ARCHAEOLOGICAL RESEARCH ISSUES
FOR THE POINT REYES NATIONAL SEASHORE – GOLDEN GATE NATIONAL RECREATION AREA

Prepared for the National Park Service Golden Gate National Recreation Area

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cover: Timing and Extent of Sea-level Rise in the San Francisco Bay Area
ARCHAEOLOGICAL RESEARCH ISSUES
FOR THE POINT REYES NATIONAL SEASHORE –
GOLDEN GATE NATIONAL RECREATION AREA

for
Geoarchaeology
Indigenous Archaeology
Historical Archaeology
Maritime Archaeology

edited by
Suzanne Stewart and Adrian Praetzellis
Anthropological Studies Center
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Rohnert Park, California

prepared for
National Park Service
Golden Gate National Recreation Area
San Francisco, California

November 2003
ARCHAEOLOGICAL RESEARCH ISSUES
FOR THE POINT REYES NATIONAL SEASHORE –
GOLDEN GATE NATIONAL RECREATION AREA

An Overview of Geoarchaeological Research Issues
by Jack Meyer

An Overview of Research Issues for Indigenous Archaeology
by Suzanne B. Stewart

An Overview of Research Issues for Historical Archaeology
by Annita Waghorn

An Overview of Research Issues for Maritime Resources
by Robert G. Douglass

Anthropological Studies Center
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prepared for

Leo Barker, Park Archaeologist
Division of Cultural Resources and Museum Management
Golden Gate National Recreation Area
National Park Service
San Francisco, California

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Figure 1
Study Area and Vicinity

Archeological Research Issues, Point Reyes National Seashore – Golden Gate National Recreation Area

Key
- Point Reyes National Seashore
- Areas owned or administered by GGNRA

source: NPS 1994
FOREWORD

As a part of the Archaeological Overview and Assessment for the Point Reyes National Seashore and the Golden Gate National Recreation Area, under a cooperative agreement between Sonoma State University and the National Park Service, the Anthropological Studies Center (ASC) has produced several overviews of research issues—or general archaeological research designs—to aid in management of archaeological resources in the PRNS–GGNRA parklands. The geographic scope of the study area is relatively vast, extending over 108 miles of coastline—from northern Marin County in the north into northern San Mateo County in the south (Figure 1). These overviews are necessarily general, as they are intended for use with all known and anticipated archaeological resources in the PRNS and GGNRA, an area of approximately 182,496 acres, of which only 6,000 acres have been intensively surveyed. The presentation of research issues in these overviews will assist managers and archaeologists in developing specific research designs for individual properties or specific land units as the need arises. While these overviews are presented here as a single, edited volume, each is designed to be printed out separately as a standalone document if desired. Each overview is listed below, along with a general statement of the topic and the name and credentials of the author.

The first, An Overview of Research Issues for Geoarchaeology in the PRNS-GGNRA, is by ASC Staff Geoarchaeologist Jack Meyer (M.A. in Cultural Resources Management [CRM], Registered Professional Archaeologist [RPA]). It takes a geoarchaeological landscape approach that incorporates human ecology, landscape evolution, and soil formation. With a focus on landforms available to human beings in the past, including buried features, it offers a new perspective on the current archaeological database. Geoarchaeological research issues that can be addressed by parkland resources are provided, along with their data requirements.

An Overview of Research Issues for Indigenous Archaeology in the PRNS–GGNRA is by Suzanne B. Stewart, a Staff Archaeologist at the ASC (M.A. in CRM, RPA). The overview discusses the evolution of research designs for prehistoric archaeology in California, and reviews local research designs and their uses. It then describes and evaluates past indigenous (prehistoric and historic Native American) archaeological research on various topics—such as chronology, settlement, social organization, and culture change—offering a discussion of research issues and data requirements for each topic. The last section brings together the research issues and data requirements for all topics to aid in developing specific research designs. (The study for indigenous archaeology had a more ambitious scope of work than the other overviews, which were conducted under modifications to the original project statement—hence its greater size.)

An Overview of Research Issues for Historical Archaeology in the PRNS–GGNRA is by ASC Staff Archaeologist Annita Waghorn (M.A. in CRM, RPA). It describes the legal context for archaeological research and enumerates the property types that are known or anticipated in the study area. Research issues and data requirements are provided for selected research themes that pertain to Spanish-colonial/Mexican-period and American-period urban and rural archaeological resources. A review of property types and research efforts related to the dairy industry (a dominant theme in the late-19th and early- to mid-
20th century on the Point Reyes peninsula) is provided in an appendix prepared by Christina MacDonald, CRM graduate student and archaeological specialist at the ASC.

*An Overview of Research Issues for Maritime Resources in the PRNS–GGNRA* is by Robert G. Douglass (M.A. in CRM, RPA). This overview looks at the history of the study area as it relates to human interaction with the sea, and reviews the major archaeological studies that have been conducted over the years to increase our knowledge and understanding of these local maritime activities. In order to establish a context for research, it examines current general directions in maritime archaeology and presents some relevant examples of recent activities within the discipline. The overview also suggests an organizational framework for parkland maritime resources, consisting of a range of physical property types and historical contexts that can be combined to describe most maritime properties likely to be encountered in the GGNRA and PRNS. Finally, it proposes some research questions and areas for potential study, and makes specific recommendations for future treatment of the maritime properties of the parklands.

Maria Ribeiro, ASC specialist, provided editorial assistance and graphics and production expertise in organizing and producing this volume. Her skill and diligence are greatly appreciated.

Leo Barker, Park Archaeologist, Division of Cultural Resources and Museum Management, Golden Gate National Recreation Area, provided direction from the National Park Service.

Suzanne B. Stewart  
ASC Staff Archaeologist

Adrian Praetzellis  
ASC Director
PART III

AN OVERVIEW OF RESEARCH ISSUES FOR HISTORICAL ARCHAEOLOGY FOR THE PRNS - GG NRA

by

Annita Waghorn, M.A.
AN OVERVIEW OF RESEARCH ISSUES FOR HISTORICAL ARCHAEOLOGY

Annita Waghorn

INTRODUCTION

The Point Reyes National Seashore (PRNS) and the Golden Gate National Recreation Area (GGNRA), collectively referred to as the PRNS–GGNRA, consist of discontinuous federal and state-owned parcels of land in San Francisco County, San Mateo County, and western Marin County. The majority of this land is managed by the National Park Service (NPS), although substantial areas such as Mount Tamalpais and Angel Island state parks, and the San Francisco watershed lands in San Mateo County are managed by the California Department of Parks and Recreation or city and county agencies. Due to its size, the PRNS–GGNRA encompasses a large number and variety of archaeological sites: “a remarkable constellation of historic resources, among the most diverse in the entire national [park] system” (Rothman 2002:165). Many of these sites are associated with historical forces that have shaped the development of the San Francisco Bay Area since Europeans first began to explore the California coastline and make contact with local Indian groups in the 16th century.

The diversity in the type and historical associations of historic archaeological resources to be encountered within the PRNS–GGNRA poses particular challenges to resource managers. This is complicated by the fact that the original designations of both the PRNS and the GGNRA were for values other than cultural heritage: “forts and other historic features were afterthoughts, a series of structures that had intrinsic values but were included because of their location, secondary to the real political purpose, open space and recreation” (Rothman 2002:165). Nonetheless, federal legislation and NPS management policies (see below for further detail) require that all cultural resources under NPS care are managed in accordance with legislative requirements. This document is intended to be part of the framework by which NPS supports the management of cultural resources on land under its jurisdiction.

As outlined in NPS’s primary policy for the management of cultural resources, Director’s Order 28 (DO-28): Cultural Resource Management Guideline, research is an essential stage in the management of cultural resources. It is the responsibility of resource managers not only to carry out and encourage appropriate research projects into a park’s cultural resources, but also to provide a management framework within which appropriate research objectives and issues can be identified. DO-28 notes that a property’s significance, and therefore appropriate treatment options, can only be understood given an understanding of the site’s historical context. Part of this context for archaeological sites is an understanding of how a site can contribute to research issues within the broader field of historic archaeological inquiry. As a contributor to the management framework for historic archaeological sites within the PRNS–GGNRA, this study provides an overview of the types of historic archaeological resources commonly found within the study area, and discusses various issues and research domains towards which these resources may contribute.
This overview concentrates primarily on issues that are relevant to historic archaeological resources under NPS jurisdiction, including sites within the Presidio of San Francisco, a National Historic Landmark. It is recognized, however, that such resources are often part of larger historical complexes and landscapes. Discussions of the research domains, although directed towards the potential excavation of archaeological features, also address research issues that may be relevant to the broader cultural landscape or built historic features surrounding or associated with the archaeological site. Given the diversity of historic archaeological resources within the PRNS–GGNRA, this overview cannot provide detailed research contexts for each anticipated property type or historical theme. Instead, it is intended to provide an introduction to, and overview of some of the avenues available for using archaeological resources in the overview area to investigate research issues that are currently relevant within the discipline of historical archaeology. Archaeological research issues reflect the theoretical and methodological developments of archaeology as a discipline and, it can be argued, the cultural and economic climate in which archaeologists themselves live and work. The research goals and methods favored by historical archaeologists will continue to evolve over time. A research design for the excavation of an archaeological site should consider not only its specific historical context, but also relevant current theoretical and methodological developments within the discipline of archaeology before developing an appropriate research direction. As such, this overview cannot substitute for the development of a detailed research design for individual sites prior to excavation.

ANTICIPATED USES OF THIS OVERVIEW

This overview contributes to the framework of NPS policy and resource documents that assist park staff and researchers to identify and develop appropriate management objectives and treatment options for historic archaeological resources within the PRNS–GGNRA. It is intended to assist cultural resource management specialists within NPS, land managers requiring an introduction to historic archaeological research issues, and educational institutions or individuals seeking to identify research opportunities offered by the historic archaeological resources within the PRNS–GGNRA. In greater detail, this overview can:

- assist NPS land managers and specialist cultural resource management staff in the preparation of management plans for land units or individual archaeological sites;
- assist NPS land managers and specialist cultural resource management staff in identifying and appropriately managing research and public interpretative values of historic archaeological resources;
- assist NPS land managers and specialist cultural resources staff to develop appropriate strategies for the identification, evaluation, and management of cultural resources that might be affected by ground-disturbing projects;

1 Although this unit is administered by the federal non-profit agency, the Presidio Trust, NPS retains significant responsibilities for the management and interpretation of the area's natural and cultural resources.
• provide a basis from which to develop research priorities for historic archaeological resources that can then be pursued either through agency, grant, or independent funding; and
• encourage the development of long-term research projects on the PRNS–GGNRA's historic archaeological resources by universities and colleges.

STUDY METHODS

Study Objectives
Research for this overview has concentrated on developing several products:
• a table of historic property types that are known or anticipated to be represented by archaeological resources within the PRNS–GGNRA (Table III.2);
• a set of historic thematic categories that denote several of the broad trends in the historical development of what is now the PRNS–GGNRA;
• a discussion of investigative approaches, based on comparative research, that are currently being applied by historical archaeologists to these historic thematic categories and associated property types.

Research Resources
Research for this overview has been carried out using the following resources:
• documents, both published and unpublished, that relate to the management and investigation of historic archaeological resources within the PRNS–GGNRA;
• several contextual histories useful in identifying research issues for historic archaeological sites that have previously been prepared for the PRNS–GGNRA. These historical overviews include Dewey Livingston’s work on the Point Reyes and Olema Valley dairies (Livingston 1994, 1995), Anna Toogood’s study of the overview area’s non-military history (Toogood 1980), Langelier’s work on the Spanish and Mexican development of the Presidio (1992), Thompson’s studies of the GGNRA’s extensive seacoast fortifications and military reservations (Thompson 1979, 1997), and a historic resource study for Sweeney Ridge and the San Francisco watershed lands in San Mateo County (Babal 1990). In addition, NPS regional archaeologist Roger Kelly, in the mid-1970s, prepared an overview of the prehistoric and historic archaeological resources within the GGNRA (Kelly 1976). NPS has also prepared several reports presenting either detailed histories of the development of specific historic properties, such as Bearss’s (1973) work on Fort Point, the Seacoast Fortifications Preservation Manual (Freeman et al. 1999), and the cultural landscape study for Fort Baker (Golden Gate National Parks Association 1999), or archaeological inventories within specific park units, such as the Anthropological Studies Center’s (ASC) inventory of archaeological features at Fort Baker (Stewart, Meyer, and Newland 2003) (Figure III.1).
articles and unpublished reports that detail the research objectives, methods, and findings of archaeological studies conducted on sites similar in historical context, time period of occupation, and/or property types as those found within the PRNS–GGNRA. Sources consulted include the journals *Historical Archaeology, Australasian Historical Archaeology*, listings on the National Register of Historic Places (NRHP), unpublished doctoral dissertations and master’s theses, publications relating to the management of cultural resources on land administered by NPS, and various published and unpublished edited volumes and reports relating to historic archaeological investigations.

**STUDY-AREA BACKGROUND**

**GOLDEN GATE NATIONAL RECREATION AREA**

The GGNRA was designated 27 October 1972. As of September 2002, it contained 111,428 acres of land and is the largest urban park in the world. Of the total landmass, 74,816 acres are owned and administered by federal agencies, primarily the National Park Service (NPS), while the remaining 36,612 acres are non-federal land. The non-federally administered land units include several in the California State Parks system (such as Mount Tamalpais, Angel Island, Samuel P. Taylor, and Tomales Bay state parks) and the lands administered by the Marin Municipal Water District and the San Francisco Water District. Well-known localities federally administered within the PRNS–GGNRA include Alcatraz Island, Crissy Field, Olema Valley, Gerbode Valley, Marin Headlands, Milagra Ridge, Sweeney Ridge, various beaches (including China, Ocean, Muir, and Stinson beaches), Muir Woods National Monument, the Presidio of San Francisco, Sutro Heights, the Cliff House, and a variety of ex-military reservations around San Francisco Bay, including Forts Baker, Barry, Cronkhite, Mason, Funston, and Miley.

One of the more intense concentrations of cultural resources within the GGNRA is the Presidio of San Francisco (Presidio). Originally developed by the Spanish Colonial (later Mexican) military authorities, from 1847 the Presidio was occupied by the U.S. military. In 1994, however, it was transferred to NPS for inclusion in the GGNRA. Also in 1994 Congress created the federal non-profit agency the Presidio Trust to administer the Presidio, although NPS has retained a substantial role in the area’s resource management and interpretation (NPS 2003b).

The Presidio was originally designated a National Historic Landmark (NHL) District in 1962. Following the introduction of the National Historic Preservation Act in 1966, the site was found to be significant under National Register of Historic Places’ Criteria A, C, and D, for its contribution to the colonial and military development of the western United States. The period of significance for the Presidio as an NHL was determined to be from 1776 to 1945, although post-World War II events that took place at the Presidio, such as the signing of the ANZUS treaty, were found to have extended its significance to less than 50 years in the past. The National Landmark status for the area was updated in 1992 (Alley et al. 1993). This update for the first time allowed historic archaeological resources to be identified as contributing elements within the Presidio NHL (Barker 1997:39). Under
the NHL nomination, the Presidio is defined as a single historic archaeological site with contributing and noncontributing features. The period of significance for historic archaeological sites within the Presidio NHL was found to be primarily from 1776 to 1890, although it was also recognized that under certain circumstances the period of significance could extend to 1917. Archaeological material post-dating 1917 was felt to have progressively less potential for significance due to the increased historical documentation available to supply information about the Presidio's function and the lifeways of its inhabitants. The 1992 update also developed a predictive model to assist in the identification of archaeological features within the Presidio NHL (NPS 2000). This model was based on the Presidio’s extensive historical documentation, including maps of the locations of historic features. It was felt to be a particularly useful management and research tool since the intensive use of the Presidio by successive periods of occupation had resulted in the burial or surface removal of the majority of features relating to earlier occupants. The predictive model was adopted both by the U.S. military as it worked to transfer the Presidio to NPS, and was also incorporated into the General Management Plan Amendment for the Presidio when it was absorbed into the GGNRA (Barker 1997:39). This model has been used to assist in planning decisions for development activities within the Presidio.
THE POINT REYES NATIONAL SEASHORE

The designation of the Point Reyes National Seashore on 13 September 1962 was intended to help preserve a part of Marin County’s coastline that was threatened by proposed urban development. The PRNS encompasses approximately 71,068 acres of the Point Reyes peninsula, Olema Valley, and adjacent waters. It contains 297 designated historic structures and over 120 known archaeological sites (NPS 2001b). Based on current standards of archaeological inventory survey, however, only a relatively small sample of the park (approximately 6,000 acres) has been adequately inspected. The PRNS–GGNRA is currently completing a three-year Archeological Overview and Assessment that has concentrated on the re-recording and mapping of known Native American and historic-period cultural resources within the park. Major work to date on the area’s historic-period resources include Livingston’s (1994, 1995) research on the dairying industry of the Point Reyes peninsula and the Olema Valley, and Lynn Compas’s (1998) master’s thesis on the settlement patterns of historic-period Native American occupation of Point Reyes. In addition to Point Reyes itself, units of the PRNS include Tomales Bay, Bear Valley, Pierce Point, Drakes Bay and Estero, Limantour, Inverness Ridge, and Mount Vision. Potential historic archaeological resources within the PRNS could relate to historic use of the area by dairy ranching, and rail and maritime transportation. Within the PRNS 13 historic beef and dairy ranches continue to operate under special use agreements with NPS. The PRNS also contains the Point Reyes Lifeboat Station, a National Historic Landmark. The adjacent Olema Valley contains the Olema Valley Lime Kilns, a California State Historic Landmark (#222) and National Register property that operated between 1850 and 1855; the site has been archaeologically studied (Treganza 1951) (Figure III.2). Archaeological sites within the PRNS containing evidence of the 16th-century contact between Europeans and Native Americans have been investigated by researchers who formed the Drake Navigators Guild (Von der Porten 1963). The PRNS contains a large number of cultural resources relating to the area’s occupation by Native Americans and its rich history of maritime transportation during the historic period; indigenous and maritime resources are the subjects of Parts II and IV of this document.

HISTORIC ARCHAEOLOGICAL EXCAVATIONS WITHIN THE PRNS–GGNRA

Table III.1 provides summary information of major historic archaeological excavations undertaken within the PRNS–GGNRA. Few major historic archaeological surface and subsurface inventory, evaluation, and data-recovery projects were undertaken within the PRNS–GGNRA prior to the mid-1990s. During the 1990s, excavations of historic archaeological resources within the PRNS–GGNRA were primarily initiated as either evaluation or data-recovery efforts required for development projects, largely within the Presidio (e.g., Holman and Associates 1999; Parsons Brinckerhoff 2001; and Voss and Benté 1995, 1996a, 1996b).

Undertakings at the Presidio—initially by the Corps of Engineers, U.S. Army, National Park Service, and now by the Presidio Trust—have increasingly been directed not only towards compliance with federal legislative and regulatory requirements, but also towards meeting contextually based, long-range research goals. NPS sees this as the best approach for managing historic properties located in an area such as the Presidio that is the subject
of numerous small- and large-scale nonarchaeological undertakings. This represents a fundamental shift from reactive management of resources, towards the proactive identification of archaeological goals that can be gradually achieved through compliance actions for nonarchaeological federal undertakings and cooperative academic and public efforts. The approach, initially developed at the Presidio from informal collaborations between the U.S. Army, Corps of Engineers, contractors like Woodward-Clyde, the U.C. Berkeley Archaeological Research Facility, and NPS, has since been extended with the involvement of the Presidio Trust, Stanford University, the ASC at Sonoma State University, and other partners (Leo Barker 2003, pers. comm.).

**Development-motivated Historic Archaeological Excavation Projects**

The majority of recent excavation projects within the PRNS–GGNRA have taken place within the Presidio of San Francisco, prompted by the redevelopment of the area undertaken by the Presidio Trust and the need to respond to the potential impacts caused by recreational or infrastructure developments on the area’s cultural resources. Several of these excavations have been testing undertaken prior to small-scale facility installation projects (Voss and Benté 1995, 1996a, 1996b). More comprehensive archaeological testing and mitigation have been conducted as part of the planning for larger development projects such as the restoration of Crissy Field or the redesign of Doyle Drive (Ambro and Clark 2003; Holman and Associates 1999; Parsons Brinckerhoff 2001). These projects have contributed to the understanding of the historical spatial arrangement and development of the Presidio:
<table>
<thead>
<tr>
<th>Project Name and/or Locality</th>
<th>Year</th>
<th>Project Investigators</th>
<th>Project Description</th>
<th>Report Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Various locations, Point Reyes</td>
<td>1960s</td>
<td>Edward Von der Porten and the Drake Navigators Guild</td>
<td>Privately sponsored excavations to identify encampment or shipwreck sites relating to Sir Francis Drake and Sebastián Rodríguez Cermeño.</td>
<td>Von der Porten, Edward. 1963 Drakes Bay Shell Mound Archaeology, 1951-1962.</td>
</tr>
<tr>
<td>Presidio, San Francisco</td>
<td>1995</td>
<td>Leo Barker and Martin Mayer, NPS</td>
<td>Test excavations on southern side of the Officer’s Quarters identified structural remains associated with the Spanish Colonial El Presidio occupation.</td>
<td></td>
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</tbody>
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Table III.1. Major Historic Archaeological Excavations within the PRNS-GGNRA (continued)

<table>
<thead>
<tr>
<th>Project Name and/or Locality</th>
<th>Year</th>
<th>Project Investigators</th>
<th>Project Description</th>
<th>Report Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Funston Avenue Archaeological Research Project, Presidio, San Francisco</td>
<td>1999</td>
<td>Barbara Voss, Amy Ramsay, and Anna Naruta of Archaeological Research Facility, U.C. Berkeley in a cooperative agreement with the Presidio Trust and NPS.</td>
<td>Subsurface investigations undertaken to assist in the development of design of proposed lawn irrigation system in the area of the Funston Avenue Officer’s Quarters. Investigations found extensive remains with high levels of integrity that relate to the Spanish Colonial, Mexican, and U.S. military occupations of the Presidio area.</td>
<td>B. Voss, A. Ramsay, and A. Naruta 2000 <em>Final Report of the Funston Avenue Archaeological Research Project, Presidio of San Francisco, 1999.</em></td>
</tr>
</tbody>
</table>
Table III.1. Major Historic Archaeological Excavations within the PRNS-GGNRA (continued)

<table>
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<th>Project Investigators</th>
<th>Project Description</th>
<th>Report Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doyle Drive, Presidio, San Francisco</td>
<td>2001</td>
<td>Jones and Stokes</td>
<td>Test trenching prior to redevelopment work of Doyle Drive, Presidio. No subsurface historic features identified.</td>
<td>Parsons Brinckerhoff 2001  <em>Archaeological Survey Report/Historic Survey Report for the Doyle Drive Corridor Project.</em></td>
</tr>
<tr>
<td>Tennessee Hollow Watershed Archaeology Project, Presidio of San Francisco, California.</td>
<td>2003-2008</td>
<td>Barbara Voss, Department of Cultural and Social Anthropology, Stanford University, in partnership with the Presidio Trust and NPS.</td>
<td>Subsurface investigations of the 271-acre Tennessee Hollow Watershed in the eastern portion of the Presidio, GGNRA. Project to investigate how the area was used by Spanish and Mexican-period inhabitants from ca. 1776 to 1847 prior to major modifications by the U.S. military from 1847.</td>
<td>Project in progress</td>
</tr>
</tbody>
</table>
- **Replacement of Doyle Drive in the Presidio in 2001 by the San Francisco County Transportation Authority.** This was a research and testing program undertaken by Jones and Stokes and Parsons Brinckerhoff to determine whether any archaeological properties that might contribute to the Presidio’s NHL status or that were eligible for listing on the NRHP were likely to be impacted by proposed works on the Doyle Drive road corridor (Parsons Brinckerhoff 2001). The historic archaeological context of the project’s research design focused on western U.S. military facilities that operated between 1860 and the early 20th century, since military deposits from this period were the primary resource types anticipated to be found within the project’s Area of Potential Effects (Jones and Stokes and Basin Research Associates, Inc., 2001:3, 21). The investigations resulted in the relocation and testing of the prehistoric shell mound, CA-SFr-6 which had first been identified in 1912.

- **Crissy Field Restoration Project.** In the mid-1990s, NPS began a project to restore the tidal marshlands in Crissy Field that had been largely filled in during the historic period. Excavation for this project had the potential to impact archaeological resources of the area, particularly the Presidio’s Quartermaster’s Dump, which was thought to have been located within the restoration area (Holman and Associates 1999). In 1998 an archaeological research design was prepared, and test excavations were undertaken to determine the nature and significance of Crissy Field’s archaeological resources. The test phase revealed the presence of a large deposit of material relating to the Presidio’s organized system of dumping from the 1880s to 1912. In 1912 the area had been covered with dredged bay sands in preparation for construction of buildings for the Panama Pan Pacific Exposition. Based on the findings of the test excavations, several areas within Crissy Field were evaluated as potentially contributing to the Presidio’s NHL listing, and data-recovery excavations were undertaken (Ambro and Clark 2003). Investigations of an identified prehistoric archaeological site (CA-SFR-129) were also undertaken at Crissy Field by Holman and Associates (see Indigenous Archaeology, Part II).

**Collaborative Research Ventures for Historic Archaeological Sites**

NPS and the Presidio Trust have also entered into several collaborative ventures with educational institutions around the Bay Area that have resulted in extensive multi-year inventory programs and subsurface investigations of archaeological resources. These projects include the following:

- **Funston Avenue Archeological Research Project.** This project, a cooperative venture between the Presidio Trust, NPS, and the University of California at Berkeley Archaeological Research Facility, was intended to provide information useful in the design of lawn-irrigation systems for the area of the Funston Avenue Officer’s Quarters within the Presidio of San Francisco (Voss et al. 1999, 2000). The project made use of both stratigraphic trenching, geophysical survey, and controlled hand-excavation. Intact deposits were recovered dating from the Spanish Colonial period of the Presidio’s history, U.S. military Officer’s Quarters from 1861-1878, and the early 1900s Officer’s Quarters (Voss et al. 2000:2-4 to 2-6, 10-1 to 10-4).
• The Tennessee Hollow Watershed Archaeology Project. This project is being undertaken as a collaborative venture by Stanford University, NPS, and the Presidio Trust to investigate the Spanish Colonial and Mexican-period use of this area of the Presidio. The five-year project will concentrate in part on subsurface investigations of the El Polin Springs area of Tennessee Hollow in an effort to investigate research issues relating to the occupation of the area during the early and mid-1800s by the Briones sisters and their families (Stanford University n.d.a, n.d.b.). The project had its origins in earlier efforts to identify outlier settlements to the El Presidio site conducted by Barbara Voss through the U.C. Berkeley Archaeological Research Facility between 1996-1997. This work was in cooperation with and supported by the GGNRA archaeological program.

• Inventory Surveys of PRNS. A cooperative agreement between NPS and the ASC, Sonoma State University in the late 1990s provided for the survey, inventorying, and re-recording of numerous historic and prehistoric archaeological sites with the PRNS. This multi-year project was undertaken in part to provide training and internship opportunities in archaeological survey and site recording to students in the Cultural Resources Management program at Sonoma State University. The cooperative agreement with SSU also included the beginnings of an Endangered Sites Program designed to revisit and evaluate the status of sites where human remains had previously been excavated or discovered. This program was designed to assist PRNS in meeting national goals for site stabilization and protection in accordance with the National Historic Preservation Act, the Archeological Resource Protection Act, and the Native American Graves Protection and Repatriation Act (see below).

• Excavation of the Presidio 1780 Chapel. Cabrillo College Archaeological Technology Program conducted field schools between 1996-1998 at the site of the 1780 chapel of the Presidio of San Francisco, funded by grants from the Golden Gate National Parks Association (GGNPA). The field schools were directed by Robert Edwards, Charr Simpson-Smith, and Leo Barker (Barker 1997)

• Black Point Battery Excavation. Black Point Battery, a Civil War fortification at Fort Mason was excavated in 1979-1981 by Martin Mayer and James Delgado with the assistance of donations from the GGNPA. This was perhaps the first instance of a collaborative research venture within the PRNS–GGNRA.
LEGAL CONTEXT FOR HISTORIC ARCHAEOLOGICAL RESEARCH WITHIN PRNS–GGNRA

The management framework within which historic archaeological sites on federal land within the PRNS–GGNRA are managed is structured by federal legislation, regulations, standards, and NPS policy. The following is a brief overview of how the major pieces of legislation and NPS policy affect the conduct of research into historic archaeological resources on NPS-owned or administered land.

FEDERAL LEGISLATION

An array of federal legislation, regulations, and guidelines affects the management of archaeological sites that are on federal land. Several pieces of federal legislation however, are particularly significant for research relating to historic archaeological properties within the PRNS–GGNRA. These include the National Environmental Policy Act (NEPA), the Archeological Resources Protection Act (ARPA), and perhaps most significantly, the National Historic Preservation Act (NHPA).

NEPA is one of the most influential federal acts governing the management of the “natural and physical environment and the relationship of people with that environment” (40 CFR 1508.14). The act establishes preservation of important historical and cultural resources as part of national policy, and requires federal agencies to use systematic approaches to incorporate data about cultural resources into planning and decision-making. Agencies are also required to consider the impact of all their decisions on cultural and natural resources (King 1998:35-37).

Unlike the umbrella for environmental consideration provided by NEPA, ARPA focuses directly on the physical protection of archaeological resources. Among other things, the act prohibits the unauthorized excavation, removal or damage of archaeological resources on federal and Indian lands. ARPA defines archaeological resources as archaeological sites, structural remains, artifacts, etc., that are at least 100 years old (King 1998:273). Although it is more proactive with regard to permit application criteria, ARPA is primarily a reactive document, providing a universal blanket of protection for archaeological sites through a penalty framework.

In contrast, NHPA encourages agencies to be more proactive in identifying the significance of archaeological resources, and using that significance as a basis for developing appropriate management options. Section 106, perhaps the best known element of NHPA, requires federal agencies to take into account the effects of their decisions (including permitting actions) on historic properties and to allow the Advisory Council of Historic Preservation to comment (but not to overrule) their actions (King 1998:59, 270). As “historic properties” are defined as districts, sites, buildings, structures or objects that are listed on or eligible for listing on the National Register of Historic Places (NRHP), agencies effectively have a responsibility to evaluate whether cultural resources that may

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2 Federal laws, executive orders, and regulations relevant to the management of cultural resources are outlined in King 1998:269; see also NPS 1998: Appendix B.
be affected by agency actions are eligible for the Register. This is further strengthened by Section 110 of NHPA which requires federal landholding agencies to locate, inventory, and nominate to the NRHP all qualified properties.

The Code of Federal Regulations (36 CFR 60) defines eligibility to the NRHP as follows:

The quality of significance in American history, architecture, archeology, engineering, and culture is present in districts, sites, buildings, structures, and objects 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 distinctive characteristics of a type, period, or 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.

Archaeological sites are generally evaluated for eligibility to the NRHP under Criterion D, although they may fall under Criterion A or B. Under Criterion D, eligible archaeological sites must not only contain data, but these data must be judged to be important. National Register Bulletin No.15 notes that “Information is considered ‘important’ when it is shown to have a significant bearing on a research design that addresses such areas as: 1) current data gaps or alternative theories that challenge existing ones or 2) priority areas identified under a State or Federal agency management plan” (NPS 1991a:21). A research design thus provides a necessary framework within which to assess the significance of an archaeological resource. To aid in this assessment, a research design must contain a historic context that discusses specific areas of historical research or archaeological theory towards which the resource to be evaluated may contribute important information (NPS 1991a:22). These areas can include overviews and discussions relating to the resource within local, state, and national historical developments; within the context of similar known and already evaluated archaeological resources; and in light of relevant contemporary archaeological theory and research issues. The historic context outlines the basis for developing a series of tests, often framed as questions that help structure the process of considering whether a resource can contribute important information to these areas of research.

For a site to be listed on the NRHP it must satisfy one of the criteria outlined above but must also possess integrity. This term refers to the degree to which a property has retained physical attributes that are relevant to its area of significance as identified under the National Register criteria. For historic archaeological sites that are evaluated for eligibility under Criterion D, the ability to contribute important information, integrity
relates to the resource’s retention of sufficient data to yield important information relating to research issues identified in the research design’s historic context (NPS 1991a:23).

SECRETARY OF THE INTERIOR’S STANDARDS AND GUIDELINES FOR ARCHEOLOGY AND HISTORIC PRESERVATION

These standards were developed through NPS in 1983 and, although partially revised, have not since been republished in full. The Standards provide non-binding guidelines and standards to assist in identifying, documenting, and devising appropriate treatment options for historic properties (NPS 1983). The Standards provide a logical structure for research and project documentation that can be applied to various levels of planning for cultural resources. Although generally nonbinding, the standards are requirements of agencies under the Secretary of the Interior (such as the NPS), or those that have received funding through this Department (e.g., State Offices of Historic Preservation, Local Certified Governments).

The Secretary of the Interior’s Standards emphasize the role of planning in the appropriate management of cultural resources. The Standards address the importance of a research design in this planning framework, for both identifying an appropriate historic context within which the property can be evaluated for eligibility to the NRHP, and in identifying the most appropriate methods to achieve research objectives. The Standards provide technical guidance and discussions for the process of developing a research design and documenting research work carried out on a historic property, and for the documentation of all archaeological projects (NPS 1983). As the Standards note, archaeological investigations should only be carried out after defining explicit goals and methods in a documentary form such as a research design. This design should include discussion of the research problems to which the property can contribute, a statement of prior research conducted on these research problems and similar property types, a discussion of how the proposed project will contribute to this existing knowledge, and an outline of the investigation methods to be used. Another important standard for research designs or preservation planning in general is that they be commensurate with the level of planning being undertaken; for example, a design of research for an archaeological overview would not be required to identify specific goals and methods for studying or evaluating all the property types identified, but only frame the discussion at the general level of the overview study. Tailoring research designs to specific projects, therefore, can help prevent the gathering of redundant or excessive information and so (in the case of excavation) limit destruction of the archaeological resource (NPS 1983).

DO-28, CULTURAL RESOURCE MANAGEMENT GUIDELINE

NPS is responsible for an enormous range of cultural resources. These include archaeological resources on lands that has primarily been acquired, or will be managed for, other values such as recreation or wilderness. In addition to federal legislation and guidelines, NPS has developed an internal management structure to aid in the management of cultural resources. A crucial component of this structure is DO-28 (formerly NPS-28), the principal NPS policy document relating to the management of cultural resources on
park service land. DO-28 establishes the requirement that management of cultural resources within NPS should be consistent with legislative requirements and the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation (NPS 1998:Introduction, Chapter 2). It emphasizes adherence to Section 110 of the NHPA, whereby each park unit must inventory its cultural resources, and nominate eligible resources to the NRHP and relevant internal NPS inventories (NPS 1998:Chapter 2). DO-28 outlines a series of standards to which park management should aspire in their management of resources, and interprets the language of the Secretary of the Interior’s Standards to clarify its application to NPS management (NPS 1998:Introduction).

DO-28 recognizes five types of cultural resources: structures, cultural landscapes, museum objects, ethnographic resources, and archaeological resources (NPS 1998:Chapter 1). It defines archaeological resources as “any material remains or physical evidence of past human life or activities which are of archaeological interest, including the record of the effects of human activities on the environment. They are capable of revealing scientific or humanistic information through archeological research” (NPS 1998:Appendix A). For archaeological resources, this is primarily but not exclusively interpreted as the extent to which a resource can still yield information that is important to research issues (NPS 1998:Chapter 1). Many cultural resources, however, encompass more than one of these categories: a historic farmstead can contain both archaeological resources, historic standing structures and fences, movable historic-era machinery, and—as a whole—constitute a historic landscape.

DO-28 outlines three stages in cultural resource management:

- research to enable the identification, evaluation, documentation, and interpretation of the resource;
- planning in order to integrate cultural resources protection into park management, avoid or minimize negative effects on cultural resources, provide interpretive information, and identify most appropriate treatment options for cultural resources; and
- stewardship to ensure that wherever possible, preservation remains the primary and preferred treatment option for long-term management of cultural resources (NPS 1998:Chapter 1).

DO-28 identifies research as an important precursor to the development of planning objectives for cultural resources. Research identifies the resource, and defines what it is about the resource and its historical or contemporary associations that is significant. Under DO-28, however, cultural resource research is not an end to itself, but must contribute in its focus and scope to important management concerns (NPS 1998:Chapter 2). This is especially important given the nonrenewable nature of archaeological resources and the inevitable damage to a site’s physical fabric that results from investigative techniques such as archaeological excavation. Appropriate management concerns for archaeological resources must be developed in dialogue between NPS land managers and cultural resource specialist staff. In order to promote the use of archaeological sites for scientific research, however, DO-28 encourages research into cultural resources, such as archaeological sites, through cooperative relationships with educational institutions and
qualified researchers whose “research programs or interests will complement park management objectives” (NPS 1998:Chapter 6).

DO-28 recommends research designs and historic contexts as important tools in the process of identifying resource significance and ensuring that appropriate research is conducted on cultural resources. Research designs outline the goals, methods, and explicit assumptions of the researchers, and should clearly state research context, issues, methods to be used, and reporting standards (NPS 1998:Chapter 2). Historic contexts are important stages of the planning and research process for individual resources, and are required to be developed for each park unit. These contexts outline existing knowledge about the historical development of the park and so can assist in evaluations of cultural resources and in park planning (NPS 1998:Chapter 2). In addition, parks are required to complete a number of specified baseline studies, including Archeological Identification/Evaluation Studies, Historic Resource Studies, and Archeological Overviews and Assessments (NPS 1998:Chapter 2).

NATIONAL REGISTER BULLETINS

NPS has produced several National Register of Historic Places bulletins that provide processes and contexts for historic archaeological evaluations relevant to PRNS–GGNRA lands. These include #30 Guidelines for Evaluating and Documenting Rural Historic Landscapes (McClelland et al. 1999); #36 Guidelines for Evaluating and Registering Archaeological Properties (Little et al. 2000); and #42 Guidelines for Identifying, Evaluating and Registering Historic Mining Properties (Noble and Spude 1997).

REVISED NPS THEMATIC FRAMEWORK

As part of its management framework for cultural resources, NPS developed the Thematic Framework for history and prehistory. By identifying significant stages or developments in American history, this framework (NPS 2003a) is intended to:

• provide an intellectual framework that broadens the scope of historical inquiry within NPS. It outlines a structure within which research and interpretation for individual park units and cultural resources can be understood against the broader concepts of American history;

• help assess whether the full scope of American history is represented by the cultural resources managed by NPS and other protected lands. The thematic framework provides a means of assessing whether new or proposed land acquisitions will help NPS meet its goal of protecting cultural resources that represent the full sweep of American history;

• help assess whether NPS interpretive programs represent the full range of American history; and

• assist in evaluating the significance of resources for listing on the NRHP, designation as National Historic Landmarks and/ or for potential acquisition by the NPS.
The Thematic Framework, first devised in 1936, was substantially revised in 1970, 1987, and 1996. The earlier frameworks, with their structure of chronological themes, expressed a linear, triumphal approach to understanding the American historical experience. They were primarily used for internal NPS evaluations for National Historic Landmarks and land acquisitions, but were not widely integrated into park interpretation programs. In contrast, the 1996 revised Thematic Framework (available online in 2003), that was prepared partly in response to a “Congressional mandate to ensure that the full diversity of American history and prehistory is expressed in the National Park’s identification and interpretation of historic properties” (NPS 2003a), emphasizes an interdisciplinary, less compartmentalized approach that focuses on the experiences of many Americans rather than the achievements of prominent individuals or groups (NPS 2003a). This reflects a dramatic shift, since the 1960s, in the academic and popular focus of American historical studies. This shift has redirected historical research and writing from a concentration on people, institutions, and events that were prominent on the national scale, to an increasing interest in regional history and the lives of ordinary people. The new outline is intended to help integrate modern historical scholarship that emphasizes interdisciplinary, multivocal understanding of historical events into the management and interpretive program of the NPS. As such, one of the goals of the new framework is to encourage people to “think broadly, not narrowly, that they look beyond traditional categories of historical significance in an effort to recapture the larger meaning and depth of past experience” (NPS 2003a).

The 1996 revised NPS thematic framework defines eight historical themes:

I. Peopling Places;
II. Creating Social Institutions and Movements;
III. Expressing Cultural Values;
IV. Shaping the Political Landscape;
V. Developing the American Economy;
VI. Expanding Science and Technology;
VII. Transforming the Environment; and
VIII. Changing Role of the United States in the World Community.

Each theme also includes subthemes or topics to further define its scope and intended subject matter. A fuller description of the themes and their associated topics is given in the NPS article “History in the National Park Service, Themes and Concepts” (NPS 2003a). The development of the revised themes is significant because they do not include strict divisions of history into time segments but can be related to both historic and prehistoric events. This reflects current research (e.g., Lightfoot 1995; Lightfoot and Martinez 1995) that decries the division that has developed between historical and prehistoric archaeology, and posits the need for greater integration between the subdisciplines in order to answer shared research themes. As noted by NPS, the movement away from a sense of linear historic progression within the framework reaffirms that there is “no assumption of progress or inevitability in interpreting [historical] transformations. Instead, the emphasis
is on the tension between change and continuity, and on understanding why and how particular choices were made” (NPS 2003a).

The 1996 revisions also outline three “historical building blocks”—people, time, and place—the interrelated roles of which must be considered in understanding a historical movement or event and how it related to a cultural resource. These concepts help ensure that research and public interpretation developed for NPS cultural resources emphasize the importance of both local and national contexts in assessing and discussing the impacts of historical events (NPS2003a).

The 1996 revised thematic framework with its emphasis on the context of the place or individual within broader historical trends is in keeping with current theoretical orientations within American historical archaeology. The framework has important implications for the direction of historic archaeological research within the PRNS–GGNRA in that it encourages a greater emphasis on the process of research and its effects on the resource and surrounding communities, rather than specific historical or archaeological research issues. The framework also encourages park management and researchers working on NPS cultural resources to adopt broader approaches to researching the history of a park unit, taking care to interpret individual historical resources within the larger context of social, technological, and political developments of the local and regional areas. Cultural resources that were hitherto associated through research and interpretation with one specific theme can be reappraised to assess how less-prominent aspects of their history can also convey information about important historical and social developments. The revised framework encourages research and interpretation that recognizes that places can be simultaneously relevant to different themes and historical trends, encouraging researchers to take a more complex, multifaceted approach to looking at the information potential of a resource (Feller and Miller 2000:4).

Discussion of historic archaeological research issues in this overview however, is structured not around the 1996 revised framework, but on historic thematic categories that can be more closely related with specific historic periods of occupation within the PRNS–GGNRA (see Research Issues, below). It was felt that since a large portion of archaeological research in the PRNS–GGNRA is prompted by development projects and thus often directly involves only a limited number of sites, these historic thematic categories provide the most appropriate starting point for developing suitable research designs. The revised NPS framework, however, retains the potential to broaden the scope of the research issues that might be generated simply by considering these historic thematic categories. Therefore, the revised NPS framework should be an important consideration in the development of any archaeological research design for cultural resources within the PRNS–GGNRA.
RESEARCH ISSUES AND DATA REQUIREMENTS

SELECTED PROPERTY TYPES AND HISTORIC THEMATIC CATEGORIES WITHIN THE PRNS–GGNRA

Under the National Historic Preservation Act, a property type is a “grouping of properties defined by common physical and associative attributes” (NPS 1991b:IV:3). This is distinct from a “historic property” or “historic resource” that is defined under NHPA (Sec. 301[5]) as “any prehistoric or historic district, site, building, structure or object included in, or eligible for inclusion on the National Register.” Examples of historic archaeological property types are residences, dairy farms, and logging camps. A list of potential property types is often developed for an archaeological research design in order to anticipate what types of archaeological resources might be expected to occur within the study area. The list of anticipated property types, based on previous historical and archaeological research, forms the basis for identifying research issues to which archaeological resources in the project area might contribute significant information. However, archaeological features such as privies or sheet refuse can occur in connection with a variety of property types, including residences, factories, or military outposts. In a similar vein, buildings may have been used both as residences and as workplaces. Thus, it is possible that an archaeological feature or deposit may be interpreted using research issues relevant to different property types.

A wide range of property types are known or can be expected to occur within the PRNS–GGNRA. An overview of these property types is given in Table III.2, which is based on historical and archaeological research previously carried out within the parklands. This table should not be read as a complete list of all archaeological property types present within the PRNS-GGNRA. Large portions of the overview area have never received systematic archaeological survey. In addition, sites may have become buried, and may no longer be visible by survey methods that only inspect the ground surface.

Selected property types within Table III.2 have been expanded into historic thematic categories and are further discussed below. These categories and their associated property types can be used as a basis for identifying research issues applicable to archaeological resources within the project area. The historic thematic categories discussed in this overview, however, are by no means exhaustive regarding the property types and relevant historical themes within the PRNS-GGNRA. Other relevant themes and associated property types include industrialization (as represented by the Dogtown Copper Mine and Olema Valley Lime Kiln), rural township developments, commercial and municipal development of water resources (such as the Spring Valley Water Company), commercial operations (such as the Byrnes Store in San Mateo County), Chinese fishing activities (such as represented by China Camp), and the extensive use of the project area by the U.S. military. Many of these themes and associated property types are sufficiently complex that they would benefit from specialist studies designed to identify relevant research and management issues. The categories that are discussed in this overview are:

- Spanish Colonial/Mexican-period archaeological resources;
- Agricultural archaeological resources;
• Logging and milling archaeological resources;
• Urban residential archaeological resources; and
• Landfill-related archaeological resources.

CONSIDERATIONS IN THE DEVELOPMENT OF RESEARCH ISSUES

The PRNS–GGNRA encompasses a very broad range of historical associations and property types. The historic thematic categories and associated research issues discussed below are also necessarily broad in order to be applicable to a wide range of archaeological resources that may be found with the study area. This diverse range of historic associations and property types, however, are linked by their connection to the overall economic and social development of the Bay Area. An appreciation of a resource’s historical context is essential to devising relevant research issues. Thus, identifying research issues for historic archaeological resources within the PRNS-GGNRA requires an understanding of the social, economic, and technological forces that shaped the historical development of the Bay Area, San Mateo County, and coastal Marin county. In devising specific research issues for individual archaeological resources, the following aspects of the Bay Area’s historical development should be considered.

• Distance from supply centers can be expected to have been an important factor in determining the type of material culture or goods that would have been available to inhabitants and which might therefore be expected to appear in the archaeological record. In order to interpret the material culture found at a site as evidence of consumer behavior, it is important to understand how the site and its inhabitants fitted into the network of goods flowing into California (Parsons Brinckerhoff 2001:22). The importance of distance from supply centers could be expected to vary both through time, and within the overview area. For instance, San Francisco quickly became an international port following the Gold Rush, and it could be argued that inhabitants of the Presidio and other parts of the GGNRA close to the city had ready access to a diverse range of goods from an early period. The same could not be said, however, of more remote parts of the PRNS-GGNRA, which may have remained socially isolated and had restricted access to goods until much later in their history.

• Throughout the historic period, the study area had a highly diverse population both in terms of gender, age, ethnicity, and economic and social status. At the Presidio, for instance, the population included not only officers and enlisted men, but also their wives and families. Women and ethnic minorities, including Chinese, Japanese, and Filipinos, also worked as civilians on the base, providing laundry and cooking services for the military personnel. In addition, many of the dairying families in the PRNS came from Portuguese and Italian immigrant backgrounds.

• Among the most valuable types of deposits sought by historical archaeologists are hollow, artifact-filled, tightly dated features that can be associated with an identified individual, family, business, or institution. Such features—often
representing filled privy holes and wells, or refuse disposal practices such as sheet scatters—become increasingly less common in the archaeological record following the local establishment of organized sewer and refuse-disposal systems. Thus, for any archaeological resources, an understanding of the history of sewer hookups and refuse disposal is important in order to determine whether the site is likely to contain potentially NRHP-eligible deposits.

SELECTED HISTORIC THEMATIC CATEGORIES

Spanish Colonial/Mexican-period Archaeological Resources

Spanish Colonial and Mexican-period settlement within the PRNS–GGNRA is associated with the Presidio de San Francisco, the rancho settlements in the Sweeney Ridge/San Francisco Watershed locality, and on the Point Reyes peninsula and Olema Valley. Research issues relevant to the Spanish Colonial and Mexican-period settlements relate not only to the social and technological structure of the Presidio as a military outpost, but also to issues pertaining to nonmilitary residential sites. For instance, research issues relating to both military and residential sites are potentially relevant to the Spanish Colonial and Mexican-period settlement at the Presidio de San Francisco. The Presidio during this period, although military in purpose, was also the home for many military families. With the transfer of California to Mexican authorities following Mexico’s independence from
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<th>PRNS–GGNRA Localities Where Associated Sites Are Known to Occur</th>
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<td><strong>Spanish Colonial/ Mexican Military Infrastructure</strong></td>
<td>Defense structures, including quadrangles, batteries</td>
<td>El Presidio Quadrangle constructed ca. 1776 (Presidio)</td>
<td>Fort Point&lt;br&gt;Presidio of San Francisco (Presidio)&lt;br&gt;Fort Mason</td>
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<td>Military infrastructure, including soldier accommodations, powder magazines</td>
<td>El Presidio Quadrangle expanded ca. 1815 (Presidio)</td>
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<td><strong>Agriculture</strong></td>
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<td><strong>Agriculture</strong> (continued)</td>
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Table III.2. Historic Archaeological Property Types within the PRNS–GGNRA (continued)

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<td><strong>U.S. Military–Prisons</strong></td>
<td>Prison buildings, including mess halls, workshops, exercise yards, privies Residential structures, including privies for prison guards, administration, and families Domestic and institutional refuse, including household discards, food and butchering waste Graffiti</td>
<td>Alcatraz Penitentiary Former hospital, Fort Mason</td>
<td>Alcatraz Fort Mason</td>
</tr>
<tr>
<td>Historical Thematic Categories</td>
<td>Known or Anticipated Associated Property Types within the PRNS–GGNRA</td>
<td>Examples of Known Associated Sites within the PRNS–GGNRA</td>
<td>PRNS–GGNRA Localities Where Associated Sites Are Known to Occur</td>
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</tbody>
</table>
| U.S. Military–Hospitals       | Hospital buildings, including wards, kitchens, equipment storage, privies  
                               | Residential structures, including privies for medical staff, administrators, and families  
                               | Domestic and institutional refuse, including household discards, food and butchering waste  
                               | Graffiti  
                               | Former hospital, Fort Mason  
                               | Alcatraz  
                               | Fort Mason  
                               | Angel Island |
| U.S. Military–Lighthouse Infrastructure | Lighthouse and associated outbuildings, such as fuel and equipment storage structures  
                               | Residential structures  
                               | Domestic privy and refuse areas  
                               | Point Bonita Lighthouse (Point Bonita)  
                               | Point Reyes Lifeboat Station (PRNS)  
                               | Alcatraz  
                               | Fort Point  
                               | Point Bonita  
                               | PRNS |
| U.S. Military–Support and Infrastructure | Provisioning and services, including bakeries, laundries, post offices, storehouses, blacksmithys, mechanic shops, stables, and wagon houses  
                               | Water-management features, including cisterns, piping  
                               | Industrial and large-scale refuse areas, including camp dumps, sheet refuse, and discrete refuse areas associated with individual camp services and functions, etc.  
                               | Commissary, shops, and storehouses  
                               | School, training, and educational structures  
                               | Arguello and Hardie dump sites (Presidio)  
                               | Areas of Crissy Field with landfill refuse deposits by Presidio Quartermaster (Presidio)  
                               | Presidio  
                               | Alcatraz  
                               | Fort Mason  
                               | Fort Point  
                               | Marin Headlands |
Table III.2. Historic Archaeological Property Types within the PRNS–GGNRA (continued)

<table>
<thead>
<tr>
<th>Historical Thematic Categories</th>
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<th>Examples of Known Associated Sites within the PRNS–GGNRA</th>
<th>PRNS–GGNRA Localities Where Associated Sites Are Known to Occur</th>
</tr>
</thead>
</table>
| **U.S. Military–Support and Infrastructure (continued)** | Residential structures with associated sheet refuse, privies, and refuse areas associated with non-military employees, such as laundresses  
Sanitation services including sewers  
Graffiti  
Landscape features, including seawalls, filled areas, etc.  
Recreation Facilities | (see previous page) | (see previous page) |
| **Private Enterprises** | Stores and commercial buildings  
Hotels, associated privies, wells and refuse including household discards, food and butchering waste | Crystal Springs Hotel and San Feliz Station (Sweeney Ridge)  
Byrnes Store (San Francisco Watershed lands) | Sweeney Ridge  
San Francisco Watershed Lands |
| **Commercial Water Management** | Dams  
Flumes  
Tunnels  
Roads  
Construction camps  
Residential structures for dam maintenance personnel  
Associated outbuildings including stables, barns, privies | Facilities associated with the San Francisco Water Works and Spring Valley Water Company (Bakers Beach, Land’s End, Sweeney Ridge) | Land’s End  
Sweeney Ridge  
Presidio |
<table>
<thead>
<tr>
<th>Historical Thematic Categories</th>
<th>Known or Anticipated Associated Property Types within the PRNS–GGNRA</th>
<th>Examples of Known Associated Sites within the PRNS–GGNRA</th>
<th>PRNS–GGNRA Localities Where Associated Sites Are Known to Occur</th>
</tr>
</thead>
</table>
| Private (non-military and non-agricultural) Residences | Residential structures, including main house, secondary residences  
Associated outbuildings, including conservatories, privies, tankhouses  
Domestic refuse, including household discards, food and butchering waste  
Landscaping features, including promenades, waterfalls, stairs, entrance gates, planters, outside monuments/statuary, terracing, and gardens | Sutro Mansion (Sutro Heights)  
McLean Cabin (Olema Valley)  
1906 Refugee tent camps (Presidio)  
Fifoli (Bourn-Roth Estate) (Sweeney Ridge) | Cliff House  
Sutro Heights  
Presidio  
Olema Valley  
Sweeney Ridge |
| Public Recreation and Tourism | Public baths and associated facilities  
Amusement parks | St Francis Yacht Club (Marina Green)  
Cliff House and Cliff House Railway bed (Cliff House and Land’s End)  
Lurline Salt Water Baths and Sutro Baths  
Merrie Way Amusement Park (Cliff House)  
Lifesaver lookout (Land’s End)  
Tabor’s Barge Restaurant (Fort Point) | Cliff House  
Land’s End  
Fort Point  
Sutro Heights  
Marina Green |
Table III.2. Historic Archaeological Property Types within the PRNS–GGNRA (continued)

<table>
<thead>
<tr>
<th>Historical Thematic Categories</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Miscellaneous Refuse and Landfill Areas</td>
<td>Landfill deposits and community-scale refuse areas</td>
<td>Landfill containing earthquake debris from 1906 Earthquake (Aquatic Park, Fort Mason, Presidio)</td>
<td>Presidio</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Carved stone funerary refuse and butchering refuse found beneath Presidio Viaduct (Presidio)</td>
<td>Marina Green</td>
</tr>
<tr>
<td></td>
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<td>Landfill possibly containing material from the old French Hospital, with tombstone debris from Laurel Hill Cemetery (Marina Green)</td>
<td>Aquatic Park</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Landfill and demolition debris associated with the Pan Pacific International Exposition (Aquatic Park, Fort Mason, Marina Green, Crissy Field)</td>
<td>Fort Mason</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Landfill within seawall salvaged from Beach Chalet site including street rubble and cobblestones</td>
<td>Aquatic Park</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Landfill and refuse associated with 1941 filling episodes of Aquatic Park with material from Union Square Garage Excavation and California Beltline Railroad (Aquatic Park)</td>
<td>Fort Mason</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Marina Green</td>
</tr>
<tr>
<td>Historical Thematic Categories</td>
<td>Known or Anticipated Associated Property Types within the PRNS–GGNRA</td>
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<td>----------------------------------------------------------</td>
<td>---------------------------------------------------------------</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>Various property types</td>
<td>Crissy Airfield (Crissy Field)</td>
<td>Land’s End</td>
</tr>
<tr>
<td></td>
<td></td>
<td>San Francisco National Cemetery (Presidio)</td>
<td>Crissy Field</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Chinese Fishing Anchorage (James D. Phelan Beach at Land’s End)</td>
<td>Presidio</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Chinese shrimp camps (China Camp State Park)</td>
<td>China Camp</td>
</tr>
</tbody>
</table>
Spain in 1821, the residential and agricultural character of the northern California settlements increased both in the vicinity of the Presidio, and with the establishment of numerous landgrants by Mexican authorities.

Spanish Colonial settlement in the PRNS–GGNRA began with the Presidio de San Francisco, established in June 1776 by José Joaquin Moraga under orders from Captain Juan Bautista de Anza (Figure III.3). It was one of four presidios established in California, including San Diego de Alcala in 1769, Monterey in 1770, and Santa Barbara in 1782. Spanish authorities had decided to develop such a military presence on the San Francisco Bay in order to secure Spain’s claim to the area of Alta California north of the bay. The Presidio de San Francisco was also intended to provide support for the mission, San Francisco de Asís (Mission Dolores) that was established to the east in 1776. The Presidio was initially constructed as a square garrison of adobe buildings that faced inwards towards a central plaza. By 1794 additions to the complex included the Castillo de San Joaquin, constructed near what is now Fort Point, and Bateria de Yerbabuena, at the location of Fort Mason (NPS 2001a:4). Rather than simply being a military outpost, the Presidio also acted as a village for soldiers and their families. Many of these soldiers were, at times, stationed away from the Presidio, leading to situations where women and children comprised up to 70 percent of its population, as was the case in 1798. The population of the Presidio during Spanish and Mexican times varied from 200 to 360 people (NPS 2001a:6). By the 1820s residents had begun to construct farmsteads to the west and south, outside of the Presidio walls (NPS 2001a:7).

Excavations within the Presidio of San Francisco that relate to the Spanish Colonial/Mexican-period of occupation include those by Voss and Benté (1995, 1996a, 1996b); Voss et al. (1999, 2000); Woodward-Clyde Consultants (1994); and the Tennessee Hollow Watershed Archaeology Project (see Table III.1).

Several ranchos, now within the boundaries of the PRNS–GGNRA, were established on lands granted during the tenure of Spanish and Mexican governments in California. These ranchos were primarily located within the San Mateo County area of the GGNRA, and the PRNS. Ranchos within the GGNRA in the area of San Mateo include Rancho las Pulgas (issued to Luis Arguello in 1820), Rancho Buri Buri (issued to José Antonio Sanchez in 1835), Rancho San Pedro (issued to Francisco Sanchez in 1839), Rancho San Mateo (issued to Cayetano Arenas in 1845), Rancho Feliz (issued to Domingo Feliz in 1844), and Rancho Cañada Raymundo (issued in 1840 to John Coppinger; Babal 1990:16-17). The PRNS ranchos include the Rancho las Baulines (issued to Rafael Garcia in 1835), the Rancho Tomales y Baulenes (issued to Rafael Garcia in 1837), Rancho Nicasio (issued to Pablo de la Guerra and Juan Cooper in 1844), and Rancho Punta de los Reyes (issued to James Richard Berry in 1836; Livingston 1995:10-18). These ranchos were primarily involved in raising cattle for the hide-and-tallow trade.

**Comparative Research on Spanish Colonial/Mexican-period**

Archaeological research on Spanish Colonial/Mexican-period sites within California has concentrated on large institutional sites such as missions or presidios. Archaeological excavation of Spanish Colonial and Mexican-period residential sites such as ranchos has been more limited. Major excavations that have been conducted on this type of site in California include the excavation of the Hugo Reid Adobe in Los Angeles (Wallace,
Part III – An Overview of Research Issues for Historical Archaeology

Desautels, and Kritzman 1958; Wallace and Wallace 1959), the Petaluma Adobe in Sonoma County (Treganza 1959), Sepulveda Rancho (Chace 1969), a 1971 investigation of the Avila Adobe in Los Angeles (Butler 1991), the Cooper-Molera Adobe in Monterey (Felton and Schulz 1983), the Ontiveros Adobe in Santa Fe Springs (Frierman 1982), and Los Cerritos Ranch House in Long Beach (Evans 1961, 1969). Smaller, more recent excavations on rancho sites, often prompted by planned development, include those of the Khlebnikov/Smith Adobe (CA-SON-291/H) in Sonoma County (Selverston 2000), Peralta Adobe in the Peralta Hacienda Historic Park, Oakland (Costello and Duval 2001), and the Espinosa Adobe (CA-MNT-1429H) in Monterey County (Costello et al. 2001).

Archaeological Investigations of the Petaluma Adobe, Sonoma County. From 1996 to 1998, Steve Silliman of the U.C. Berkeley Archaeological Research Facility conducted archaeological investigations for his doctoral dissertation at the site of Mariano G. Vallejo’s rancho in the Petaluma Adobe State Historic Park, Sonoma County. Vallejo was a significant figure in the Mexican-period settlement of northern California. The 41-acre Petaluma Adobe State Park contains the main rancho building, several small foundations, and surrounding lands of Vallejo’s original large rancho holdings. The main adobe is one of the largest surviving Mexican-period rancho structures in California. Excavations conducted in 1998 by Silliman and the U.C. Berkeley Archaeological Research Foundation inside the adobe as part of the California State Building Seismic Program revealed details of its construction history; the promontory on which the building is located had been shaved off to create a flat building surface prior to its construction (Silliman 1999). Silliman’s excavations also focused on identifying and investigating residential and activity areas associated with the rancho’s labor force. The rancho maintained a Native American labor force that numbered from 200 to 1,000 Native Americans, depending on the year and season (Silliman 2000a:78). Magnetometer surveys were used as a non-invasive method to identify potential subsurface features and prioritize areas to be tested archaeologically (Silliman 2000b). Deposits dating from the 1830s-1850s and containing European objects such as beads together with more traditional Native American material culture items, including lithics, groundstone, and worked bone were located south of the rancho adobe and were thought to represent a Native American worker residential area (Silliman 2000a:400-403). Silliman suggested that unlike other Spanish and Mexican-period colonial institutions, such as missions, Vallejo made few attempts to restrict the cultural practices of his Native American workers. Yet the rancho remained a colonial structure in which Native Americans held subservient positions. Silliman employed the concepts of social agency, practice theory, and practical politics to explore the reactions of Native Americans to Mexican Colonial institutions such as ranchos (Silliman 2001:184). He suggested that the workers’ continued use of traditional lithic materials, despite increased access to flakable, industrial materials, such as glass or ceramic, represented a political choice, either as a symbol of resistance, or as an attempt to create a group or individual identity within a colonial situation.

The Metropolitan Water District of Southern California Archaeological Project, Los Angeles. This project involved a program of excavation and mitigation monitoring in 1996 by Foothill Resources, Ltd., Applied Earthworks, Inc., and the Anthropological Studies Center at Sonoma State University for Metropolitan Water District of Southern California as part of construction of the new Metropolitan Headquarters Facility next to
Union Station in downtown Los Angeles. The project employed a consolidated approach to achieving compliance with the cultural resources requirements of the California Environmental Quality Act, meaning that the identification, evaluation, and if necessary data recovery of archaeological features and deposits were undertaken in one continuous field process. Given this consolidated approach, research themes and associated questions used by the project were broadly constructed around issues of the changing historic urban experience so as to be applicable to features and deposits with differing complexity, scale and historical origin.

The Headquarters Facility Project site was located adjacent to the El Pueblo de Los Angeles, a center of the Spanish Colonial/Mexican-period settlement in Los Angeles (Costello et al. 1998:iii). The project site contained lands originally granted to Francisco Avila in the 1790s. Avila’s grant was planted with vineyards and orchards, and also supported horse and cattle herds (Costello et al. 1998:44). Portions of the land were sold by the Avila family in 1854-55 to the Irish immigrant Mathew Keller, who used the land for vineyards and a winery. The 1996 excavations uncovered the remains of an earthen water ditch, designated Zanja 654, thought to date to the 1820s use of the land by Avila as vineyards and orchards. The ditch was a feature of the extensive Spanish- and Mexican-period system that carried water from the Los Angeles River to agricultural fields, vineyards, and orchards. As such, it provided information regarding the technological development of agriculture in the Los Angeles area. Excavations revealed that during the 1880s, the ditch was modified to carry a buried wooden pipe, although it was subsequently abandoned by 1891 (Costello et al. 1998:123, 438). Research themes relating to technology and urban geography were used to provide context for evaluating and interpreting the ditch. This allowed for an understanding of the changing cultural landscape of Los Angeles, which even into the 1880s relied on the modified Spanish and Mexican-period water system for its expansion (Costello 1999:259). Documentary and archaeological evidence indicates that this reliance continued until the 1890s, and was only halted because growing urbanization led to dramatic changes in the Los Angeles cultural landscape, including the removal of the orchards and vineyards and the growth of residential tracts that accelerated the search for more reliable water sources than the Los Angeles River.

**Research Issues: Spanish Colonial/Mexican-period Resources**

**Research Theme: Built Environment of Spanish Colonial/Mexican-period Settlements** (including the Presidio de San Francisco and ranchos)

1. Reconstruction of the physical layout of building complexes, including the relocation of buildings known from historical records and the identification of activity areas.

2. Provision of information on individual buildings and structures, including the building layout, size of rooms, building and room function, identification of associated work areas (such as farming plots, butchering or food-processing areas), and evidence of building additions.

**Data Requirements:**

- Historic maps and documents outlining the building layout of the site, census records giving occupation details of various structures, contemporary
drawings or early photographs showing the location of buildings and activity areas, and documentary information regarding the functions and activities of people occupying the site.

- Archaeological resources such as foundations, tightly dated artifact deposits etc., that can be detected using techniques such as ground-penetrating radar, surface inspection, archaeological excavation, etc.

**Research Theme: Cultural Landscape of Spanish Colonial/Mexican-period Settlements**

1. Reconstruction of the pre-Spanish settlement environment, including identification of the location of sloughs, water sources, dune systems, vegetation patterns, etc.

2. Reconstruction of the history of deliberate land modification on the site, including episodes of filling of low-lying areas, modification of waterways, eradication of native vegetation, controlled burning to improve pasture, etc.

3. Assessment of the effect of unintentional activities, such as replacement of native grasses with non-native pasture types, impact of activities such as livestock grazing on watercourses and vegetation, eradication of native faunal species, etc.

**Data Requirements:**

- Historic maps, documents, and early illustrations providing details of the pre-settlement environment.

- Historic maps, documents, and early illustrations providing details of post-settlement landscape modifications, and settler approaches and attitudes towards the landscape and land use.

- Geoarchaeological/geomorphological analysis to provide details of buried or filled land features, such as sloughs, dune systems, etc.

- Botanical remains, such as pollen, charcoal residues, etc., for analysis to provide information regarding the floral composition and sequence of plant communities, as well as burn rates of historic landscapes, etc.

**Research Theme: Social Context of Spanish Colonial/Mexican-period Settlements**

1. Identification of the occupants or occupant groups at the site, including where possible, the names, backgrounds, occupations. Identification also of the different living areas of occupant groups or individuals.

2. Evidence for the social structure and stratification by class, gender, ethnicity, etc., of groups living within the site. Such differentiation might be indicated by the separation of living areas, differential qualities of material goods, housing or food remains in occupation areas.

3. Evidence that this differentiation may have been the result of officially imposed structures (such as the separation of the living quarters of single men
from those of married men and their families on military sites), or as the result of attempts by the social groups themselves to develop and maintain separate identities.

4. Variation in social structure and presentation of group and individual identities between the various settlement types established within Alta California prior to 1848 (such as ranchos, pueblos, presidios, and missions). Does the social structure of Spanish Colonial/Mexican-period settlements display any modifications due to the effects of isolation from a high degree of official oversight?

5. Comparison between the apparent social structure and the opportunities for the creation and maintenance of group identities—particularly those relating to Spanish/Mexican settlers and Native American workers/neophytes—and the social structure evident at sites of comparable time periods and Bay area locations (i.e., settlements by the Russian-American Company in Sonoma County and later American-period farming settlements.

Data Requirements:

- Archival sources, such as census records, identifying patterns of site occupation.
- Archival sources, including maps, that identify areas of occupation within the site used by different social groups such as soldiers with families, Indian workers and their families, non-military personnel, etc.
- Archival sources, including the diaries of visitors, etc., that record details about life at the site.
- Archival sources regarding officially developed plans and regulations designed to control and govern the establishment and maintenance of settlements such as the Presidio de San Francisco.
- Comparative data from the excavations of the Alta California Russian settlements (e.g., Lightfoot et al. 1991, 1997), rancho settlements outside of the GGNRA and PRNS (e.g., Silliman 1999, 2000a), and later American-period agricultural ranches.
- Archaeological resources that allow for the identification of buildings and activity areas. Presence of archaeological features containing artifacts of sufficient quantity, integrity, variety, and association to allow for the development of comprehensive interpretations.

Research Theme: Relationship of Spanish Colonial/Mexican-period Sites to Global Social and Trading Networks.

1. The economic and social relationships of Spanish Colonial and Mexican-period sites to foreign social and trading networks.

2. The degree to which these relationships were not officially sanctioned by Spanish and Mexican authorities.
3. The degree to which these extra-legal relationships were developed as means of coping with economic and social isolation.

4. The degree to which the social and economic structure of Spanish/Mexican-period settlements, including labor and family relations, were altered by the access to global social and trading networks.

**Data Requirements:**

- Archival sources, such as census records, to identify patterns of site occupation.
- Archival sources, including the diaries of inhabitants, visitors, etc. that detail social, trading, and other economic relationships between foreign visitors and Spanish Colonial/Mexican-period settlements.
- Archival sources regarding official plans and regulations designed to regulate the establishment and maintenance of Spanish/Mexican-period settlements, including prohibitions on contact, trade etc., between settlements and foreign influences.
- Comparative data from the excavations of Alta California Russian settlements (e.g., Lightfoot et al. 1991, 1997) and Alta California Spanish and Mexican settlements outside of the GGNRA–PRNS (e.g., Silliman 1999, 2000a).
- Archaeological resources that allow the identification of building remains and activity areas. Presence of features containing artifacts of sufficient quantity, integrity, variety, and association to indicate foreign influence via trade.

**Agricultural Archaeological Resources**

Dairies and homesteads are among the most common rural sites within the PRNS-GGNRA. Homesteads and dairies were established in the San Mateo area of the GGNRA (e.g., the Fifield and Jersey Farm dairies in the vicinity of Sweeney Ridge) beginning in the 1860s (Babal 1990:65-68). The densest concentration of farms and dairies within the project area, however, are those of the Point Reyes peninsula and Olema Valley (Figure III.4). Dairies were established in the Point Reyes and Bolinas area as early as 1857. This area became one of the centers of the dairying industry in the North Bay area. The temperate climate, high moisture levels, and resulting thick grass coverage produced environmental conditions ideally suited to dairying (Livingston 1995:40, 52). By the end of the 19th century, Point Reyes led California in butter production, and its dairy products were highly valued (Livingston 1995:58). Initially the Point Reyes dairies operated as independent, family-owned establishments, although from the 1880s they were increasingly occupied by tenant farmers. From the 1860s, the dairy industry developed an ethnic character, with the majority of dairy owners and tenants in the Marin area being recent emigrants from Switzerland and Portugal (Livingston 1995:41). For instance, dairies in the Marin Headlands (such as Big Slide Ranch, Big Lagoon Ranch, Dias Ranch, Tennessee Valley Ranch) were first tenanted, then owned and operated, by Portuguese immigrants, all from the Azore Islands in the late 1880s to early 1890s.

Several factors in the late 19th and early 20th century resulted in extensive modifications to the cultural landscape and material culture of the Point Reyes and Olema
Figure III.4. Panorama of the Home Ranch, Point Reyes, ca. 1910 (Livingston 1994:393)
Valley dairies. These included transportation options, modernization of dairying technology, and government regulation. Throughout the 19th century, the Point Reyes and Olema Valley dairies remained dependent on ocean travel to access the markets of San Francisco. It was not until the 1920s that railroads began to replace maritime shipping as the primary transportation used by the dairies (Livingston 1995:43). Dairies within the PRNS displayed an uneven acceptance of technological innovations. For instance, whereas by ca. 1900 Point Reyes milking barns were increasingly equipped with sanitation improvements such as concrete floors, milking machines (which were invented in the 1870s) did not become common in the area until the 1920s and 1930s (Livingston 1995:54).

From the early 20th century, government regulations increasingly focused on the dairy industry, requiring regular capital improvements of the farm's infrastructure. From ca. 1915, government legislation prompted the establishment of local milk-production cooperatives. Subsequently milk from the PRNS dairies was increasingly transported to these cooperatives for centralized processing, rather than being processed on individual farms (Livingston 1995:61). The dairy grading system, introduced gradually by the California government from the 1920s, changed the cultural landscape of dairies as they struggled to adapt their infrastructure to meet improved sanitation standards. Following the introduction of grading and the increasing use of centralized cooperatives for milk processing, the large wooden milking barns were often relegated to use as feed storage, and the old dairy houses or creameries were remodeled as residences or torn down. The sanitary barn, which had been built or improved to meet the government's grading standards, became the center of ranch activities (Livingston 1995: 63). Dairies in the Olema Valley gradually closed and the land was purchased by the federal government. Several of the Point Reyes dairies, however, were purchased by the federal government and continue to operate under federal permits. Currently, 13 beef and dairy farms operate on the Point Reyes peninsula within the PRNS.

A comprehensive discussion of property types found on dairying and farming sites on California's central coast is provided by Eastman (1998). A list of resources for the archaeological study of dairying is presented in Table III.3 in Appendix A. This table can serve as a planning tool for use in developing research designs for specific dairy properties within the PRNS–GGNRA.

Productive, long-term networks of tenant- and owner-operated dairies, such as are found in the PRNS–GGNRA, have received relatively little archaeological attention. Many of the research issues however, that relate to small, family-based farms can be applied to the farms and dairies of the PRNS and the GGNRA. Farmsteads and dairies are among the most commonly found rural sites in the American West. Due to environmental conditions in much of the western United States, many of these farms were involved more in extensive (i.e., ranching) agriculture than the intensive modes that characterized commercial dairies. While farmsteads have been extensively studied in the eastern United States, the majority of recent farm-related studies in the West have focused on ranching landscapes (Hadley 1993; Jordan 1993; Mires and Bullock 1995:13; Moir 1987; Stein 1988; Ziesing 1996, 1997a, 1997b).

As Mires and Bullock note (1995:13-14), farmsteads can present profitable sites for archaeological inquiry. Farmsteads can have long, continuous histories of occupation and use, often by multiple generations of the same family. As such, they often have extensive associated documentation, including family genealogy, oral histories, and land and taxation
records. The long-term occupation that characterizes many farmsteads makes them particularly suitable to archaeological investigations focusing on both diachronic and synchronic processes. In addition, the main infrastructure of farms tends to be highly centralized around the homestead and principal barns, even if the farm itself covers large areas of land (Mires and Bullock 1995:13). The centralization of many farming activities allows for their investigation using archaeological techniques.

**Comparative Research on Agricultural Resources**

**Green Mountains, Vermont.** Peter Mires (1993) conducted research on the spatial distribution of 19th-century farmhouses, fields, and pastures in the Green Mountains of Vermont. This research adopted an ecological anthropological approach in determining the role played by aspect in people’s preferences for the location of farmsteads. Mires suggested that although many of the physical structures that made up the homesteads were in ruins, or only existed as subsurface archaeological resources, the sites still retained their integrity of physical location, and that environmental variables of these locations—such as slope, elevation, soils, and aspect—could be used to examine the subsistence strategies of the sites’ inhabitants. Mires used historic maps, atlases, gazetteers, and other archival sources to determine the location of farmsteads in relation to aspect, and whether a preference for a particular aspect changed with different generations of farmers. He found that there appeared to have been overall a strong preference for locating farmsteads on slopes with the sunniest aspect. This preference for sunny sites however, was found to be subject to diachronic variability. While earlier farms were predominantly located on sunny slopes, later farm locations were the result of more complex decisions that involved factors such as transportation routes and kinship networks (Mires 1993:89). Mires suggested that while the complexity of settlement decisions could not be reduced to a single variable, aspect was a useful variable in developing a predictive model for the location of farmstead sites. Thus, farm sites that retained little remaining material culture could still provide information on factors such as their farmers’ subsistence strategies.

**1860s Homestead Site, Carson City, Nevada.** In 1994 Intermountain Research excavated site 26Or201, a farmstead and dairy that had been occupied between 1862 and 1871, near U.S. 395 in Carson City, Nevada (Mires and Bullock 1995). Intermountain Research used location theory (the study of the “why of the where” of site location) and farmstead proxemics to study the spatial location and layout of the farmstead. Location theory looks not only at both the location of a site such as the 26Or201 farmstead in relation to webs of production, transportation, and markets, but also the location of different components of the farmstead, such as barns and accommodation. The theory maintains that there is a degree of predictability in the relative location and layout of production systems such as farms (Mires and Bullock 1995:16). Farmstead proxemics suggests that there are discernable patterns related to how people use space that are based on culturally determined influences (such as cultural origins, social context, and economic factors such as distance to markets, suppliers, etc.). If so, then these patterns could be used as a basis for comparison between sites, such as farms that are located in different geographical and cultural regions. Intermountain Research cited previous research by Randall Moir (1987) that had suggested that 19th-century Anglo-American farms displayed a high degree of homogeneity in their layout and use of space (Mires and Bullock 1995:16). Research issues for the 26Or201 site considered (1) the location of the farm in relation to commercial...
activities, such as marketing and distribution centers; (2) whether the location of midden refuse on the site conformed to expected patterns of Anglo-American farmstead proxemics; and (3) evidence of adaptation to local environmental conditions by the farm’s operators. The excavations found that the 26Or201 site appeared to conform to aspects of agricultural location theory regarding the farm’s relatively close proximity to dairy markets, and that the farm’s owners had practiced a degree of environmental adaptation regarding the location of farm facilities in relation to surface and ground-water supplies. The location of artifact scatters on the site also suggested that the site largely conformed to previously recognized patterns of spatial use found on Anglo-American farms, in which the majority of sheet midden material is found in the back and side yards of the house and around frequently used outbuildings and activity areas, leaving a relatively artifact-free “front yard” (Mires and Bullock 1995:112).

**Los Vaqueros Project, Contra Costa County, California.** In 1995 the Anthropological Studies Center, Sonoma State University, excavated a ranching complex at the Weymouth/Rosa site (CA-CCO-445H), in the vicinity of the Los Vaqueros Reservoir, California (Ziesing 1996). This was part of a larger project to inventory and evaluate cultural resources within the Los Vaqueros watershed. The Weymouth/Rosa site, occupied from the 1880s to the 1920s, was used for mixed tenant-farming. The ASC applied a contextual approach, employing a variety of archival, oral history, and archaeological sources to reconstruct the multifaceted lifeways represented at the site. Research issues investigated by the ASC researchers with regards to the Weymouth/Rosa ranch and other nearby farmstead sites included the adaptation of farmers to the seasonally arid climate of the Los Vaqueros area, and the modernization of local farms. The Los Vaqueros Project resulted in a management plan (Brady/LSA 1999), numerous technical reports (e.g., M. Praetzellis, Stewart, and Ziesing 1997; Ziesing 1996, 1997a, ), and several interpretive monographs (A. Praetzellis, Ziesing, and M. Praetzellis 1997; Ziesing 1997b).

**The Aiken Plateau, South Carolina.** In their study of modernization of recently occupied farmsteads in the Aiken Plateau, South Carolina, Cabak, Groover, and Inkrot (1999) pointed out the difficulty often experienced by archaeologists in constructively studying 20th-century sites. The Aiken Plateau study used archival records and archaeological research to conduct regionally based analysis of farmsteads occupied from ca. 1875 until 1950. Two-thirds of the farms in this area during the study period were run by tenants, and the majority of these were based on sharecropping rather than the cash rental system (Cabak, Groover, and Inkrot 1999:20). These farmsteads were analyzed with regard to how they conformed to theories of farm modernization. Modernization theory provides an interpretive framework to examine the relationship between “regional development, the adoption of new technology and crop regimes, [and] the organization of class structure and gender roles” (Cabak, Groover, and Inkrot 1999:22). Previous researchers have used aspects of modernization theory to suggest that from the late 19th century, the material culture of even isolated rural farmsteads became increasingly homogenous, as a result of U.S. industrialization, improved transportation, and the resulting wide availability of mass-produced goods (Cabak, Groover, and Inkrot 1999:22). The Aiken Plateau study found that farmsteads in the region typically showed differential rates of modernization. Machinery and infrastructure important for the economic survival of the farm showed constant adaptation and modernization. In contrast, aspects of the
farms’ material culture such as residential farm buildings showed little evidence of modernization or infrastructure improvement. Despite the differential rates of farm modernization, analysis of midden deposits showed that the majority of farm households, regardless of their economic status, participated in modern, industrialized culture by the purchase of inexpensive items such as soda pop and processed foods (Cabak, Groover, and Inkrot 1999:38). The Aiken Plateau study found that, contrary to the common assertion of the beneficial and transformative effects of modernization in the 20th century, “modern conveniences and technology possessed distinct boundaries that were typically determined by geographic area, economics, and the location of families within the agricultural ladder” (Cabak, Groover, and Inkrot 1999:38).

Research Issues: Agricultural Resources

Research Theme: Effects of Modernization on the Technology and Cultural Landscape of Dairies and Farms

Technological change in the farming and dairying industries of PRNS–GGNRA came from several sources: adaptation to the change in transportation from coastal shipping to land-based transportation via road and rail; the need to maintain competitiveness with other dairy producers; and the requirement to modernize processes and infrastructure as a result of government regulations (Figure III.5).

1. Reconstruction of the dairying and stock-raising technologies used on a dairy or farm site during particular periods of its occupation.

2. The extent to which the changes in the technology employed on the farm site correlates either with changes in farm ownership/tenancy/economic circumstances, or with changes in the availability of technology, or with innovations in technology and processes required by the introduction of government regulations.

3. The extent to which farms were successful in obtaining the capital necessary to purchase new technologies that were required either by government regulations or evolving industry practices.

4. The extent to which the economic, governmental, and social pressures to modernize equipment and processes resulted in changes in the social structure and economic stability of the farms.

Data Requirements

- Documentary sources including government papers, industry reports and catalogues to enable the reconstruction of the technology of dairying and stock-raising operations during particular periods of the site’s occupation.

- Documentary sources, including census, county, and family records, to enable the reconstruction of the ownership and tenancy history of individual farms.

- Documentary sources such as diaries, oral histories, photographs, family papers, newspaper reports, etc., to provide an understanding of what technologies were in use on the farm site at particular periods, and how this compared with that available to the farmer or required by government regulation.
• Archaeological features within the stock or milk processing areas of the farm site, or those that relate to these areas, that contain collections of artifacts of sufficient quantity, integrity, variety, and association to allow for the development of comprehensive interpretations.

Research Theme: Victorianism and the Modernization of the Farm and Dairy Industries

As noted by Praetzellis and Praetzellis (1996:30), an important area of study for historical archaeologists and social historians is the process by which traditional, pre-modern cultures adapt to life in an industrial society. This includes both native-born inhabitants and recent immigrants. The farm and dairy industries of PRNS–GGNRA have several characteristics that give them the potential to contribute to the study of modernization in the rural context. These characteristics include the fact that the farms were generally not subsistence enterprises, but were instead involved in the production of milk, butter, and produce for commercial trade; that they were often operated by tenants rather than owners; that they were subject to intensive government regulation; and that they were often owned or operated by immigrants coming from the pre-industrial farming cultures of countries such as Portugal or Switzerland. Several research areas related to modernization can be discussed with regards to the dairies and farms of the study area. One relating to the modernization of technology has been discussed above. Another is the effect of Victorianism on the culture and operation of the farms.

As is mentioned below in the discussion of urban residential sites, previous researchers have suggested that the nexus of social and aesthetic values known as Victorianism acted as a dominant and homogenizing force on ethnic and working-class
groups. Victorianism was a major force by which the ethics and social values of industrialization were integrated into working-class and ethnic cultures. Time thrift, modernization, and a belief in material progress through commercialization were important elements of this middle-class-based ideology. As Van Bueren notes, it is important to investigate Victorianism not “as a monolithic entity, but rather as a system of beliefs that were adopted differentially by individuals and social groups” (Van Bueren 2001:18). Archaeologists such as Hardesty (1980, 1882), Praetzellis (1991), and Praetzellis and Praetzellis (1990a, 1990b, 1996) have investigated the effect of Victorianism as it was enacted within both rural and urban Western contexts. Some of the issues outlined below can be discussed using data from only one site, while others require the analysis of comparative data from multiple sites.

1. The extent to which values associated with Victorianism—such as mechanization, time thrift, modernization etc.—were propagated within the farm and dairying communities of PRNS–GGNRA.

2. The extent to which Victorian values were used as a common language to structure social relations within the farming community, including the relationship between farm or dairy owners/operators and their workers, given the multi-ethnic character of many farm and dairying communities of the PRNS–GGNRA.

3. The extent to which elements of traditional premodern ethnic cultures were retained or subsumed by Victorianism. Are there observable differences in the response of dairy owners/operators and their workers of different ethnic and class backgrounds to Victorian values?

4. Variations in how Victorian values were adopted in rural and urban contexts.

5. The extent to which ethnic values were retained versus the absorption of Victorian values, and how this varied between households of differing economic, social, and ethnic character.

Data Requirements:

- Documentary sources including government papers, industry reports and local newspapers to reconstruct the extent to which Victorian values such as modernization and mechanization were propagated in the dairying industry.

- Documentary sources including census, county, and family records to enable the reconstruction of the ownership/tenancy history and patterns of worker employment for individual farms.

- Documentary sources such as diaries, oral histories, photographs, family papers, newspaper reports, etc. to provide an understanding of the retention of premodern ethnic values, or adoption of Victorian values by farming families.

- Architectural and landscape features, such as barns, milking sheds, etc., that demonstrate the modification of the farming landscape/built environment in ways that reflect retention of ethnic characteristics or adoption of Victorian values by farming families.
• Archaeological features such as filled privies, cisterns, or household dumps, etc., containing artifacts of sufficient quantity, integrity, variety, and association to indicate the extent to which individual farming families adopted Victorian consumer values and practices.

Research Theme: Economic, Ethnic, and Social Landscape of the Farm and Dairy Industries

1. The influences of government regulation on the built environment and economic stability of the PRNS–GGNRA dairies and farms.
2. The extent to which patterns of land use, development, and tenure were affected by family development cycles versus external economic influences.
3. The relationship between patterns of land use on farms and the economic vector of their owner/tenant occupier.
4. Differences between the economic strategies of land owners and tenant farmers.
5. Differences between owner/tenant farmers in their use of non-family labor.
6. The relationship between spatial patterns of work and living arrangements and stratification or ethnic separation of the farm’s workforce.

Data Requirements:
• Documentary sources including government papers and industry reports to reconstruct the sequence and patterns of enforcement of government regulations relating to the dairying and farm industries.
• Historic documents, photographs, newspaper reports, family records, and inventory recordings that can indicate the extent to which government regulations affected the built environment or the economic stability of farms.
• Documentary sources including census, county, diaries, oral histories, photographs, family records, and newspaper reports to enable the reconstruction of the ownership/tenancy history and patterns of worker employment for individual farms. Documentary sources including family farm records, and analysis of the built environment to determine the extent to which economic strategies and successes differed between farm/dairy owner and tenant families, and those of different ethnic background.

Research Theme: Cultural Landscape of the Dairies and Farms

1. The influence on dairying and farming cultural landscapes of the increasingly diverse ethnic composition of PRNS–GGNRA dairy and farm tenants/owners from the 1860s.

Data Requirements:
• Historical and oral-history research to understand the general cultural landscape of farms in the PRNS–GGNRA area at different periods of occupation. Recordation and analysis of the cultural landscape and landscape
processes of individual farms to assess the extent to which technological innovation, and government regulation, and the capitalization required to implement these reforms resulted in modification of the farming landscape of individual farms.

**Research Theme: Environmental Adaptation of Farming Practices to the PRNS–GGNRA Environment**

Much of the PRNS–GGNRA previously used for farming received seasonal rain but remained relatively lush year-round through the influence of coastal fog. Many of the farmstead sites investigated in the western U.S. have been in arid or seasonally arid areas. Research issues directed towards these farms therefore have often displayed an emphasis on understanding water extraction and distribution systems, and other types of environmental adaptation. Although issues of adaptation to arid environments are not so relevant to the farmsteads in the relatively well-watered portions of the PRNS–GGNRA, farming in the area did require adaptation to local conditions.

1. Reconstruction of the pre-settlement environment, including identification of the location of sloughs, water sources, vegetation patterns, etc.
2. Reconstruction of the history of deliberate land modification on the site, including modification of water ways, eradication of native vegetation, controlled burning, pasture improvements, installation of windbreaks, etc.
3. The effect of unintentional activities such as replacement of native grasses with non-native pasture types, impact of activities such as livestock grazing on watercourses and vegetation, eradication of native faunal species, etc.
4. The degree of retention or adaptation of native practices by those dairy or farm owners who grew up in other dairying/farming regions, such as Portugal, Switzerland, or the U.S. East Coast.
5. The influence of government regulations on the environmental landscape of dairies and farms. To what extent has the current PRNS restriction on dairy operations resulted in changes to the environmental landscape of dairies?

**Data Requirements:**

- Historic maps, documents, and early photographs providing details of the pre-settlement environment.
- Historic maps, documents, and early photographs providing details of the post-settlement landscape modifications, and settler approaches and attitudes towards the landscape and land use.
- Geoarchaeological/geomorphological analysis that can provide details of buried or filled land features, such as sloughs, stabilized dunes, etc.
- Analysis of botanical remains, such as pollen analysis, charcoal residues, etc., to provide information regarding the floral composition and burn rates of historic landscapes, etc.
Landscape features such as windbreaks, waterway modifications, water-management features, rock-clearing, pasture improvements, etc., that demonstrate environmental adaptation.

Logging and Milling Archaeological Resources

Logging sites offer the opportunity to examine research issues relating to changes in logging and processing technology. However, because logging and processing were carried out by small, relatively mobile operations, often in isolated work areas, these sites also have the potential to address issues relating to the labor relations and social structure of short-term extractive and construction industries such as mining, and road and dam building. Research at camps related to these industries can illuminate the complex interplay between local environmental, economic, technological and social factors of short-term resource extractive industries that characterized much of the development of the western U.S.

Logging was a common small-scale industry within the PRNS–GGNRA. The growth of San Francisco during the Gold Rush prompted the development of the industry in the gulches and hills of the Sweeney Ridge and Phleger Estate localities within the GGNRA in San Mateo County, and the Olema Valley and Bolinas Lagoon areas north of San Francisco Bay. The latter were some of the earliest logging operations in the parklands. For instance, in 1849 Gregorio Briones, occupant of the Rancho las Baulines, was contracted to cut timber and operate sawmills on his rancho (Livingston 1995:25). The township of Bolinas was founded in 1849 as a shipping point for the transportation of timber cut and milled in the Bolinas Lagoon area (Livingston 1995:43). Timber was shipped to San Francisco on shallow-draft lighters from Bolinas and Lagunitas (Paper Mill) Creek near Point Reyes Station (Livingston 1995:47-49). Briones’ initial forays into the timber industry were followed by the operations of Samuel P. Taylor and Victor Post, who established a paper mill on the Rancho Tomales y Baulines grant (Livingston 1995:30).

Logging camps and associated sawmills in 19th-century California were generally small, relatively mobile operations. The mills often had limited access to transportation and so were built to service local demand, such as that produced by rapidly expanding townships. They were moved frequently as the local demand slowed or nearby timber resources became exhausted (Praetzellis and Praetzellis 1993:12). By the first decade of the 20th century, as large corporate interests began to dominate California’s timber industry, such operations were becoming less common. The greater capital investment of which these new operators were capable was used to provide improved rail and road transportation between timber-cutting sites, the sawmill, and the market. Improved transportation and greater investment in more modern, efficient technology allowed corporate mills to use poorer quality timber, and to ship to distant markets rather than having to rely on local demand for their products (Praetzellis and Praetzellis 1993:14).

As noted above, logging camps can offer valuable opportunities to investigate the social and economic structure of isolated work camps. In addition to these logging and milling camps, the PRNS–GGNRA also contains a suite of sites related to the construction of San Francisco Water Works and Spring Valley Water Company infrastructure in the vicinity of Sweeney Ridge in San Mateo County. These sites, dating from the 1860s, include not only water-transportation infrastructure—such as the Pilarcitos, Upper and Lower
Crystal Springs dams, numerous tunnels, flumes, and roads, but also construction camps and dam maintenance housing, such as those of Pilarcitos (Spring Valley Farm) and San Andreas (Babal 1990:97-100). Similar to logging and milling sites, the water companies’ infrastructure, camps, and staff housing offer the opportunity to investigate issues related to the role of technological developments as a modernizing influence in the West, the use of hinterland areas to supply raw materials for urban areas, and the influence of corporate ideologies and worker resistance on labor relations.

Comparative Research on Logging and Milling Archaeological Resources

Riepetown, White Pine County, Nevada. In the excavations of the historic townsite of Riepetown in White Pine County, Nevada, Hardesty et al. (1994) sought to base their research framework primarily upon testable theories, rather than qualitative interpretations of the data. One of the initial steps in preparing this research framework was the development of an interpretive context that could help identify and develop research issues to be investigated using the historical and archaeological resources of Riepetown. The project grounded its research issues within the theoretical context provided by world systems theory and power theory, both of which are concerned with aspects of industrial capitalism (Hardesty et al. 1994:3.2). World systems theory allows the study of the development of capitalism at different spatial and temporal scales of analysis by concentrating on the role that external forces, such as economic or political relationships, play in the development of a society through the influence of capitalism, necessarily de-emphasizing the role of internal forces such as population pressure or class structure. Power theory is concerned with the relationships between dominant and subordinate social groups, such as factory owners and workers. Power theory examines the strategies by which dominant groups seek to control their subordinates, and the resistance strategies developed by the latter. Under the industrial capitalist system, dominance strategies—such as mechanization, company towns etc.—can be examined and contrasted to worker resistance strategies, such as strikes or “slow downs,” industrial sabotage, or anti-social behavior (Hardesty et al. 1994:3.2). The Riepetown study devised 10 “problem domains,” each of which included “problem areas” that became the focus for the development of specific research issues or hypotheses. One of the principal domains examined by the study was that of the copper-industry workers and their labor history. Under this domain, three problem areas were identified: worker’s housing, health and nutrition, and lifestyles. Research issues investigated included whether the absence of company regulation allowed the retention of ethnic or individual lifeways, thereby avoiding the “homogenized” lifestyles across ethnic, social and cultural lines seen at company towns with strict regulations. The manifestations of this heterogeneity were examined with regard to workers’ lifestyles, food, and household organization.

Cole and Nelson Sawmill Site, Sierra County, California. In 1992 data-recovery excavations were carried out at the Cole and Nelson Sawmill (CA-SIE-336/H), by the Anthropological Studies Center (Praetzellis and Praetzellis 1993). The mill, a short-term operation begun in 1883, lasted just six years before it had exhausted local timber reserves. It was then dismantled and moved to fresh timber producing areas, reflecting a pattern common to small mills in 19th-century California. The archaeological remains included the area of the steam-powered mill, the camp blacksmithy, and domestic refuse areas. The 1992 project considered hypotheses relating to both the technology used in the camps
and the social condition of its workers. Hypotheses relating to technological innovation centered on the extent to which small-scale, local capitalists attempted to minimize their financial risk by balancing investment in newer, more efficient machinery, versus a continued reliance on older, more labor-intensive technologies (Praetzellis and Praetzellis 1993:16). In looking at the social structure of the camp, Praetzellis and Praetzellis (1993:18) considered whether the operator’s attempts to regulate employee behavior was limited to that which directly affected the operation’s profitability. The excavation found that the mill’s equipment had been chosen primarily for its ability to be maintained under difficult work conditions, rather than for its advanced technology. Little evidence was found to suggest that camp operators had attempted to control the after-hours behavior of its crew. On the basis of these findings, the authors suggested that smaller worker camps did not attempt to restrict worker behavior outside of work hours, while larger work camps or boarding houses, which tended to be both more institutionalized and bureaucratic, more often sought to regulate broader aspects of their employees’ lives (Praetzellis and Praetzellis 1993:iii).

**Alabama Gates Construction Camp, California.** This camp was one of 57 work camps associated with the construction of the Los Angeles Aqueduct by the Los Angeles Department of Water and Power (Van Bueren et al. 1999). The camp was occupied for less than a year, ca. 1912, by an average of 137 workers. It was located in close proximity to the town of Lone Pine. The archaeological potential of the Alabama Gates site was similar to that of many short-term work camps in that while historical documents provided information regarding the general context of the economics, available technology, and social composition of aqueduct construction camps in general, little information was available concerning the actual functioning or social composition of the individual camps. Archaeological excavation was used to examine the extent to which the Alabama Gates camp varied in its layout and social structure from information obtained from official Los Angeles Department of Water and Power records. Under the general theme of labor history, research issues also included the demographic composition and social stratification of the camp, its spatial layout and facilities, subsistence patterns of its workers including whether food was prepared by individual households or communally, the extent to which the camp operators attempted to control the after-hours behavior of its workers, and the types of technology represented in the camp. Further investigating the economic and social constraints that operated within these isolated work camps, Psota (2002) analyzed the work clothing buttons recovered from the Alabama Gates Construction Camp in order to assess the factors influencing the consumer strategies of its inhabitants. She found that the camp workers had limited access to clothing merchandise, and that durability, cost and availability, rather than brand loyalties, were probably the main factors influencing clothing choice (Psota 2002:125).

**Research Issues: Logging and Milling Archaeological Resources**

**Research Theme: Technological Development**

Logging and sawmill sites from the 19th and early 20th centuries have the ability to address important issues regarding the effects of technological change, and increased capitalization on the industrialization of rural California. The short-term itinerant sawmill was a common employer of rural labor in California during the second-half of the 19th
century when the combination of an expanding economy, growth of small towns, limited transportation options, and a ready workforce produced a climate conducive to labor-intensive, mobile timber getting. The 1880s and 1890s saw the introduction of several new milling technologies, such as the steam traction, or “donkey” engine in 1881, and the bandsaw in the 1890s. By the first decade of the 20th century, the increasing dominance of the industry by larger, corporate mills reduced the viability of itinerant sawmill operations. Essential components of both mobile and later sedentary millsites were the associated logging areas, the mill area itself, a blacksmithy, and a work camp (Praetzellis and Praetzellis 1993:14). Medin (1994) provides discussions of logging technology and property types that are useful for the research and management of logging-related cultural resources.

1. Reconstruction of the logging or milling technology used at a particular site.
2. The extent to which newer, more efficient available technology was integrated into the operation.
3. The extent to which loggers and mill owners minimized their capital investment in newer, more efficient technology by emphasizing older, less efficient, more labor-intensive technology.

Data Requirements:
- Intact and closely dated features and deposits within the site’s mill area, or a blacksmithy, in which the majority of machinery was used and repaired.
- Historical research to provide information on the ownership, capitalization, and economic context of the mill operation, and to provide the context to assess how the technology in use on the site related in price, age and technological standards to that available to the site operator.

Research Theme: Social Structure within the Work Camps

Camps for operations such as logging, sawmills, mining, and dam and road construction have the ability to address issues regarding the social and economic circumstances of workers and thereby contribute to the history of labor in industrializing America. The workers in these camps were similar to many other industrialized work groups, including mining camps and industrialized boarding houses of the East, in that they were largely composed of immigrant workers (Praetzellis and Praetzellis 1993:17). The conditions of workers in the logging and milling camps can be compared to that of similar camps, factories, and boarding houses to assess the relationship between the workers’ ethnic and social backgrounds, and attempts by employers to regulate their lives, both during and after work hours. Industrialization, which increasingly centralized workers in one area, made workers vulnerable to attempts at social control conducted in the name of increased profitability. These attempts at control might include restrictions on consumption of alcohol or other leisure activities such as gambling after work hours. The domestic reform movement in the late 19th century gave a moral rationale to these attempts by claiming that it was an employer’s duty to improve the living conditions of the working class. These improvements were often translated as encouraging the working class, often newly arrived immigrants, to adopt middle-class values. Archaeological studies of these issues of social control include Mary Beaudry’s and Steve Mrozowski’s work on
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the Boott textile mill in Lowell, Massachusetts which examined the context and operation of social control as imposed upon, and resisted by, an industrialized workforce (Beaudry and Mrozowski 1987-1989, Mrozowski et al. 1996).

1. The ethnic, gender, age, and economic composition of employers and employees at the site.

2. The degree to which the spatial patterns of work and living arrangements reflected social stratification or ethnic separation of the workforce.

3. Workers’ relationship to surrounding communities.

4. The degree to which the sites’ operators attempted to regulate the after-hours behavior of their workers.

5. The degree to which these attempts at regulation were limited to those types of behavior that affected the operation’s profitability, or were more generalized attempts to instill middle-class values on the operation’s employees.

6. Evidence that the operation’s employees resisted these attempts to regulate their behavior.

**Data Requirements:**

- Archaeological evidence of the workers’ living area, with particular attention paid to evidence relating to the consumption of social drugs, such as alcohol, opium, tobacco, or leisure activities such as gambling.

- Evidence of discrete and closely dated features or deposits that can be associated with particular ethnic or social groups.

- Evidence of discrete and closely dated features and deposits that can be associated with individual worker or camp-operator households.

- Historical research to elucidate workers’ demography, living arrangements, employment patterns, food supplies, recreation, and their ability to visit or obtain supplies from local communities.

**Urban Residential Archaeological Resources**

Residential sites offer a wide range of opportunities for archaeological investigation. Numerous residential sites are represented in the PRNS–GGNRA parklands. These range from the exclusive Sutro House to the modest accommodations of many Presidio residents (Figure III.6). The research potential of domestic residential sites related to farming enterprises is considered above in the section on Agricultural Resources.

Working-class residences form an important aspect of the built environment and archaeological resources in some areas of the GGNRA such as the Presidio. The working-class residences of urban areas have become a focus of investigation for historical archaeologists in the U.S. In part, this is a response to the perception that the working class was underrepresented or overly stereotyped in contemporary 19th-century documentary sources, and that archaeology can contribute to a clearer understanding of how working people lived within the social, economic, and, at times, ethnic constraints to which they were subject. Many archaeologists working in what were urban working-
class neighborhoods have adopted an historical contextual approach, mindful of Gutman’s (1977) assertion that the working class throughout America, and even within individual cities, did not have a homogenous identity. Instead, the American working class was constantly supplemented by immigrant populations who brought their own ethnicity, culture, and group and individual experiences to bear on how they met the demands of urban industrialized living in the U.S. The waves of immigration and the experience of working within the various industries in which immigrants and others found themselves employed, created a multitude of working-class circumstances and identities that could be unique to the economic, ethnic, and social contexts of individuals or families. As Upton (1996) has pointed out, within such a swirling ethnic milieu, individuals can have additional freedom to deliberately create public identities, and to give meaning to artifacts and situations that can only be discerned through an analysis of context. Thus, different groups or even individuals can give very different meanings to the same artifacts or places. Archaeologists are increasingly incorporating a sensitivity to the ability of individuals to shape their surroundings and give meaning to artifacts and places, under the concept of agency (Yamin 2000b:6). Archaeologists analyzing urban sites in the U.S. have frequently interpreted archaeological patterns, such as those of the consumption of mass-produced material goods, as reflecting either a resistance to, or subscription to, dominant ideologies such as Victorianism. As Yamin notes, however, in addition to reflecting economic constraints, group identities, and the influence of dominant ideologies, consumption can also be used by people as a form of empowerment to create and project self-image: “workers in nineteenth-century New York, and elsewhere in the industrialized world, did not necessarily need to buy into the dominant ideology to feel that they deserved a piece of the pie” (Yamin 2000b:6-7).

Within San Francisco and the greater Bay Area, archaeological investigations on urban residential sites have been conducted in West Oakland (Praetzellis 1994), the City Front area (Dean 1998), and the houses of officers’ families at the Presidio (Voss et al. 2000), among other locations. The majority of these excavations have employed variations on a research design for urban residential projects developed by Praetzellis and Praetzellis (eds. 1993:251-255) that emphasizes contextual study on both the site and neighborhood level to consider issues such as consumer behavior, the structure and composition of urban households, ethnicity, and urban geography.

Comparative Research on Urban Resources

Hooker’s Division: International Cultural and Trade Center/Federal Office Building, Washington D.C. In the late 1980s, John Milner Associates, Inc., conducted Phase II and Phase III archaeological investigations on the proposed site of the International Cultural and Trade Center/Federal Office Building in Washington D.C. (Cheek et al. 1991). This site had been developed in the historic period by the early 19th century. By the mid-19th century, the area had a reputation for drinking, gambling, and prostitution. During the Civil War, it was known as Hooker’s Division, where soldiers of Major General Joseph Hooker frequented its saloons and brothels. By 1870, however, the neighborhood was characterized by working-class family households and boarding houses, although within 20 years it had again reverted to a red-light district. Test excavations were conducted on 42 house lots, of which 26 retained potentially valuable archaeological deposits. Data recovery investigations were conducted on a sample of nine house lots. Research
concentrated on the analytical level of the household, where artifact deposits could be associated with a defined house-lot occupation period, or with the neighborhood, in the case of those deposits which could not be associated with an historical identified household (Cheek et al. 1991:5). Research conducted with deposits associated either with specific household occupants, or with household types (e.g., prostitutes as opposed to other working-class inhabitants), were concentrated on issues of consumer behavior (using ceramics and meat cuts as indexes of the relationship between consumer choice and consumer socioeconomic status), ethnicity (using historical information relating to family cycle and structure), and artifact patterns for analysis of lifeways, prostitution, and illegal activities (based on historical documentation and artifact analysis). Three research domains were identified at the neighborhood scale of analysis: the material culture of a working-class neighborhood, the effects of urbanization on such a neighborhood, and the impact of class differences (Cheek et al. 1991:6-7). Much of the research relied on the use of comparative collections from similar working class neighborhoods that had been previously excavated in Washington D.C. (Cheek et al. 1991:7). Archaeological features were successfully associated with one of two types of households: those occupied by prostitutes and those occupied by other working-class inhabitants. Analysis of the 1988 excavations and comparative collections indicated that distinctive artifact deposits were associated with working-class residential households and those occupied by prostitutes. It was found that prostitutes were more likely to have spent more money on personal items and clothing than other working-class households. Households containing prostitutes also spent greater sums of money on a higher standard of living, as suggested by the greater concentration of lamp glass and expensive meat cuts than was evident in working-class households (Cheek et al. 1991:69-70).
Central Artery/Third Harbor Tunnel Project, Boston, Massachusetts. This project, conducted by Timelines, Inc., and John Milner Associates, Inc., involved the excavation during the 1990s of three colonial-period urban historic sites—Paddy’s Alley, Cross Street Back Lot, and Mill Pond—as part of a highway-construction project in central Boston (Cheek 1998:1). These three sites contained artifact deposits associated with five families who lived in the area, which at that time was inhabited primarily by artisans and merchants. The research design was primarily based on that previously developed for historic archaeological resources in the city of Boston (Mrozowski 1985). The former emphasized context and process, and outlined four broad research domains: adaptation; work; settlement processes and core/periphery relationship; and social groups. It discussed each of these themes in relation to Boston’s historical development and how they could be elucidated by archaeological research (Elia and Seasholes 1989:12). The excavated assemblages from the Central Artery Project revealed important information about historic foodways in the Boston area and about the animal husbandry practices used in supplying food to the city (Bowen 1998:137; Cheek 1998:2). Other findings included insights into the process of urban cultural landscape development within Boston, through filling episodes around Boston’s shoreline and the construction of wharves (Balicki 1998; Seasholes 1998).

Five Points, New York. Between 1991 and 1992, John Milner Associates, Inc., investigated City Block 160, which had once been part of Five Points, New York’s most notorious 19th-century slum (Yamin 1998, 2000a, 2000b). The Five Points area of New York, initially an artisan-industrial district, grew into a rental accommodation center for New York’s growing working-class population. As Yamin notes, during the 19th century Five Points symbolized the poverty, criminality, and urban decay that was the negative side of industrialization. It was a symbol for the middle class that allowed them to measure and reconfirm their own values of Victorian rectitude, materialism, and social behavior (Yamin 2000b:1). The Five Points excavations provided an opportunity to investigate working-class culture and material circumstances from the late 1700s until the close of the 19th century (Yamin 2000b:1). One of the goals of this study was to provide a contextual study of the Five Points working-class culture that could provide cross-cultural comparisons with the experience of the working class in comparable urban, post-Industrial Revolution situations around the world (Yamin 2000a:9). The study investigated five research domains: the socio-economic and ideological processes that contributed to the social construction of Five Points as a “slum”; the construction of class, race, and ethnicity in an urban context; the nature of family, kinship, and household organization; work and industry in a developing capitalist economy; and health and hygiene in an urban context (Yamin 2000a:13). In exploring these research domains, John Milner Associates emphasized a contextual approach to the study in an effort to build an understanding of Five Points both as a symbol for the middle class, and as a reality in which many people lived their lives. This contextual approach resulted in an emphasis on “agency”—an increasingly common theoretical orientation, as noted above, that seeks to identify how people manipulated their economic, social, and ethnic circumstances to fulfil their own goals (Yamin 2000b:6).

Guadalupe Parkway, San Jose. In 2000 Foothill Resources, Ltd., KEA Environmental, Inc., and Past Forward, Inc., collaborated to prepare a research design for the upgrading of the Guadalupe Parkway, San Jose, California. This project resulted in...
the excavation of portions of the Woolen Mills Chinatown, an area of San Jose inhabited by Chinese immigrants from 1887 until 1902, when it burnt down. The research design prepared for the project (Allen et al. 1999) identified five historic-period property types expected to occur within the project area. These were archaeological remains representing refuse, architecture, agriculture and landscape, urban infrastructure, and industrial processes (Allen et al. 1999:6-1). Research themes applied to these property types included issues related to Colonization and Early Settlement of the San Jose area (such as the original layout of the San Jose pueblo), Ethnicity and Boundary Maintenance, Victorianism and Urban Geography, Industrialization and Technology, the identification of Traditional Cultural Properties such as might have been developed by the Chinese inhabitants, and the potential of the area for public interpretation.

**Research Issues: Urban Residential Archaeological Resources**

Many of the issues discussed below are taken from Praetzellis and Praetzellis (eds. 1993:251-255).

**Research Theme: Consumer Behavior/Social Economic Status**

1. Consumer practices and disposal behavior of members of a specific social, occupational, economic, or ethnic group.
2. Availability of various classes of consumer goods at a specific place and point in time.

**Data Requirements:**

- Habitation history of the site as derived from census, tax assessments, Sanborn records.
- Presence of archaeological features containing artifacts of sufficient quantity, integrity, variety, and association to allow for the development of comprehensive interpretations.

**Research Theme: Urban Households**

1. Adaptive behavior in urban settings associated with the acquisition and consumption of foodstuffs, or the organization and use of space.
2. Landscape alteration, water and waste management, outbuilding construction, and dwelling renovation, as these relate to changes in household composition.

**Data Requirements:**

- Habitation history of the site as derived from census, tax assessments, Sanborn records.
- Presence of archaeological features containing artifacts of sufficient quantity, integrity, variety, and association to allow for the development of comprehensive interpretations.

**Research Theme: Urban Geography**

1. The beginning of urban planning in the city, including water supply and storage, trash and sewage disposal, fire protection, and drainage.
2. Changing land use, the changing functional and spatial organization of the city.
3. Neighborhood formation, residential differentiation, and the emergence of culturally and economically homogenous neighborhoods.

**Data Requirements:**
- Habitation history of the site as derived from census, tax assessments, Sanborn records.
- Historical research, including government records and newspaper archives, to provide context regarding neighborhood composition and development in urban infrastructure in the study neighborhood.
- Comparative data from household lots within the same or comparative neighborhoods, from archaeological features containing artifacts of sufficient quantity, integrity, variety, and association to allow for the development of comprehensive interpretations.

**Research Theme: Ethnicity/Urban Subcultures**
1. Rise or relative influence of Victorianism as a class-based ideology.
2. The relative influences of economic distinctions and the development of mass production and world trade on the material culture of ethnic and subcultural distinctions.
3. The role of symbols such as artifacts in defining and maintaining boundaries between groups.
4. The relationship between competition among social groups and their social distance.
5. The dynamics of cultural pluralism and social stratification during the 19th century.

**Data Requirements:**
- Habitation history of the site, including ethnic identification of various site inhabitants, as derived from census, tax assessments, Sanborn records.
- Presence of archaeological features containing artifacts of sufficient quantity, integrity, variety, and association to allow for the development of comprehensive interpretations.
- Analysis of botanical remains, including pollen, to reconstruct changes in local vegetation patterns in the neighborhood.

**Landfill-related Archaeological Resources**

Landfills were a common feature of the 19th-century urban landscape, particularly those adjacent to bays, rivers, or lakes. Landfill techniques were used for a variety of purposes: to create additional land suitable for development, to mitigate against circumstances of the city’s location such as flooding, and as a convenient means of refuse disposal. Landfill can be seen as broadly falling into two types: off-site or “purposeful”
fill, which involves sediment and soil being brought in and deliberately dumped in order to raise the ground surface; and inadvertent or in situ fill that is created when neighboring residents or businesses use low-lying areas, including backyards and vacant lots, for refuse disposal (Yentsch 1993:332-337). Purposeful fill often has only limited potential to provide information that relates to archaeological research issues, with a few exceptions: where it reflects a transition in land use it can potentially be used to make broad interpretations or large-scale comparisons; and where its content may potentially be associated with a particular group or neighborhood (Praetzellis and Ziesing 1998:63). Despite these exceptions, Yentsch had noted that the research potential of purposeful fill is largely limited to how it assists researchers in understanding the taphonomic development of the site (Yentsch 1993:335). Allan and Self (1994:12) have also emphasized the importance of association with a neighborhood or community when evaluating the research potential of landfills.

The examination of landfill practices and their affect on the methodology of archaeological excavations have been considered in several U.S. cities. These include the examination of water-front filling episodes to create additional land in Boston (Balicki 1998; Seasholes 1989), filling episodes of the bayshore and slough area in San Francisco, such as Crissy Field (Holman & Associates 1999), and raising of city blocks to prevent flood damage in Sacramento, California (Praetzellis and Praetzellis 1990a). Landfill has the potential to contribute to a number of archaeological research areas, including the development of a city’s physical landscape, the tension between private interests and publicly mandated landfill projects, and the cultural and economic context of landfill projects. As noted by Praetzellis and Ziesing (1998:53), the archaeological potential of artifacts contained within landfill deposits is dependent upon the “content, integrity, and focus of the landfill, and whether its content can be used to address larger research issues such as the delineation of trade networks . . . or the reconstruction of the material culture and eating habits of a particular group at a specific time.” The significance of landfill as an archaeological resource largely depends on the historical context of the fill episode. For example, episodes of private landfill in back yards can create deposits that can be associated with households. Alternatively, large-scale publicly initiated landfill projects can may be more difficult to investigate archaeologically due to issues of sampling, and whether “clean” or imported fill was used that cannot be closely associated with particular eras, neighborhoods or organizations.

However, it may be possible to overstate the importance of association in attributing research potential to landfill and nonresidential dumpsites. As Deetz (1991:7) notes, artifact collections from landfills may have research relevance if the spatial scale of research increases. Collections derived from the sampling of city dumps can be compared to comparable sites of similar periods in other cities. The sampling and analysis of these sites can assist in the investigations of national or world-scale supply systems, by the examination of variation in specific types of artifacts found in the deposit, or by contributing to an understanding of differences or similarities in supply patterns of cities and towns that might at first glance be associated with very different cultural and global contexts (Praetzellis and Ziesing 1998:64). This has been supported by studies of landfills and nonresidential dumps on the East Coast, which have been analyzed to provide “broad sweeping patterns of changing behavior within the society itself, looking at the contents
as indicative of the relation between overseas market origins of consumer products and incipient nationalism (i.e., the growth of nation-state identities that subsume cultural subclasses or ethnic minorities” (Yentsch 1993:333). Yentsch suggests that it may be possible to investigate such conditions in San Francisco by using phases of city development largely derived from the archival historical record to provide a classification system to understand and interpret changes in contents in the landfill or dump over time. She does note, however, the potential difficulty in using landfill to consider these type of issues in a city such as San Francisco, which experienced a high mobility, complex ethnic composition, and a steady influx of migrant cultures. These factors would make it difficult to develop useful, broadly applicable interpretations for material from landfill or dump sites that could not be associated with discrete social units at any scale (either specific communities, neighborhoods, or households).

Reclamation of low-lying bay and slough areas has been an important urban development strategy within San Francisco, since the 1850s, but cases of the archaeological investigation of fill have been limited. These include the Crissy Field project, fill incidentally encountered in the process of excavating buried Gold Rush-period ships, the potential for historic fills in the Muni Metro Turnback Project on the San Francisco Embarcadero (Allan and Self 1994), and the excavation of a cache of refuse, the so-called “N-5 Dump,” from nearby Chinatown in the 1880s that was uncovered in excavations behind the San Francisco Seawall (Pastron, Pritchett, and Ziebarth 1981).

**Comparative Research on Landfill-related Resources**

**Colonial-Period Boston, Massachusetts.** Successive episodes of land filling during the colonial period resulted in the creation of large amounts of land around what was formerly the narrow-necked peninsula at the center of what is now downtown Boston. One of the areas filled in was the so-called Mill Pond, which was created in the 1640s by the damming of a deep bay and the construction of tide mills across its access (Seasholes 1998:121). The Mill Pond itself was largely filled in during the early 1800s as a speculative
venture in creating house lots for Boston’s growing population. Archival investigations conducted as part of the Central Artery/Tunnel Project provided much contextual data regarding the sequence of filling and the land-making techniques employed. The project also shed light on the controversial nature of the landfill project and contemporary prejudice against made-land, which held that these lands were often created out of filth or garbage and were therefore a potential source of disease. Archaeological investigations examined techniques used for land-filling, including the use of wharves as both unloading/mooring points for ships and retaining walls for fill (Seasholes 1998:122-123, 130).

**Crissy Field, San Francisco.** Crissy Field within the Presidio de San Francisco is a former tidal marsh that was filled in during the historic period and recently restored (Figure III.7). Prior to the restoration, the area was thought to cover the Presidio’s Quartermaster’s Dump, and an archaeological research design for excavations at the site was prepared (Clark and Ambro 1999). The research design included issues related to the identification of refuse disposal patterns at the Presidio. The test phase of the project revealed the presence of a large deposit of material, covering approximately 10.3 acres, relating to the Presidio’s organized system of dumping from the 1880s to 1912. In 1912 the area had been covered with dredged bay sands in preparation for construction of buildings for the Panama Pan Pacific Exposition. The dump deposit was excavated non-stratigraphically and 120 samples, each approximately 9 cubic feet in volume were recovered. Based on the findings of the test excavations, Holman and Associates suggested that several areas within the Crissy Field site could potentially contribute to the Presidio’s NHL listing, and data-recovery excavations were undertaken (Ambro and Clark 2003).

**Research Issues: Landfill-Related Archaeological Resources**

These issues are taken from Praetzellis and Ziesing (1998:64).

**Research Theme: Landfill Sites**

1. Neighborhood or citywide consumption and disposal patterns. Can this landfill contribute to the study of “global archaeology?”

2. The consumer practices and disposal behavior of members of a specific social, occupational, economic, or ethnic group; or of local people at a specific point in time. Does this landfill add to our knowledge of the availability of various classes of consumer goods at a specific point in time for which such information is lacking in the historical record?

3. Butchering practices and meat-cut/species availability at a time and place

**Data Requirements:**

- Landfill deposits with diagnostic artifacts that can be associated with a specific group/neighborhood or with an identified period of deposition.

- Documentary records, including photographs, newspaper and narrative accounts relating to publicly mandated landfill projects, initiation of public refuse infrastructure, such as trash carting, and disposal practices of different communities and neighborhoods.
CONCLUSION

The PRNS–GGNRA encompasses cultural resources that relate to many of the principal themes in the historical development of the San Francisco Bay area. From pre-contact Native American sites to Nike Missile silos, the parklands include resources that represent different scales of activity such as individual actions, corporate ventures, state institutions, and events and activities that were of national and even international importance. There are few if any parallels to this situation, in which such a rich suite of cultural resources representing the historical development of a world-class metropolitan center has been so accessible to the public.

The richness and complexity of these resources pose diverse challenges for land managers, particularly as recreational and natural values form such as large part of the public perception of the parklands. To assist staff in developing appropriate and innovative cultural resources management options, NPS has been proactive in developing a management framework. The framework includes legislative requirements, the Secretary of the Interior’s Standards and Guidelines for Archaeology and Historic Preservation, internal NPS guidelines such as DO-28, and a series of comprehensive contextual histories that provide much of the historical information necessary to begin to manage cultural resources. This overview is part of that management framework. It provides information on research issues that are relevant to selected historic archaeological property types that are known to exist, or can be anticipated to exist, within the PRNS–GGNRA. The coverage of this overview, however, is not exhaustive. Complex historical themes, such as the use of the project area by the U.S. military or the commercial development of water resources, and themes that relate to more geographically discrete property types within the PRNS–GGNRA, such as mining sites, would benefit from individual studies that can more closely identify relevant research issues and management concerns.

Research is an indispensable stage in developing suitable management options for cultural resources. To date, a large portion of the research, management, and interpretive energies of the PRNS–GGNRA has been devoted to its substantial and very significant holding of extant buildings and structures, while relatively little attention has been paid to surface and subsurface archaeological features. Research into the latter has primarily been conducted in response to development activities. As the Presidio of San Francisco has been the focus of development actions within the PRNS–GGNRA, it has also been the focus of the majority of archaeological research projects that involve excavation. Given the historical relationship between the Presidio and its occupation by the Spanish, Mexican, and later the U.S. military, it is not surprising that most archaeological excavations have related to these historical themes. It remains the challenge of agencies such as NPS and the Presidio Trust to use the management frameworks and resources, together with innovative research options such as collaborative agreements with educational institutions, to broaden the scope of archaeological research and interpretation within the PRNS–GGNRA.
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APPENDIX

RESEARCH SOURCES RELATING TO HISTORIC-PERIOD DAIRIES

by

Christina MacDonald
## APPENDIX: RESEARCH RESOURCES RELATING TO HISTORIC-PERIOD DAIRIES

Christina MacDonald

### Table III.3. Research Resources Relating to Historic-period Dairies

<table>
<thead>
<tr>
<th>Relevant Theme/Site or Element Type</th>
<th>Bibliographic Reference</th>
<th>Summary of Source</th>
<th>Relevant Research Questions or Methods</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cattle Ranch</td>
<td>U.S. Department of the Interior, National Park Service, Rocky Mountain Region. Statement for Management: Grant-Kohrs Ranch National Historic Site, 1984.</td>
<td>This document identifies all the resources that are present at Grant-Kohrs Ranch. Located in the Deer Lodge Valley of Montana, the ranch was nominated to the National Register under Criteria A, C, and D. The theme of the ranch is the Frontier Cattle Ranch industry. There is a history of ownership of the ranch up to and including 1984. There is a detailed list of all the easements extant in 1984 and the responsibility of each party for each lot on the ranch. The document's main contribution is to identify the needs of the park in terms of preservation and public outreach.</td>
<td>While this source is not very useful, there may be more modern work done on the Grant-Kohrs ranch that would be more useful in terms of management of a resource with industrial cattle ranching and native natural resource themes. This report mostly addresses questions of maintaining buildings and fences from falling into disrepair, and evaluating the inadequate visitor center is.</td>
<td>University of California, Berkeley, Main Stacks, F739.G6</td>
</tr>
<tr>
<td></td>
<td>U.S. Department of the Interior, National Park Service, Rocky Mountain Region. Cultural Landscape Analysis: Grant-Kohrs Ranch National Historic Site, 1987.</td>
<td>Identifies and characterizes the landscape (both physical and cultural) of the Grant-Kohrs Ranch, and includes the viewshed of the ranch. It identifies the open range viewshed to the north and west of the ranch and the native grasslands present on the ranch. Establishes the theme of the ranch as a historic, open-range cattle ranch that was located along the Oregon Trail. It is an example of the expansion of the cattle industry in the western U.S. and its concentration on the eastern U.S. market.</td>
<td>see above</td>
<td>University of California, Berkeley, Main Stacks, F739.G6</td>
</tr>
<tr>
<td>Relevant Theme/Site or Element Type</td>
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<tr>
<td>Cattle Ranch continued</td>
<td>U.S. Department of the Interior, National Park Service, Rocky Mountain Region. National Historic Landmark Nomination, Grant-Kohrs Ranch, 2002.</td>
<td>Nominated under Criterion A of the National Register of Historic Places, the Historic Landmark’s period of significance is from 1862-1919. The nomination details the structures, vegetation, and circulation networks that shaped and formed the ranch from one period to the next. The historic context for the nomination is westward expansion and open-range cattle ranching.</td>
<td>The Grant-Kohrs nomination could be useful for dairy research because of the similarities between cattle ranching and dairying: many of the same types of structures are needed and many of the same activities take place. This document is helpful because it is very current (1,02) and it evaluates the significance of the property as a district according to the guidelines put forth by the National Register. It addresses circulation networks, irrigations systems, and structures, from the main house to cattle corrals.</td>
<td>Anthropological Studies Center library, Sonoma State University, Rohnert Park, California</td>
</tr>
<tr>
<td>Landscape Archaeology, American Farmstead</td>
<td>William Hampton Adams, Landscape Archaeology and History and the American Farmstead. <em>Historical Archaeology</em> 23(2):113-118. 1989.</td>
<td>This article looks at the American Farmstead and how best to consider this large and multicomponent property type as a unit. There are many helpful suggestions for the land manager and the researcher alike. Also included is historic information on the Progressive movement and scientific agriculture and the effects they had on the construction and organization of farms. There is also attention given to regional styles, but the author warns that the nature of farmsteads is vernacular and many variations occur.</td>
<td>This is helpful for the land manager or researcher to see farms as a unit comprised of many parts set in a larger landscape. It touches upon the farm as a system with &quot;cultural&quot; and &quot;natural&quot; components. Defines what is rural and what rural archaeology encompasses.</td>
<td>Historical Archaeology</td>
</tr>
<tr>
<td>Relevant Theme/Site or Element Type</td>
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<tr>
<td><strong>North Bay Dairy Landscapes</strong></td>
<td>Sue Abbott, <em>North Bay Dairylands: Reading a California Landscape</em>. Penstemon Press, Berkeley, California, 1989.</td>
<td>This is a book for the lay person to identify dairy landscapes in the North Bay, and differences and commonalities between them.</td>
<td>This publication attempts to help the lay person see the dairies and dairy ranches as a landscape unique to that form of production and its California manifestation as different from its eastern sisters. Abbott studied under Paul Groth of U.C. Berkeley, so the document is an interpretive guide to important dairies in the North Bay, with an emphasis on landscape features and perspectives, such as circulation networks. This guide gives an excellent brief history of dairying in the area and the changes to dairy farm/ranch set-up over time in response to economic, cultural, and health/sanitation issues. It also gives a detailed list of private groups involved in preserving dairying in Marin and Sonoma counties and documenting its past.</td>
<td>Tomales History Center, Tomales, California; Charles and Jean Schulz Information Center Special Collections, Sonoma State University, Rohnert Park, California</td>
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<td><strong>Ranching and Dairying in Marin County</strong></td>
<td>John Hart, <em>Farming on the Edge</em>, University of California Press, Berkeley and Los Angeles. 1991.</td>
<td>This is an informative guide to the families that have been ranching and dairying in Marin County back since the historic period. It consists of many interviews with the ranchers, while giving a history of the development and support of the ranching community.</td>
<td>This publication is different from others consulted because it is a personal account of the political and land-ownership struggles that the ranchers in Marin County have encountered throughout the years, mostly since the U.S. government created Point Reyes National Seashore. It is also the struggle between the eastern part of the county, which is densely populated, and the western part of the county, which is predominantly agricultural, and the choices and priorities that Marinites have made to support the ranchers and not develop western Marin.</td>
<td>Tomales History Center, Tomales, California; Charles and Jean Schulz Information Center Special Collections, Sonoma State University, Rohnert Park, California</td>
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Table III.3. Research Resources Relating to Historic-period Dairies (continued)

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<td>Archaeology of Rural Modernization of Farms in the Savannah River Area of South Carolina</td>
<td>Melanie A. Cabak and Mary M. Inkrot, <em>Old Farm, New Farm: An Archaeology of Rural Modernization in the Aiken Plateau, 1875-1950</em>. Savannah River Archaeological Research Papers 9. Occasional Papers of the Savannah River Archaeological Research Program, South Carolina Institute of Archaeology and Anthropology, University of South Carolina. 1997.</td>
<td>This book has three goals: the authors address the national trend of modernization of rural agricultural regions and how it has manifested in the Aiken Plateau; they attempt to reconstruct the material culture of the Aiken farmers between ca. 1875 and 1951; and they make recommendations for managing the 20th-century archeological resources at this Savannah River site. The authors provide previous research on the subject matter; a succinct definition of modernization; an agricultural history of the region; land transfer and use patterns; oral-history information and architectural and archeological analysis and a regional model of the area; and an analysis of farm modernization on the Aiken Plateau.</td>
<td>This source is helpful in many ways: it deals with a national trend on a local level, what the archaeological record tells about the actual life of the people present, and how resources found in a rural (non-modernized) context can be managed. It is an academic publication sponsored by the University of South Carolina.</td>
<td>Anthropological Studies Center library, Sonoma State University, Rohnert Park, California</td>
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### Table III.3. Research Resources Relating to Historic-period Dairies (continued)

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<td>Commercialization and Capitalist economies in three rural farming areas in New York</td>
<td>Joseph Sopko, Farmstead Archaeology and the Impact of Agrarian Change at Three Sites in Eastern New York State. In Nineteenth- and Twentieth-century Domestic Site Archaeology in New York State, edited by John P. Hart and Charles L. Fisher, pp. 149-175. New York State Museum Bulletin 495, University of the State of New York, Albany, New York. 2000.</td>
<td>This article reviews three rural farm sites in New York state and their transformation from subsistence to capitalist or commercial agricultural economies that focused on one product: Dairying was the main production for the White farm. There was a national trend toward commercial, capitalist production from 1855 to 1865 in American farms, and the author looks at the playing out of this trend at the household level for each site using archaeological testing.</td>
<td>The use of archaeological testing to reveal a local, site-specific manifestation of a national trend in a rural farming context is helpful for comparative purposes and as a model for research that seeks to carry out similar research.</td>
<td>Anthropological Studies Center library, Sonoma State University, Rohnert Park, California</td>
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<td>Dairying in the Salinas Valley, Monterey County</td>
<td>Anthropological Studies Center, Historic Studies Report/Phase II Proposal, Salvador Espinosa Adobe (CA-MNT-1492H), State Highway 101 at 662 El Camino Real, Salinas Monterey County, California</td>
<td>Section 106 and CEQA compliance report. Outlines the methods for the identification and evaluation of potential archaeological remains at the Espinosa Adobe site (CA-MNT-1492H), and the criteria by which their integrity and importance will be assessed.</td>
<td>Serves as a guide or example of how archaeological investigations were proposed at a dairy ranch with resources/structures that date to before the American period in California history.</td>
<td>Anthropological Studies Center library, Sonoma State University, Rohnert Park, California; Northwest Information Center, Rohnert Park, California</td>
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<td>Dairying in the Salinas Valley, Monterey County continued</td>
<td>Anthropological Studies Center, Historic Studies Report/Phase II Evaluation of the Espinosa Adobe (CA-MNT-1492H), Monterey County, California.</td>
<td>Section 106 and CEQA compliance report. Describes the results of archaeological testing and evaluation of archaeological resources at the Espinosa Adobe site (CA-MNT-1492H). Testing included remote sensing; electrical conductivity; ground-penetrating radar; mechanical test trenching; shovel-test units. Artifact cataloging; geophysical study; botanical study; and soil testing were also completed.</td>
<td>Serves as a guide or example of how archaeological investigations were carried out at a dairy ranch with resources/structures that date to before the American period in California history.</td>
<td>Anthropological Studies Center library, Sonoma State University, Rohnert Park, California; Northwest Information Center, Rohnert Park, California</td>
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<td>Dairying in Santa Cruz County</td>
<td>Environmental Science Associates, Coast Dairies Long-term Resource Protection and Use Plan - Existing Conditions Report, Draft Report - Updated, 2001.</td>
<td>The Coast Dairies area of Santa Cruz County was purchased by the Trust for Public Land in 1997, and will eventually be placed in the stewardship of the BLM and State Parks. As a result of this ownership, this Existing Conditions Report (ECR) was undertaken to comply with NEPA and CEQA. It identifies and assesses the data gaps and uncertainties in the scientific record for this part of the Central Coast. Information for this ECR will be maintained using a geographic information system (GIS).</td>
<td>This report is created in terms of Adaptive Management, for long-term, reflexive management of resources. Section 1.0 of this report is a land-use history of the Santa Cruz County Davenport Dairy. It begins with the physiography of the area and its prehistory and continues through to the change of the ranch from dairying to cement manufacturing. The report also looks at current land use and the demands placed on landscapes with competing interests, such as recreational use and cultural and natural resources.</td>
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<td>Vermont Dairying</td>
<td>H. Eliot Foulds, Katherine Lacy, Lauren G. Meier, and Olmstead Center for Landscape Preservation, <em>Land Use History for Marsh-Billings National Historical Park</em>. Cultural Landscape Publication No. 4. National Park Service, 1994.</td>
<td>This publication was received too late to review.</td>
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<td>Anthropological Studies Center library, Sonoma State University, Rohnert Park, California</td>
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<td>Farmstead and Regional Contexts</td>
<td>John S. Wilson. <em>What Makes an Historic Farmstead Significant?</em> <em>Historical Archaeology</em> 24(2):23-33. 1990.</td>
<td>This article attempts to look at the American farmstead and bring more importance to its place in American history. The authors argue that because there are so many farmsteads in America, perhaps it would be better to consider individual farmsteads as representative of greater regional trends, in terms of broader geographic and temporal context. An important aspect of research on American farmsteads is that most are recorded/evaluated by CRM groups, who evaluate their significance. Wilson suggests that Criterion D is a useful way of evaluating farmstead significance and for nominating districts and multiple properties. Wilson is arguing for a new analytical focus for dealing with farmsteads in America. He realizes that large CRM projects can have several farmsteads within one projects area. He recommends that instead of evaluating each farmstead individually, that greater trends in the farmsteads be identified and potential districts or multiple properties be the objective for the evaluation of properties under Criterion D of the National Register. He believes that this way of analyzing farmsteads is a more cost effective and replicable way to maximize the productivity of field efforts in determining significance.</td>
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<td>Historical Archaeology</td>
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<td><strong>Sonoma County Dairying</strong></td>
<td>Sue Abbott, <em>The Changing Landscape of Sonoma County Dairies: An Interpretive Guide</em>, Master of Landscape Architecture Professional Project, University of California, Berkeley, 1986</td>
<td>This is a descriptive guide to Sonoma County’s largest agricultural industry. Abbott uses the current landscape to show change over time, revealing the history of the dairy industry in a way that is accessible to the interested public. Her work lists the important visual vocabulary and the meaning of the various elements present on 6 specific ranches for the reader to learn the basics of landscape architecture.</td>
<td>Abbott’s work is a quick tutorial on reading a dairy landscape and seeing a century-old history embodied in a modern, functioning ranch. She asks the questions of what elements are present, which are used, and which are no longer functional. She gives a brief history of the industry so that the changes in, for example, sanitation can be seen on the landscape. At the end of this book, she mentions the other types of dairy landscapes that have ceased to be working dairies, but whose current use has not changed the landscape, such as beef grazing on former dairies, or the replacement of grape vines in former grazing areas that leave the insular dairy farm buildings untouched. She also includes at the end of the book a literature list of some more topic-specific sources.</td>
<td>Anthropological Studies Center library, Sonoma State University, Rohnert Park, California; Northwest Information Center, Rohnert Park, California</td>
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<td>Dairying on the Point Reyes Peninsula</td>
<td>D.S. (Dewey) Livingston, <em>Ranching on the Point Reyes Peninsula</em>. Historic Resource Study. National Park Service, PRNS, Point Reyes Station. 1994.</td>
<td>This National Park Service publication is a ranch-by-ranch history and evaluation of the historic dairy ranches located on the Point Reyes peninsula. It includes a history of the land occupation and ownership from the early Mexican landgrant era, to the Howard Shafter industrial dairy operation, to its purchase by the National Park Service.</td>
<td>This is a detailed history and architectural inventory of the dairy ranches on the Point Reyes peninsula. It is invaluable for any study of the dairy industry on Point Reyes.</td>
<td>Anthropological Studies Center library, Sonoma State University, Rohnert Park, California; Northwest Information Center, Rohnert Park, California</td>
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<tr>
<td>Dairying In the Olema Valley</td>
<td>D.S. (Dewey) Livingston, <em>A Good Life: Dairy Farming in the Olema Valley</em>, Historic Resource Study. National Park Service, PRNS, Point Reyes Station. 1995.</td>
<td>This National Park Service publication is a history of dairying in the Olema Valley and Lagunitas Canyon area. It records the historic resources of that area and includes historic and new maps, and historic photos of the people of Olema.</td>
<td>This is a historic resources study and inventory of these resources. It is invaluable for any study of the dairy industry in Olema Valley.</td>
<td>Anthropological Studies Center library, Sonoma State University, Rohnert Park, California; Northwest Information Center, Rohnert Park, California</td>
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<td>Ranching in Alameda and Contra Costa Counties</td>
<td>Grace Ziesing, <em>Investigations of Three Historic Archaeological Sites, CA-CCO-447/H, CA-CCO-445H, and CA-CCO-427H, for the Los Vaqueros Project, Alameda and Contra Costa Counties, California</em>, Anthropological Studies Center, 1996.</td>
<td>Contra Costa Water District’s Los Vaqueros Project required compliance with NHPA and CEQA. This report was part of a phased treatment plan for historic resources at three sites. The archaeological research undertaken here began with prefield research, excavation, GPS recordation, and artifact analysis. The types of resources encountered were ranching-associated, including a livestock shelter (CCO-447/H); historic farm complex (CCO-445H); and the Perata/Bonfante site (CCO-427H), a tenant ranch.</td>
<td>This report is helpful as an example of archaeological research conducted on historic ranch and farm complexes in the Bay Area. The report addresses such issues as vernacular architecture; ethnicity and tenancy; ranching adaptations and the environment; water management; and modernization of the area.</td>
<td>Anthropological Studies Center library, Sonoma State University, Rohnert Park, California</td>
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<td>National Register Nomination, Dairy Ranching in San Mateo County</td>
<td>Kent L. Seavey, <em>National Register of Historic Places Registration Form for the Robert Mills Dairy Barn</em>, 1990.</td>
<td>This is a nomination for a dairy barn and ranch complex. It is pertinent to other dairy research because it touches upon common themes to the dairy industry: economic system based on tenant farmers; European ethnicity of tenant farmers; and European vernacular architectural traditions as manifested in this Californian setting. This nomination gives a well-written and concise history of dairying in San Mateo County, as well as the architectural details that are required for National Register nominations.</td>
<td>This source, an accepted nomination to the National Register, is a good model for future nominations. It is well-written and incorporates more detail and information than is required to give a holistic picture of this dairy ranch and barn.</td>
<td>Anthropological Studies Center library, Sonoma State University, Rohnert Park, California</td>
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