were recorded on State of California forms and no further work is required.

WT-4 consists of the ferry house. This house is typical of the Craftsman architectural style common throughout the Delta and is not unique. It does not meet NRHP criteria for listing as a significant resource.

WT-5 structure is also Craftsman in style and is not unique. However, the house sits on a Piper sand mound and garbage has traditionally been deposited over the sides of the mound. Artifacts dating to the initial occupation of the site around 1913 were noted on the surface and in the cut bank. It is possible that a subsurface deposit is present on the site. An intact deposit may yield information concerning Asian use of the site, subsistence, and changes in ethnic population over time. Therefore, the site has the potential to yield information important in reconstructing the life of Asian farm laborers on the tract prior to 1922 and is eligible to the Register under 36 CFR 60.4 (d). WT-5 also retains integrity of location, setting, materials, as association, increasing its importance.

IMPACTS AND MITIGATION MEASURES

The following discussion takes into account only those sites that are potentially eligible for inclusion to the National Register of Historic Places. This includes all 13 sites identified on Bacon Island, BI-2 and BI-10 on Bouldin Island, CA-CCo-147, HT-6 and HT-11 on Holland Tract, and WT-5 on Webb Tract. The remaining identified resources on all four islands have been recorded on appropriate State of California Archaeological Site or Feature records. These records have been submitted to California Archaeological Inventory, Northwest and South Central Information Centers for assignment of a permanent state-issued trinomial designation and eventual inclusion into the State Office of Historic Preservation Data Bank. No further cultural resource management is recommended under Section 106 for these resources.

Four alternatives are being considered for the project. The suggested alternative is the proposed water storage project previously described. Other alternatives include no-project, maximum water storage on all islands, and intensified agricultural use. Impacts to the resources will be discussed in light of each proposed alternative.

Impacts on Historic Sites

Preferred Alternative. The historic resources that are potentially eligible for inclusion to the Register lie primarily around the perimeters of the islands at the base of the levee system. These areas are designated to be filled in to create gently-sloping "beach slopes" and will be the most severely disturbed by levee construction during the water storage project. All structures located on the sides or near the bases of the levees would be buried or removed during the initial stage of the project. Sites affected include the 11 camps with standing structures, one dismantled camp, and bridge tender's house on Bacon Island, and the two sites on Bouldin. The Webb Tract site is within the borrow area and will also be significantly impacted by the project.

No-Project Alternative. This alternative assumes that existing use of the islands will continue. The majority of the historic structures within the project are being used today as storage facilities, residences, boarding houses, and washhouses. Normal wear and tear of the structures, combined with modifications and renovations when necessary, will continue to degrade the integrity of the resources. In addition, some of

the structures are abandoned and slated for removal. The no-project alternative will result in continued deterioration of the buildings through intensive use, neglect, and natural elements. The archaeological resources that date to the historic period would continue to be impacted by grazing sheep and cattle, plowing, and recreationalists.

Maximum Water Storage Alternative. The impacts of the maximum water storage alternative on the historical resources would be identical to those described under the preferred water storage alternative.

Intensified Agricultural Alternative. The shift from present agricultural practices to more intensive agriculture within the Delta Wetlands project area would differ little from the existing conditions. However, increased numbers of laborers would result in additional wear and tear of the standing structures. Structures that currently are not in use on Bacon Island (for example, Camp 1), may be upgraded and opened up to laborers again if agriculture intensified. Increased laborers on the islands may directly affect the archaeological resources through vandalism, plowing of those areas currently allowed to remain undisturbed, and increased livestock grazing around the perimeter of the levees.

Impacts on Prehistoric Sites

Three prehistoric resources were identified on Holland Tract. In addition, Piper sand mounds on Holland and Webb tracts may contain subsurface prehistoric remains that were not identified during the inventory.

Preferred Alternative. All three sites lie outside the area of impact from levee reconstruction but within the proposed inundation zone. Current plans call for the water level on Holland to be maintained at zero feet above mean sea level. The top of CA-CCo-147 is at five feet amsl, at HT-6 it is seven feet amsl, and at HT-11 the highest point reaches five feet amsl. While material on the top of the mounds would not be affected by flooding, the potential exists for erosion of the sides of the sand mounds by wind-generated waves and by periodic inundation and drainage. In addition, resources that may be present in Piper soil mounds on Holland and Webb tracts, but were not identified through surface investigation, may be exposed through foundation of the tracts

No-Project Alternative. All three prehistoric sites on Holland Tract are currently being impacted. CA-CCo-147 is impacted daily by cattle trampling across the site. Plowing has exposed burials and other material at HT-6. Backhoes have removed the majority of HT-11 by using the sand in the Piper mound for levee reconstruction and strengthening projects. These impacts to each site would continue if the water storage project does not proceed. In addition, agricultural use of the islands results in deflation of peat soils and increases the exposure of the Piper sand mounds, thereby increasing the potential for erosion of the site margins, particularly through wind action and cattle trampling.

Maximum Water Storage Alternative. This alternative would result in the same impacts to the Piper sand mounds as would the normal water storage plan. Water level would be higher, however, and may result in complete inundation of each site, altering the wave action and erosion potential to each site.

Intensified Agricultural Alternative. Any intensification of activities on Holland and Webb tracts that affect the Piper sand mounds could disturb prehistoric resources. Plowing the tops of the mounds or removing the existing mounds through agricultural or levee building activities would expose subsurface deposits on known and unknown sites. Reintroduction of hog feeding could affect the Piper sand mounds on Holland Tract if the animals are allowed to concentrate in known Piper soil areas.

Recommended Mitigation Measures

The impacts to known cultural resources within the Delta Wetlands project that meet National Register of Historic Places criteria may be reduced to less than significant levels with adequate mitigation measures developed through consultation and coordination with the State Office of Historic Preservation. The following discussion considers potentially eligible resources on an island-by-island basis and offers recommendations for treatment of the resources.

Bacon Island

The eleven camps with standing structures, the bridge tender's house, and the archaeological site of BC-5 will be significantly impacted by the water storage project. Several treatment options concerning the existing labor camps are offered below.

- o Redesign the project to avoid damaging the structures;
- o Relocate the structures outside the construction or inundation zone;
- o Stabilize, upgrade, and create adaptive reuse of the structures;
- o Retrieve significant historic aspects and information potential of the historical district through a combination of methods, resulting in a Finding of No Adverse Effect on the resources.

Constructing "beach slope" levees is crucial to successful completion of the water storage project and it may not be feasible to redesign this aspect of the project. Moving the structures away from flooding and construction zones may require removing the buildings from the island entirely, or relocating the structures on top of the levees and may not be cost effective. Adaptive reuse of the structures is applicable only to those buildings situated on top of the levee by the time of levee reconstruction. Although this option preserves certain resources, it would not compensate for the destruction of the remainder of the structures. It is the totality of the resources, not individual elements, that provide the greatest significance in the district.

It is recommended that the retrieval of significant historical aspects and information potential of the District be pursued. Historical and ethnographic research are cost-effective mitigative measures. Most research domains pertinent to the district (such as agricultural technological changes through time, ethnicity, social, religious, and demographic data) can be addressed by careful identification, mapping recordation, documentary research and consultant interviews.

In order to reduce impacts to the District to less-than-significant levels, several treatment measures are recommended. These measures, sponsored by the project proponent, should be completed prior to destruction of the sites.

1. Conduct extensive archival research to locate historical documentation from public and private collections, photographs, labor employment records, historic newspaper accounts of agriculture and Shima's enterprises, official company records, agricultural production statistics, and census data. Since some of these records may be written in Japanese, a historian capable of transcribing and interpreting Japanese characters is recommended.

2. Conduct consultant interviews to identify specific buildings, uses and occupants at various time period, to identify "invisible" historical elements of the cultural landscape, and to provide information on non-physical aspects of social, ethnic, religious, economic, and political events. If possible, informants should be taken to the sites and formal interviews should be tape-recorded, transcribed, and curated at a local repository, such as the San Joaquin Historical Society Museum. Due to potential language barrier problems, a trained historian fluent in Japanese is recommended for this task.
3. Produce maps of the cultural landscape specific to several identified time periods and occupations, showing specific uses of identified buildings or structures and changes in function through time.
4. Using large format cameras, provide technical photographic recordation of remains of the camps and buildings (both interior and exterior) in accordance to standards outlined for the Historic American Buildings Survey (HABS). Overviews of each camp depicting camp layout and design are important elements of the photographic documentation.

The program outlined above is designed to retrieve a variety of data on development of agriculture on the island, technological changes, and ethnic diversity and use of the camp, focusing on cultural elements. In order to maximize dispersal of the data, a technical report, with appended interview transcripts, maps, and detailed description and analysis, should be prepared and filed with the San Joaquin County Museum, South Central Information Center, and State Historic Preservation Office. A popular article, designed for distribution to the general public, should be prepared for publication. Avenues for publication may include the Pacific Historian (published by the University of the Pacific in Stockton), The Californians, California History (Quarterly Journal of the California Historical Society), the AmerAsian Journal (published by University of California, Los Angeles), or publications sponsored by the Japanese Citizen League of America.

Aside from the architectural and design elements of the District, some of the camps have artifacts scattered across the surface and may contain subsurface historical archaeological deposits. BC-5, the site of Day's Landing (1873-1910) and Shima's Camp 5 (1915-1926), no longer has standing structures but may have subsurface deposits. Analysis of artifactual material data from this site, and other camps, will shed light on the material lifestyle represented in a Japanese labor camp before 1925. When combined with the archival and interview information, the archaeological component will allow for a more thorough reconstruction of twentieth-century labor camps in the Delta. It is recommended that a program designed to recover these data with the potential to adequately interpret the Japanese experience in the Delta, be implemented prior to levee

construction, particularly at BC-5. This work should be guided by a research design approved by the State Office of Historic Preservation (SOHP), State Water Resources Control Board (SWRCB), and the United States Army Corps of Engineers (ACOE).

Bouldin Island

Two sites on this island, BI-2 and BI-11, have the potential to yield information concerning early development of landing sites in the Delta, material culture of Japanese labor camps in the first half of the twentieth century, ethnic diversity and cultural continuity, and development of agriculture on the island. Both sites are located near the base of the levee and avoidance during the water storage project may not be feasible.

An excavation program, designed to identify and recover those data with the potential to address questions pertinent in understanding the early development of the island and the role of the Japanese laborer is recommended. This program should be guided by a research design approved by the SHPO, SWRCB, and ACOE, and should combine focused archival research with field work. Field work may include using mechanized equipment to trench across each site (exposing subsurface deposits), excavating rapid recovery units to determine horizontal extent of each resource, digging excavation units to verify subsurface integrity, composition, and feature identification, and/or clearing away blackberry brambles from each site to identify presently-unidentified structural remains.

Holland Tract

Three prehistoric sites have been identified on Holland Tract. In accordance with Public Health codes and Senate Bill 297, the Contra Costa County Coroner and the Native American Heritage Commission were informed of the presence of human remains on all three sites. A field visit was conducted on February 1, 1989, with representatives from Delta Wetlands, Jones & Stokes Associates, PAR & Associates, NAHC, and the local Native American community to examine the resources. The NAHC is currently in the process of drawing up recommendations on appropriate treatment of these significant resources. The selection of mitigation measures will depend on final project design, concerns of the local Native American community, approval and guidance by responsible agencies, and agreements with Delta Wetlands, as determined during the Section 106 consultation process.

Webb Tract

One site on Webb Tract, WT-5, is potentially eligible to the National Register. An excavation program, guided by an accepted research design and using a combination of

historical and archaeological field research is recommended. As with similar sites on Bouldin Island, this program should be designed to verify subsurface integrity, composition, and research potential of the resource and to collect data important in addressing questions concerning the history of the region.

General Mitigation Recommendations

Holland and Webb tracts contain Piper sand mounds that may have prehistoric burials within them. It is suggested that a cultural resources expert examine the margins of the Piper sand mounds during annual drawdown for evidence of exposure of cultural resources through erosion. If such evidence is discovered, archaeological recordation and mitigation measures developed in consultation with the NAHC, SHPO, SWRCB, and ACOE should be implemented prior to additional water storage on the tract. These examinations should be required at least once per year for the life of the project.

The no-project alternative or intensive agricultural alternative may result in impacts to the Piper sand mounds through plowing, increased grazing, or hunting activities. Delta Wetlands should maintain an awareness of the potential for cultural resources that exist on the property and make all reasonable efforts to retain the natural state of the Piper sand mounds, concentrating agricultural activities on the low-lying peat soil areas.

The effect of deflating peat soils on the exposure and erosion of Piper sand mounds may be mitigated somewhat by instituting erosion control measures on the margins of the mounds. If substantial regrading or trenching through areas of Piper soils are contemplated, an experienced professional archaeologist should be retained to monitor the work and to recommend appropriate actions if cultural resources are found.

If at any time human remains are noted eroding out of a mound, or are found on the ground surface, work should stop in that area immediately and the appropriate county coroner should be notified to determine the antiquity of the remains. If it is determined that the remains are Native American in origin, then AB 297 requires that the Native American Heritage Commission be notified and given an opportunity to examine the site and recommend mitigative action.

Finally, PAR did not have access to several hundred acres on both Holland and Webb tracts that were not owned by Delta Wetlands. Piper sand mounds were included within these "no-access" areas and may contain surface indications of prehistoric use or subsurface deposits. If access to these parcels is granted at a later date, Delta Wetlands should take steps to inventory the sand mounds and to protect the mounds from erosion.

SUMMARY AND CONCLUSIONS

Twenty-five cultural resources, including one previously recorded site, and 22 isolated features or artifacts have been identified and documented within the Delta Wetlands project area. The sites have been formally recorded and were submitted to the Northwest and South Central Information Centers for permanent trinomial numbers. Site types include historic and prehistoric archaeological resources and architectural remains and are listed below.

Resources Judged Ineligible

Preliminary assessment indicates that six sites and all of the isolated features and artifacts do not appear to meet the criteria for significant resources as outlined by 36 CFR 60.4, due to their lack of further research potential or lack of integrity and are probably not eligible to the National Register of Historic Places. The majority of the isolates consists of concrete pad or ceramic sherd with no other cultural context. The majority of the non-eligible sites are buildings constructed in a common Craftsman style or surface trash scatters with no contextual or locational data. Recoverable technical data, such as measurements, descriptive data of building style or artifact, photographs, and sketches, were obtained at the inventory level and no further management of these resources under Section 106 is recommended.

- BI-1 (Historic - Trash Scatter)
- BI-8 (Historic - Trash Scatter)
- BI-13 (Historic - Structures)
- HT-1 (Historic - Structure)
- HT-4 (Historic - Structure)
- WT-4 (Historic - Ferry House)

Sites Judged Potentially Eligible

Thirteen sites, all on Bacon Island, have been preliminarily evaluated as being potentially eligible to the National Register based on 36 CFR 60.4 (a), (b), and (d) due to their association with the development of agriculture in the Delta by Japanese laborers, and with George Shima, and for their potential to yield significant data.

- BC-1 (Architectural/Historical - Shima's Camp 1)
- BC-2 (Architectural - Shima's Camp 2)
- BC-3 (Architectural - Shima's Camp 3)
- BC-4 (Architectural - Shima's Camp 4)
- BC-5 (Historical/Archaeological - Day's Landing/Shima's Camp 5)
- BC-6 (Architectural - Shima's Camp 6)
- BC-7 (Architectural - Shima's Camp 8)
- BC-8 (Architectural - Shima's Camp 9)
- BC-9 (Architectural - Shima's Camp 10)
- BC-10 (Architectural - Shima's Camp 10-1/2)
- BC-11 (Architectural - Shima's Camp 11)
- BC-12 (Architectural - Bridge Tender's Residence)
- BC-13 (Architectural - Shima's Camp 12)

Three prehistoric sites are potentially eligible under 36 CFR 60.4 (d) for their potential to yield significant scientific information concerning the development of prehistoric culture in the Delta, economic exchange, demographic and social interaction, and other research domains. These sites are:

- CA-CCo-147 (Prehistoric - burials/habitation)
- HT-6 (Prehistoric - burials/habitation)
- HT-11 (Prehistoric - burials)

Three historic sites are potentially eligible to the Register under 36 CFR 60.4 (d) for their potential to yield information important in reconstructing the development of agriculture and the Japanese experience in the Delta. These are:

- BI-2 (Historic - Trash Scatter - Shima's Labor Camp)
- BI-10 (Historic - Trash Scatter - Boudin/Schultz Landing Site)
- WT-5 (Historic - Trash Scatter - Shima's Labor Camp)

Conclusions

Thematically, the resources identified within the Delta Wetlands project are related to reclamation and agricultural development of the Delta. While a few resources may date to the mid-1870s, the majority are associated with George Shima's working of the islands between 1910 and 1926. Prehistoric use is represented by burial sites with occupational debris. Native American values and concerns have also been voiced for the project, particularly in regard to presence and disposal of the human remains on the three Holland Tract sites. Evidence gathered during the surface inventory indicate that the Delta Wetlands project was inhabited perhaps as early as 2,500 years ago. Land use intensified in the early 1900s with reclamation projects, and agricultural development and use of the region is on-going today.

REFERENCES CITED

- Bard, James C., and Colin Busby
1978 An Evaluation of the Hotchkiss Archaeological District. Report on file, Northwest Information Center, Sonoma State University.
- Bennett, Michael W. (San Joaquin County Museum Director)
1988 Letter to Mary L. Maniery, PAR & Associates dated September 30, 1988.
- Bennyhoff, James
1977 Ethnography of the Plains Miwok. Center for Archaeological Research at Davis Publication No. 5. University of California, Davis.
- Budd and Widdows
1926 Map of San Joaquin County and Vicinity, California. Budd and Widdows, Civil Engineers, Stockton. On file, California Room, California State Library, Sacramento.
- Byron Times
1912 George Shima. In Byron Times Third Booster Edition.
- Chan, Sucheng
1986 This Bitter-Sweet Soil. University of California Press, Berkeley.
- Compton, H. T.
1894 Map of the County of San Joaquin, 1895. On file, California Room, California State Library, Sacramento.
- Cook, S., and A. B. Elsasser
1956 Burials in the Sand Mounds of the Delta Region of the Sacramento-San Joaquin River System. University of California Archaeological Survey Report No. 35, Paper 45:26-46. Berkeley.
- Desgrandchamps, Cindy, and David Chavez
1984 Preliminary Cultural Resources Evaluation for the Bethel Island Area, Contra Costa County, California. Report on file, Northwest Information Center, Sonoma State University.
- Elsasser, A. B.
1954 Update notes attached to the site record for CA-CCo-146. On file, Northwest Information Center, Sonoma State University.

1988 Personal communication with Mary L. Maniery, Sacramento, California.
- Fredrickson, David A.
1974 Cultural Diversity in early Central California, a view from the North Coast Ranges. Journal of California Anthropology 1(1):41-53.
- Fujita, Kathleen
1980 Bacon Island Ethnic Survey Form. ON file, State Office of Historic Preservation, Ethnic Survey File, Sacramento, CA.

1980a George Shima's Office at Camp #, Bacon Island Ethnic Survey Form. ON file, State Office of Historic Preservation, Ethnic Survey File, Sacramento, CA.

Hackel, Otto

1966 Summary of the Geology of the Great Valley. In Geology of Northern California. Edgar H. Bailey, editor. California Division of Mines and Geology Bulletin 190. Pp. 217-238. San Francisco.

Hampson, R. Paul

1985 Preliminary Cultural Resources Reconnaissance of a Portion of Holland Tract, Contra Costa County, California. Report on file, Northwest Information Center, Sonoma State University.

Hata, Don, and Nadine Hata

1986 George Shima: "The Potato King of California." Journal of the West 25(1):55-63.

Heizer, Robert F.

1949 The Archaeology of Central California I: The Early Horizon. Anthropological Records 12:1. University of California Press, Berkeley.

Historic Record Company

1926 History of Contra Costa County, California. Historic Record Company, Los Angeles.

Jackson, Robert, and David Fredrickson

1979 An Archaeological Investigation within the Proposed Delta Coves Development, Bethel Island, Contra Costa County, California. Report on file, Northwest Information Center, Sonoma State University.

Johnson, Jerald Jay

1982 Summary of the Prehistory of the Lower Sacramento Valley and Adjacent Foothills. On file. North Central Information Center, California State University, Sacramento.

Jones, T., L. Weigel, and D. Fredrickson

1980 An Archaeological Investigation of Selected Areas within the Delta Coves Project, Contra Costa County. Report on file, Northwest Information Center, Sonoma State University.

Jones & Stokes Associates

1988 Administrative Draft EIR/EIS, Delta Wetlands Project. On file, Jones & Stokes Associates, Sacramento.

King, Chester

1978 Protohistoric and Historic Archaeology. In Handbook of North American Indians, Volume 8: California. Smithsonian Institution, Government Printing Office, Washington.

Kroeber A. L.

1925 Handbook of the California Indians. Bureau of American Ethnology, Bulletin 78. Government Printing Office, Washington D.C.

- Levy, Richard
1978 Eastern Miwok. In Handbook of the North American Indians, Volume 8: California. R. F. Heizer, editor. Smithsonian Institution, Washington D.C.
- Maniery, Mary L.
1988 Cultural Resources Assessment of Bedford Properties, Contra Costa and San Joaquin Counties, California. Submitted to Jones & Stokes Associates, Sacramento.
- Maniery, Mary L., and Julia G. Costello
1986 Celedons and Sake Bottles: Asian History Underground. In The Pacific Historian 30(4):36-47.
- McMahon, T. A.
1908 Official Map of Contra Costa County, California. On file, California Room, California State Library, Sacramento.
- McMahon, T. A., and W. Minto
1885 Official Map of Contra Costa County, California. On file, California Room, California State Library, Sacramento.
- Metsker, Charles
1939 Metsker's Map of Contra Costa County, California. Metsker Map Company, Tacoma, Washington.

1940 Metsker's Map of San Joaquin County, California. Metsker Map Company, Tacoma, Washington.
- Milliken, Randall
1982 An Ethnographic Study of the Clayton Area, Contra Costa County, California: Part II of Cultural Resources Evaluation of the Keller Ranch, Clayton, California, by Holman and Associates. Report on file, Northwest Information Center, Sonoma State University.
- Moratto, Michael J.
1984 California Archaeology. Academic Press, New York.
- Paterson, Alan, Rand Herbert, and Stephen Wee
1978 Historical Evaluation of the Delta Waterways. Report on file, State Lands Commission, Sacramento.
- Poland, J. F., and R. E. Evenson
1966 Hydrogeology and Land Subsidence, Great Central Valley, California. In Geology of Northern California. Edgar H. Bailey, editor. California Division of Mines and Geology Bulletin 190. Pp. 239-252. San Francisco.
- Poswall, B.
1978 Report on Human Bone Fragments found on Bethel Island at CA-CCo-337. Report on file, Northwest Information Center, Sonoma State University.
- Punnett Brothers
1901 Chart of the Sacramento and San Joaquin Rivers. Punnett Brothers Company, San Francisco. On file, California Room, California State Library, Sacramento.

1907 Chart of the Sacramento and San Joaquin Rivers, showing all landings to Sacramento and Stockton and roads leading to them. Punnett Brothers Company, San Francisco. On file, California Room, California State Library, Sacramento.

1908 Map of Bay Counties. Punnett Brothers, San Francisco. On file, California Room, California State Library, Sacramento.

1908b Map of Sacramento and San Joaquin Counties, California. Punnett Brothers Company, San Francisco. On file, California Room, California State Library, Sacramento.

Purcell, Mae Fisher

1940 History of Contra Costa County. The Gillick Press, Berkeley.

Quail F.C.

1905 Official Map of San Joaquin County, California. Drawn by D.C. Carlton from Official Records and Surveys of F. C. Quail. On file, California Room, California State Library, Sacramento.

1912 Official Map of San Joaquin County, California. Drawn by A. B. Massey from notes and surveys by F. C. Quail. On file, California Room, California State Library, Sacramento.

Reid, John C.

1883 Map of the County of San Joaquin, California. Compiled from Official Sources and Books of R. E. Wilhoit. On file, California Room, California State Library, Sacramento.

Rose, A. H.

1895 Sacramento Valley, from Iron Canyon to Suisun Bay. California Commissioner of Public Works. Map on file, California Room, California State Library, Sacramento.

Sierra Art and Engineering Company

1910 San Joaquin: The Gateway County of California: Pictorial Map. Printed by Boite and Braden Company, San Francisco. On file, California Room, California State Library, Sacramento.

Thomas Brothers

1928 Industrial and Agricultural Map of Contra Costa. Compiled by Contra Costa County Title Company, Martinez. Published and copyright by Thomas Brothers, Oakland, CA. On file, California Room, California State Library, Sacramento.

Thompson, T., and A. West

1879 History of San Joaquin County, California. Reprinted by Howell-North Books, Berkeley (1971).

Toulouse, Julian H.

1971 Bottle Makers and Their Marks. Thomas Nelson, New York.

Waugh, Georgie

1986 Cultural Resource Survey of Brannan Island and Franks Tract State Recreation Areas. Report on file, California Department of Parks and Recreation, Sacramento.

Widdows, Charles H.

1917 Map of San Joaquin County, California. Budd and Widdows. Civil Engineers, Stockton. On file, California Room, California State Library, Sacramento.

Weigel, L.

1981 An Archaeological Survey of the Proposed Bethel island Recreation "Water-Slide" in Eastern Contra Costa County, California. Report on file, Northwest Information Center, Sonoma State University.

Yoshimura, Toshio

1981 George Shima, Potato King and Lover of Chinese Classics. Tokyo, Japan.

APPENDICES

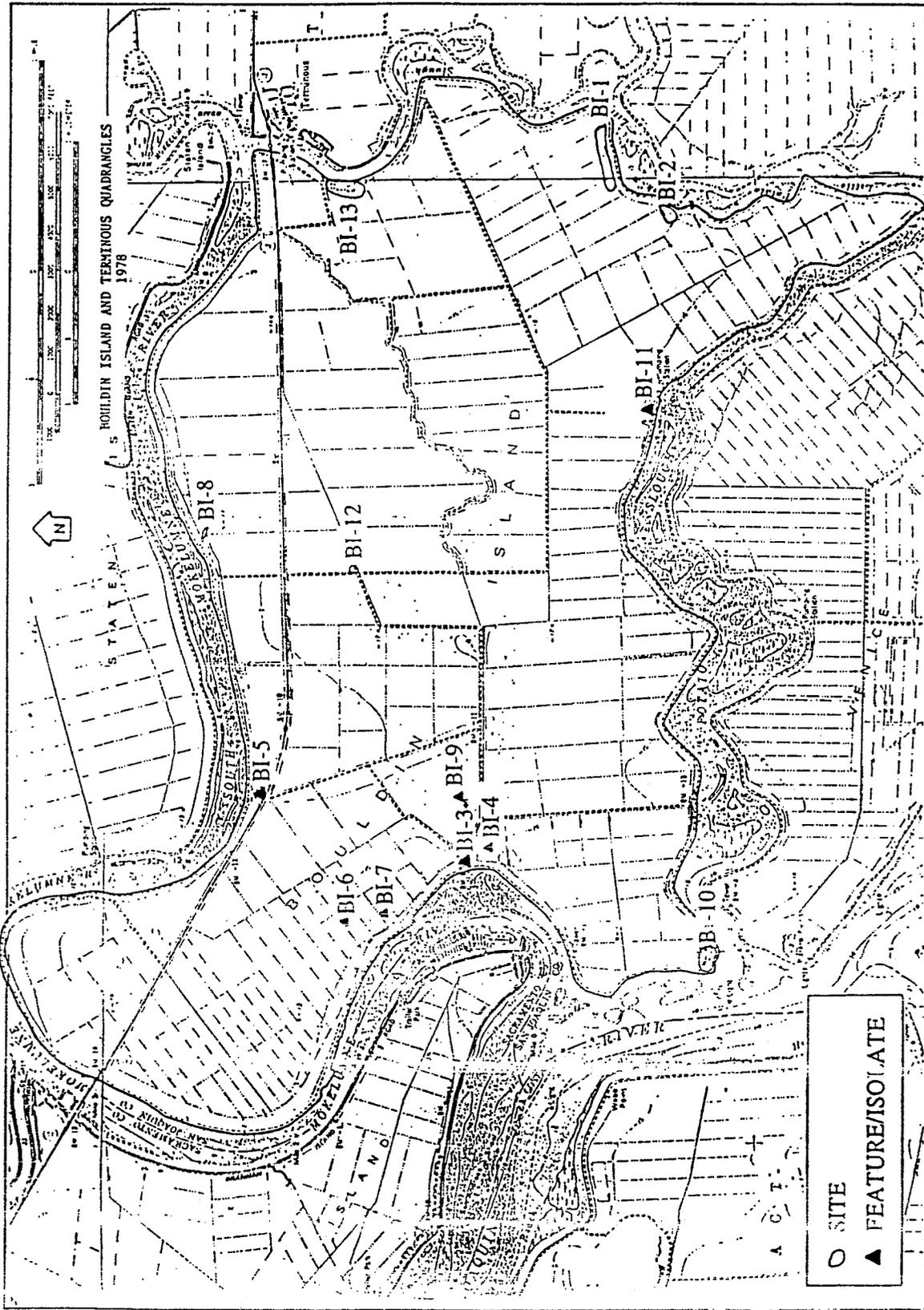
C-075071

C-075071

APPENDIX A
RESOURCE LOCATION MAPS

C - 0 7 5 0 7 2

C-075072



Resource Locations. Bouldin Island

APPENDIX B

SITE AND ISOLATE FEATURES

(Bound separately)

CULTURAL RESOURCES INVENTORY AND EVALUATION OF
DELTA WETLANDS WATER STORAGE PROJECT,
CONTRA COSTA AND SAN JOAQUIN COUNTIES,
CALIFORNIA

Prepared For:

JONES & STOKES ASSOCIATES, INC.

1725 23rd Street
Sacramento, California

FEBRUARY 24, 1989

Final Report

Submitted By:

PAR & ASSOCIATES

P.O. Box 160756
2116 T Street
Sacramento, California